

ANALYSIS OF PRACTICES FOR TEACHING AND EVALUATING READING ACROSS
THE CURRICULUM AT A PUBLIC UNIVERSITY IN COLOMBIA

BY

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I, (Aldemar Arturo Hernández Fajardo), hereby declare that this master's thesis has not been previously presented as a degree requirement, either in the same style or with variations, in this or any other university.

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Abstract

Reading as well as L2 reading is a primary skill that university students need to develop for having access to relevant information related to their academic context. Nevertheless, learners may experience some reading difficulties due to the complexity of the reading materials managed in tertiary education. Hence, this project becomes significant since it is important to reflect on the teaching processes that are carried out in universities in order to improve students' reading comprehension. This qualitative research project was developed in a public university in Colombia, specifically in two subjects areas of the Food Engineering program. The main objective of the study was to describe how L2 reading was taught and evaluated across the curriculum.

Data was gathered through the implementation of observations, teachers and students' interviews along with the analysis of documents. Results revealed that there is a big discrepancy between the L2 reading teaching methodologies in the two areas analyzed. For instance, the genres of the texts used in both subjects differed in great manner one from the other, using exclusively narrative texts in the English subject and research academic articles in the microbiology area. Findings also indicated that adequate scaffolding needs to be provided to students at the different moments of the teaching and learning cycle in order to foster reading skills and comprehension of texts.

Key words: Tertiary education, reading concept, genre approach, teaching and learning cycle (TLC), interaction, Sociocultural theory (SCT), Scaffolding.

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Chapter 1. Introduction

Reading is one of the most relevant skills that students should develop in order to succeed in the academic world, especially, at a university context where learners will be required to analyze different types of reading materials and technical articles regarding their specific field of study. As Horwitz (2008) states, “reading has the possibility of reducing social distance. Students can learn sound – symbol correspondences, vocabulary, and academic content through reading. And, of course the ability to read and comprehend academic materials is essential for the educational success of many learners” (p.115). Therefore, it can be supported, that the reading activity becomes a essential aspect to be considered in the teaching and learning processes of college students. Besides, as it was mentioned above, students are required to work based on academic texts and materials that are necessary in their education as professionals.

In today's world reading in a second language has become a need for many people. There are different reasons for learning how to read in a foreign language. For instance, students learn how to read in a second language in order to have access to updated information. In most cases relevant and current data related to their major are in English or other languages. Thus, this fact becomes a real demand for students. As Grabe (2009) explains, “students may learn to read a second language as a school subject with little further use outside of the classroom. However, many students use their L2 reading skill to engage in advanced studies, get a good job, travel...” (p.6). Even though, there are different reasons for students to be able to read in a second language, it can be said that the most relevant goal for reading is to succeed in the academic context and consequently to be more prepared to their future professional world. Nevertheless, developing the proper reading skills is not an easy task. In fact, when learning how to read in a second language, students deal with a number of issues that are going to make the reading

process a complex one. In the first place, most of L2 learners have a negative generalized strategy to cope with second language reading materials. Students tend to resort to a constant and total decoding strategy to try to understand the whole reading material. As a result, students will find the reading process as a quite stressful and slow activity that is not going to contribute to reading comprehension. Likewise, “reading in L2 seems to mean almost invariably a slow and laborious decoding process which often results in poor comprehension” (Tomlinson, 2003, p.340). This is a tendency that most L2 students have when dealing with readings in a second language. Therefore, language teachers’ job is key to guide pupils in the development of adequate competences regarding the reading skill. Furthermore, there is an issue related to vocabulary. According to Horwitz (2008) “when reading in L2 a second language learner must deal with a much higher percentage of unknown words and language forms. Thus, the simply decoding of words is typically much more problematic in a second language” (p.117).

Hence, it can be recognized the importance of developing and expanding students’ vocabulary knowledge when reading in a second language. Besides, another obstacle that second language readers can experience is the cultural aspect. Sometimes, when students are able to read a text, they may not really make sense of it just because of the lack of information about the original culture displayed in the reading material. The diversity of the reading materials refer not only to the vocabulary or the lexical components of a text. In fact one of the aspects that can make the comprehension of a text complex is directly related with the cultural background of it (Horwitz, 2008). This is an issue that teachers need to consider taking into account that the reading process is a social interaction that is developed between the reader and the writer or author. Therefore, it is important to guide students and help them to deconstruct the text in an initial instance by

creating and providing the background knowledge that students need to better understand the topic of the reading.

Reading is a skill that most teachers take for granted. When students get to the university education, learners are expected not only to read but to write in a more academic style. Unfortunately, this is a fact that is far away from reality since in many cases it can be noticed that most students are not competent enough to develop appropriate reading comprehension. Apart from this, reading is not a very attractive activity for most learners. On the contrary, students read mostly because they are required to do it in the academic context. Therefore, this becomes another factor to consider as an issue to deal with in relation to the reading activity. For example, Yubero and Larañaga (2015) explain “a significant sample of Spanish and Portuguese students reflect that a number of university students lack reading habits or do not read voluntarily” (p.717).

This research project is intended to be developed in a public college in Colombia. The university offers a wide range of careers in the Humanities and Engineering fields. It has a Language Institute that provides mandatory English courses to all the undergraduate degrees; however, not all of these have the same intensity. In this case, the research will be focused on the Food Engineering as the context of the study. Students from this program are expected to take three English levels as a requirement to graduate. Each course takes five hours per week and has three credits. In the courses teachers claim to apply a communicative approach to language teaching. Thus, they emphasize on the use of language to communicate and interact in the English class by reading and writing simple texts, as well as performing listening and speaking tasks. The teaching of content starts from basic vocabulary and the most relevant language patterns. Students are exposed to reading since the first English level, beginning with short

passages about general topics to move gradually to specialized academic texts in the second term of the second English level. This exposure to specialized texts continues across the curriculum, when they finish their English courses and in other subjects such as: General Microbiology in 4th semester, as well as in Basic Nutrition and Food Chemistry in 6th semester. As a consequence, it can be seen that students face a real demand to develop the reading skill at higher level.

Despite all this exposure to reading specialized texts in English, students from this program evidence serious difficulties to understand the texts from their field. They struggle to achieve the reading goals in their content subjects, and have obtained very low results in the Saber Pro test during the last three years. This problematic situation motivated the current project to try to understand the factors leading to this academic issue. Thus, The following research question and objectives are proposed.

1.1 Research question

How is L2 reading taught and evaluated across the curriculum in the Food Engineering program at a public university?

1.2 General Objective

The main goal of this study is to analyze how L2 reading is taught and evaluated across the curriculum in the Food Engineering program at a public university in Colombia.

1.3 Specific Objectives

- Describe teachers' pedagogical practices for teaching L2 reading in two subjects: English 2nd and Microbiology 4th semesters.
- Determine teachers' L2 reading evaluation practices.
- Analyze the types of texts and their characteristics.

- Identify students' perceptions about teachers' methodology to teach and evaluate L2 reading in these subjects.

Chapter 2. Theoretical framework

The transition process that high school students often experience when they enter to the university context, may be sometimes stressful and complicated. This issue could be linked to the differences regarding the academic intensity and challenges that they will be dealing with at a college level. One of these challenges is related to the reading skills that students need to develop in order to make progress and learn in the different content subjects of their career. Learners at this level will be exposed to multiple academic reading materials related to their field of study. Therefore, they will be constantly asked to read and analyze academic articles, texts and books that will test their reading skills and comprehension.

Hermida (2009) highlights that “most first-year students lack academic reading skills, especially because University-level reading greatly differs from High School reading. Thus, most students employ non-university strategies to read academic texts” (p.20). Likewise, Fang and Schleppegrell (2008) state that “many adolescents are unable to read the often dense and complex texts of secondary school subjects and are not prepared for the challenges they will face in college and workplace reading” (p.1). In other words, most students come to the university without the adequate skills to read successfully and learn from texts.

Therefore, reading is one of the most relevant skills that students need to develop in order to be prepared and succeed at university and in their future professional lives. For the main purpose of this study, it is important to analyze and understand the reading concept as well as other fundamental reading constructs linked with the reading teaching and learning process . In order to reach this objective, it is relevant to review some of the different authors that have studied the reading skill and its key role in the learning process, especially at a university level.

2.1. Concept of reading

Before starting talking about reading, it is also important to refer to the reading purpose that a person may have, which is an aspect that will influence the way how we read as well as the selection of the documents intended to be studied. Hence, according to Grabe and Stoller (2002), depending on the objective, a person may decide to “read a novel, a short story, a newspaper article, or a report of some type to understand the information in the text, to be entertained and/or to use the information for a particular purpose”. (p.6) Then, it can be expressed that the objective or the reading purpose will vary from one reader to another and in this way the reading process will be different since this will be guided by different motivations. After recognizing the importance of the reading purpose, reading can be defined as an “evaluating process in that the reader must decide if the information being read is coherent and matches the purpose for reading” (Grabe and Stoller, 2002, p.12).

Kintsch and Kintsch (2005), also define reading as a competence that requires the ability of decoding and comprehension. Whereas decoding is an isolated skill that can be taught and evaluated directly, comprehension is a complex skill that depends on various factors, contexts, and reading purposes, on which both learning-based elements and text-based elements play an essential role. Kavcar, Oğuzkan and Sever (1997, p. 41) explain reading as “the process of seeing, perceiving and comprehending a writing with its words, sentences, punctuation marks and other elements”. In the same line, reading is the coding of a number of print-based elements and the thinking skills needed to understand a text (Harris and Hodge, 1995).

On the other hand, Triggs (1949) also, states that reading implies a wider perspective. Therefore, this also suggests that “reading requires the integration of thought processes stimulated by the perceptual act. Such psychological phenomena as attending, concentrating,

remembering, recognizing the writer's purpose, the reader's purpose, the type of material with its specialized reading problems” (p.67). Also, Hedgcock and Ferris (2009) see the reading process as a demanding cognitive activity in which, the reader can make use of a variety of strategies that will be implemented in order to deal with a wide range of information that may be possible contained in the text. Similarly, Hudson (2007) conceives the reader and the reading activity as a dynamic process “successful reading involves being actively involved in the process and understanding what types of possible interpretations can be made”. Hence, the reader needs to adopt a reflective attitude and develop the necessary reading skills that facilitate comprehension. Especially, the reading of complex academic materials which require the reader to have a thoughtful role and interpretative skills. The objective is that the reader creates meaning by concluding thoughts and ideas expressed by the author in a text.

2.2. Importance of L2 reading at college level

Reading is one of the most relevant skills that students need to learn and master in their academic lives since this will allow learners to have access to a wide variety of basic and important knowledge that becomes essential in their educational process. Through reading, students have the possibility to expand their literacy competences as well as to improve their own reading skills. Especially, students at a college context where these are constantly asked to read and analyze academic complex reading materials. On the other hand, reading in English plays a major role in our daily lives not only because English has become a global language, but also because this is the language of new technology, sciences and advanced research (Al Roomy and Alhawsawi, 2019).

Macaro (2003) notices the importance of reading in a foreign language by stating that once the learner has progressed beyond the beginner level, the vast majority of his or her input will be

in the written form. For university students where English is one of the most common and important means of instruction, the development of the reading skill, becomes a real need for learners. This is due to the fact that students need reading to pursue their studies by gaining more skills and strategies to cope with different academic reading texts in a critical and creative way (Fairbairn and Fairbairn, 2001).

Previously it has been described the importance of L2 reading for learners at tertiary education and the influence of this skill which allow students to have access to relevant knowledge that will contribute to succeed in their professional contexts. On the other hand, it is also important to highlight the need that university students have to continue developing their English level. According to the Ministry of National Education as it was established in the Bilingualism National Program in Colombia, high school students are expected to finish their school years with a B1 level of English proficiency. This means that college students when entering to university should already possess some basic English skills. Nevertheless, the reality seems to be different because students still present some issues for mastering the language. Krashen (2004) points out the vital role of extensive exposure to comprehensible input either through reading or listening in second language acquisition. The citation above supports the importance of the constant contact that students should have with the target language, the more learners are exposed to the language the better opportunities these will have to expand their knowledge and skill about the language.

2.3 Approaches and models for teaching reading

2.3.1 Directed activities related to texts (DARTS)

One of the methods that can be applied for the teaching of the reading skills is called Directed Activities Related to Texts (DARTs). Directed Activitiy Related to Text (DART) is a strategy

which is developed by Gardner and Lunzer in 1980. 14 years later, Brindley (1994) insists that DART is the central value placed on exchanges by pupils in small groups. It can be used as information of the DART procedure that can be applied by the teacher in teaching reading comprehension. DART's are basically classroom reading comprehension activities which provide students with the opportunity to take an active role in relation to the texts (British Council, 2003).

Besides, DARTs allow students to “focus on important parts of the text and involve them in reflecting on its content. They involve the pupils in discussion, in sharing ideas, and in examining their interpretations of a text” (Wellington, 2000. p.181). On the other hand, Department of Education and Skills (2004) cites that DARTs can be grouped into two main categories. These are reconstruction activities and analysis activities. Reconstruction activities are the type of exercises that require students to reconstruct a text or diagram by filling in missing words, phrases or sentences, or be sequencing text that have been put in a different order.

According to Pamelasari and Kushniati (2013), analysis activities are characterized by the implementation of texts that have not altered in a previews manner and that require the learner to look for specific information in the text that needs to be identified by labelling or underlining it. To help students mastering science content in English, Directed Activities Related to Texts (DARTs) activity is applied. DARTs are alternative activities that require students to interact with text. The purpose is to improve students' reading comprehension activities in comprehending science in English text.

The following table presents the classification of DART's (see Table 1).

Table 1

Types of DARTs

Reconstruction Activities (use modified text)	Analysis Activities (use straight text)
Text completion Predicting deleted words (cloze), sentences, or phrases.	Underlining Searching for specific target words or phrase that relate to one aspect e.g. key words.
Diagram completion Predicting deleted labels on diagrams using text and other diagrams as sources.	Labeling Labeling segments of text which deal with different aspects, e.g. labeling scientific account.
Table completion Completing deleted parts of a table using table categories and text as sources of reference.	Segmenting Segmenting of paragraph or text into information units.
Completions activities with disordered text Predicting a logical order for a sequence and classifying segments according to categories given by the teacher.	Diagrammatic representation Constructing diagram from text e.g. using diagrams, concept maps, mind maps, and labeled model.
Prediction Predicting next part of text with segments presented in sequence.	Tabular presentation Constructing and representing information in tabular form, extracting from a written text.

Note. From Davies and Green, 1984. Reading for Learning in the Sciences.

2.3.2 Models of reading

Many models of reading have been suggested by thinkers from time to time. Chronologically speaking, systematic analysis of reading comprehension started with Goodman (1967) who offered one of the most cited models of reading skill entitled as top-down or the conceptually driven processing approach. In his conceptualization, reading is a psycholinguistic guessing game since the readers' preconceptions and background knowledge largely impact the lower-level processes such as orthographic and phonological processing, as well as the word recognition skill. Urquhart and Weir (1998) classified all of these into two types: Process and Componential Models. Gough (1972) proposes that the reader starts with the letters which are decoded, phonemically placed, and finally uttered as a word. Thereafter, the reader moves on to the other parts of the sentence and so on. Goodman (1967) and Smith (1971) propose the reverse of this: The reader approaches the text with a hypothesis and the text helps them test this hypothesis. Rumelhart (1977) and Stanovich (1980) proposed the Interactive Approach. In this

approach, the text is interpreted in the light of the reader's syntactical, lexical, semantic and orthographic knowledge. Hoover and Tumber (1993) proposed the Two-Component Approach which is based upon word recognition and linguistic comprehension of the text. Coady (1979) and Bernhardt (1991) claimed that not two but three factors were at play in case of reading: Conceptual abilities, process strategies and background knowledge. Just and Carpenter (1987) integrated both the Process and Componential Models. In 1978, Van Dijk and Kintsch presented the system of mental processes that lie at the base of reading comprehension, working memory, and micro and macro levels of breaking down the text into a semantic structure. Grabe (2009) maintains that in top-down models, the comprehension process is neither mechanical nor linear, but actively controlled by the reader. Thus, the main mechanisms for the processing of the text are in the mind of readers.

2.3.3 Content based instruction (CBI)

The creation of the innovative language teaching methodology, content-based instruction (CBI), defined by Brinton, Snow, and Wesche (1989), as “the concurrent study of language and subject matter, with the form and sequence of language presentation dictated by content material” (p. vii), has allowed the integration of content and language. Content-Based Instruction is an approach in which the teaching is organized around the content. Likewise, the principles of Content-Based Instruction are heavily rooted on the principles of communicative language teaching since they involve an active participation of students in the exchange of content (Bula, 2014). CBI is an approach in which the teaching is organized around the content (Brinton, 2003). Richards and Rodgers (2001) say that Content-Based Instruction refers to an approach to second language teaching in which teaching is organized around the content or information that students will acquire, rather than around a linguistic or other type of syllabus. Content-based instruction is

the teaching of language through exposure to content that is interesting and relevant to learners (Brinton, 2003). Stryker and Leaver (1997) point out that CBI is part of what is considered a new paradigm in the learning-teaching process. It is precisely this idea of having students develop communicative competence that allows them to participate in the target culture. It is a fact that CBI constitutes one of the most relevant and significant approaches of language teaching, basically because it offers important opportunities to match the learners' needs with meaningful content in order to promote language acquisition (Bula, 2014).

Ample studies on content-based instruction (CBI) provide strong evidence as to the effectiveness of this methodology in developing language and content knowledge in students; however, there is much less information as to why this methodology is so effective (Corrales y Maloof, 2011). Content-based instruction (CBI) is considered as one of the instructional methodologies in developing English language performance. Teaching in this approach is organized around the content and the principles of content-based instruction are heavily rooted on the principles of communicative language teaching since they involve an active participation of students in the exchange of content (Bula, 2014). With content-based instruction, students learn language and content at the same time, each supporting the development of the other (Lyster, 2007) as Snow and Kamhi (2002) stated that language is learned best as a vehicle of instruction, not as the object of instruction. Some models emphasize the content but in some models more emphasis is put on language (Dueñas, 2004) and some models have the same instructor whereas some have different instructors. However, in general, there are three content-based instruction models, namely, theme-based language instruction, sheltered content instruction, and adjunct language instruction. First, theme-based language instruction is the model that the course was taught by a language instructor and was structured around topics or

themes, with the topics forming the backbone of the course curriculum (Brinton, Snow, and Wesche, 2003)

2.4 Genre based approach

The idea of language as meaning in social context has been explored for over almost seven decades in the systemic functional tradition. For Martin and Rose (2012), genre is defined as recurrent configurations of meanings, and a culture can be described as an evolving system of genres. As they are recurrent configurations, each genre is recognizable to members of a culture by way of repeated experience, and describable to the analyst. According to Rose (2008), in genre pedagogy, students acquire two fields simultaneously, knowledge about the curriculum topic and knowledge about the language that realize it as written texts. In terms of mode, this was accomplished by dialogue about written texts that could be seen and shared by all, pointing out features of the model and constructing the joint text on the board.

Review of literature shows that implementing a genre-based instruction in teaching reading skill influences the reading abilities of the students positively (Shishehsaz, 2006). The term "genre" is used in different contexts to refer to the convention of certain texts in certain cultures (Hammond and Derewianka, 2001). Genre analysis refers to a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse community, and thereby constitute the rationale for the genre (Swales, 1990). Genre means the regularities of staged, goal oriented social processes (Martin, 1993). For Miller (1984) is the typification of social and rhetorical action were recognized. In fact, the main purposes of genre are given to the shared purpose rather than on similarities of form or some other criteria. Bhatia (1993) argued that genre studies incorporate a variety of frameworks used to analyze a range of textual genres constructed,

interpreted and used by members of various disciplinary communities in academic, professional, workplace and other institutionalized contexts (p.14).

Genre-based approach, also called genre-based instruction (GBI), is a current trend to teaching language skills including reading (Wennerstrom, 2003). According to Osman (2004) teaching specific genres commonly required by the students in the academic situations, the overt teaching of the language patterns and social conventions of these genres, which makes the students more aware about these genres' structures and subsequently enhance their language skill are some distinct characteristics of GBI.

From Vygotsky's (1962) perspective, language has several roles one of which is transferring abstract concepts and logical reasoning. Another role of language is the establishment of communication through social interaction which can be considered as the main contributing factor of child language development. Vygotsky's theories on language acquisition which emphasize the social origin of development gained considerable importance and in spite of the fact that he proposed his theories gradually, he highlighted the works of linguists and psychologists who consider meaning as the core of language (John-Steiner, 2007). Vygotsky (1962), believed that thought is not independent from language, nor does it precede language, and although they have independent and different origins, there is continuous interaction between them. Vygotsky's theory is based upon the interaction between language and thought. He believed that the development of thought and language is not parallel. In some cases, curves of language and thought intersect with each other, and in other situations these are apart from them, and it can be the case that they might even coalesce. (Dastpak, Behjat and Taghinezhad, 2017). Language and thought have different genetic origins and are independent, but in a period in childhood they integrate with each other (Vygotsky, 1962). Lev Vygotsky studied the

relationships between teaching and child's development, and he concluded that teaching leads development. According to Vygotsky, teachers should promote child's development by stimulating capabilities. In order to be effective, teaching needs to anticipate development. In this connection, Vygotsky proposed his theoretical concept known as the Zone of Proximal Development (ZPD), in studying what the child is capable of doing independently, we study yesterday's development. Studying what the child is capable of doing cooperatively, we ascertain tomorrow's development (Guseva and Solomonovich, 2017).

In Sociocultural Theory, mediations in second language learning include mediation by others, mediation by self, and, mediation by artifacts, which incorporates brilliant insights for EFL contexts (Lantolf, 2000). According to Vygotsky (1987), tools and language are not fixed, and they get new forms in human history and its cultural development; therefore, language is no longer distinguished from its use. He further argues that external social speech is internalized through mediation; hence, society is connected to mind in this way.

As Walqui (2006) based on Vygotsky's sociocultural theory (SCT) states "learning is only useful if it is ahead of development, that is, if it challenges learners to think and act in advance of their actual level of development"(p.161).

Furthermore, this author confirms that "Scaffolding is closely related to the ZPD. In fact, it is only within the ZPD that scaffolding can occur."(p.163). As seen in Figure 1, there is also a category suggested by Martin in which some genres are defined for the students belonging to a high school level. According to Martin (2012), this taxonomy works as a facilitator for teacher and students to have a clear perspective about the genres and their social functions.



Figure 1. Map of genre in school.

Note: From Martin, J. 2012, p. 128.

As Wood, Bruner, and Ross, cited in Harrison, 2007, p.24, state: “scaffolding is quite a complex process: it is not simply about giving general support to the child. Scaffolding involves: activating and maintaining the learner’s interest, then (crucially) reducing the number of choices available to the child, keeping the child on task, highlighting critical aspects of the task, but also controlling the child’s frustration, demonstrating the whole process to him/her”.

Narrative has had a rich intellectual tradition. Many disciplines believe that human experience is a narrative phenomenon that is best understood through story. This includes researchers in the disciplines of anthropology, linguistics, literary theory, philosophy, psychology, theology, women’s studies, organizational theory, psychotherapy, geography,

history, law and medicine (Craig, 2007). As shown in Table 2, it shows the common story phases.

Table 2

Common story phases.

phase types	engagement functions
setting	presenting context (identities, activities, locations)
description	evoking context (sensual imagery)
events	succeeding events
effect	material outcome
reaction	behavioural/attitudinal outcome
problem	counterexpectant creating tension
solution	counterexpectant releasing tension
comment	intruding narrator's comments
reflection	intruding participants' thoughts

Note: From Martin and Rose. 2007

When referring to the science genre it is going to be talked about some other genres that are part of it. For instance, the reports and explanations and among others are concepts that in most cases are going to be included or considered as part of this genre. Moyano (2001) states that "Introduction, materials, methods, results, discussions and conclusions are the chapters that can be identified in the scientific genre" (p.5). Thus, it becomes essential to see the difference between these two. The following graphic (See Figure 3) will illustrate the main features and differences between the time structured and non-time structured genres

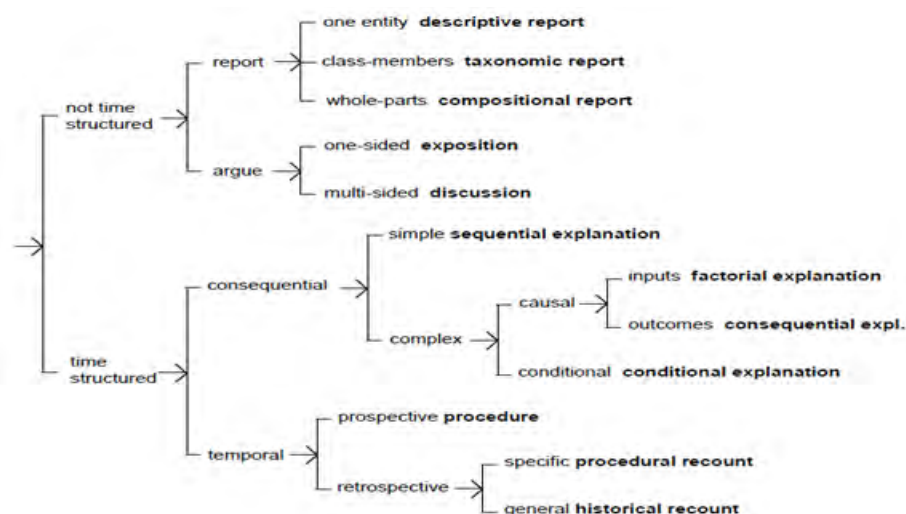


Figure 3. Relations between genres in science.

Note: From Martin and Rose. 2007

The first stage of the education project described the genres typically written by primary school students, through large scale text analyses in collaboration between educators and linguists. As it can be seen in the table above, there are some key type of genre as well as their purposes that are considered to be essential for young learners, especially when they study their first school years or primary years . These become really important tools for readers when dealing with reading materials in a successful manner (See Table 3).

Table 3

Genres described for first school of primary years

	genre	function	stages
Stories	recount	<i>recounting events</i>	Orientation Record of events
	narrative	<i>resolving a complication</i>	Orientation Complication Resolution
Factual texts	description	<i>describing specific things</i>	Orientation Description
	report	<i>classifying & describing general things</i>	Classification Description
	explanation	<i>explaining sequences of events</i>	Phenomenon Explanation
	procedure	<i>how to do an activity</i>	Purpose Equipment Steps
Arguments	exposition	<i>arguing for a point of view</i>	Thesis Arguments Reiteration
	discussion	<i>discussing two or more points of view</i>	Issue Sides Resolution

Note: From Rose. 2015

Relations between genres and the fields in which they are acquired and deployed were thus thoroughly explored, together with the social hierarchies of knowledge and power they enact (Rose, 1998). Genres described for school curricula are listed in Table 4.

Table 4.

Genres described for secondary school curriculum

	genre	purpose	stages
Stories	recount	recounting events	Orientation Record of events
	narrative	resolving a complication	Orientation Complication Resolution
	exemplum	judging character or behaviour	Orientation Incident Interpretation
	anecdote	sharing an emotional reaction	Orientation Remarkable event Reaction
	observation	commenting on an event	Orientation Event description Comment
	news story	reporting current events	Lead Angles
Chronicles	autobiographical recount	recounting significant life events	Orientation Record of stages
	biographical recount	recounting stages of a life	Orientation Record of stages
	historical recount	recounting historical stages	Background Record of stages
	historical account	explaining historical stages	Background Account of stages
Explanations	sequential explanation	explaining a sequence	Phenomenon Explanation
	conditional explanation	alternative causes & effects	Phenomenon Explanation
	factorial explanation	multiple causes for one effect	Phenomenon:outcome Explanation:factors
	consequential explanation	multiple effects from one cause	Phenomenon:cause Explanation:consequ.
Procedures	procedure	directing activities	Purpose Equipment Steps
	protocol	prescribing and proscribing actions	Purpose Rules
	procedural recount	recounting procedures	Purpose Method Results
Reports	descriptive report	classifying & describing an entity	Classification Description
	classifying report	describing types of entities	Classification Description:types
	compositional report	describing parts of wholes	Classification Description:parts
Arguments	exposition	arguing for a position	Thesis Arguments Reiteration
	discussion	discussing two or more positions	Issue Sides Resolution
Text Responses	review	evaluating a literary, visual or musical text	Context Description of text Judgement
	interpretation	interpreting the themes of a text	Evaluation Synopsis of text Reaffirmation
	critical response	challenging the message of a text	Evaluation Deconstruction Challenge

Note: From Rose. 2015

2.4.1 Teaching and learning cycle (TLC)

The teaching/learning cycle, features three main phases of activity, named Deconstruction, Joint Construction and Individual Construction (See Figure 2).

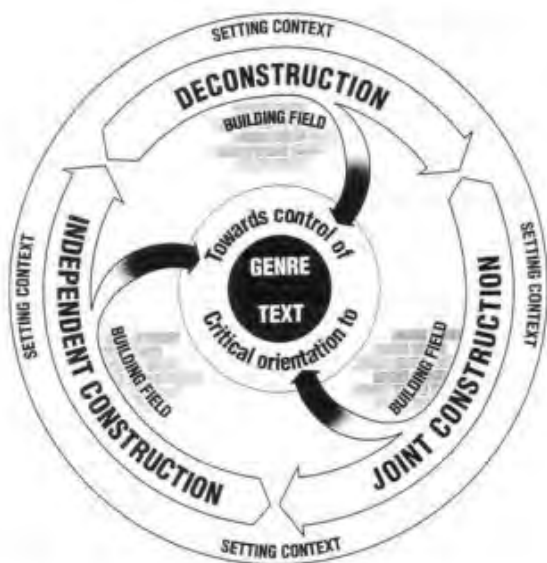


Figure 2

The teaching/learning cycle

Note: From Martin, J. 2012

The Deconstruction phase foregrounds modelling, establishing one genre or another as the goal for the cycle as a whole. Mentor or model texts are selected by the teacher to support the contextualized understanding of how choices in language and image work to establish meaning. The Joint Construction phase involves scribing another example of the genre based on suggestions from students. Here, teachers and students jointly constructing a text. Finally, the Individual Construction stage hands over responsibility to students for writing a further text in the genre on their 2 own. In this stage, students work independently with the text and learner performances are used for achievement assessment (Feez, 1999).

2.4.2 Teaching and learning cycle for teaching reading

Attached in the Figure, it will find the teaching and learning cycle proposed by Universidad del Norte.

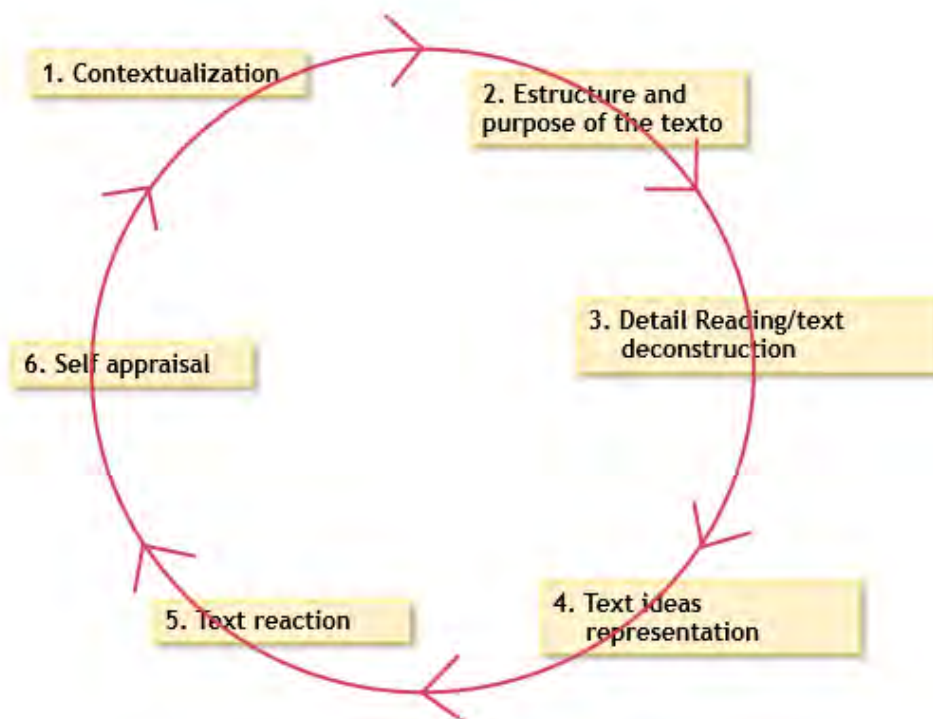


Figure 4. Teaching and learning cycle-Universidad del Norte

Note: From Moss, Benitez & Mizuno (2016)

The 6 steps are: contextualization, structure and purpose of the text, detailed reading / deconstruction of the text, representation of text ideas, text reaction, and self-appraisal (Moss, Benitez and Misuno, 2016). Contextualization phase focus on how teachers' help students make academic connections. Teachers have to be encouraged to teach students about text structure. Text structure is the arrangement of ideas and the relationships among the ideas; readers and writers who are familiar with text structure recognize how the information is unfolding. Text deconstruction explores the social contexts in which texts are written, the social purpose of texts (e.g. to inform, to persuade) and involves explicit teaching about the structural organization and linguistic features of text types. Representation is the depiction of a thing, person or idea in written, visual, performed or spoken language. In representing we make choices from the language offered by these modes. Representation may aim to reflect the natural world as

realistically as possible or may aim to convey the essence of people, objects, experiences and ideas in a more abstract way. Teacher has to guide students to form opinions about what is going on in the text, and think about the responses and reactions to what they are reading. Making notes can help them focus their thinking as they read. Finally, the self-appraisal is the final stage in this cycle and help students understand their reading strengths and areas for improvement.

2.5 Interaction

In the field of second and foreign language learning, interaction has long been considered to play an important role. For Van Lier (1996), pedagogical interaction is motivated by our understanding of learning rather than by a list of desired competencies, test scores, or other products. Studies taking a more traditional, formalist perspective on language and learning have focused on the role that interaction plays in helping learners to assimilate and internalize knowledge of linguistic forms in the target language. More recently, a group of scholars concerned with interaction and additional language learning, or the learning of languages other than the mother tongue, has begun to move away from this more traditional perspective and into areas outside of what has generally been considered the main focus of the applied linguistics field (Hall, 2003). According to Bakhtin, language learners are interested in listening to others speak as well as responding and anticipating the responses of others in their learning community and this fundamental dialogism is the way to understand the co-construction of utterances (Hosenfeld, 2006). “Reading aloud” (which is based on the ideas of Problem-Solving and Support Metacognitive Reading Strategies) is viewed as an effective strategy because it builds a direct interaction between the teacher and the students. Reading aloud also is believed that could motivate and interest students to read and share their thoughts with everyone in the classroom (Migdadi and Baniabdelrahman, 2016). Omar and Safi (2015) view the reading aloud strategy as

the most effective strategy because it also involves the students in “asking and answering questions, giving comments and making predictions through guidance of the teacher.

For Hall (2003), interaction between teachers and students in classrooms is one of the primary means by which learning is accomplished. In language classes, interaction takes on an especially significant role in that it is both the medium through which learning is realized and an object of pedagogical attention. Lin (2000), found that, the IRE pattern of interaction most often occurred in classrooms comprised primarily of students from socio-economically disadvantaged backgrounds. In addition to limiting learning opportunities for these learners of English, such use of the IRE pattern of interaction. Keeping in view the linguistic aspects of classroom interactions, the typical structure of classroom discourse is described by Sinclair and Coulthard (1975) and Mehan (1979) as IRF pattern which follows a sequence of well-ordered moves: I (teacher initiation) \diamond R (student response) \diamond E/F (evaluation or feedback by teacher). Sinclair and Brazil (1982) and Cullen (2002) later renamed the feedback move as “follow up” to expand its scope to include its multiple functions and roles. For Donato (1994), in language teaching the notion of agency has become prominent in the context of project based approaches and investigations of social interaction and collaborative learning in classrooms.

Kumar (2019), declares that the IRF pattern inhibits longer duration of discourse engagement on the part of the learners, significantly limiting the learners’ opportunity for meaningful L2 use thereby. The instructor’s question types tuned with the IRF pattern may further fail to encourage learners’ elaborate L2 use. The key to responsible (and effective) pedagogical interaction is understanding the learner (which includes understanding learning), and a theory of learning is therefore needed to underpin the development of strategies for pedagogical interaction (Van Lier, 1996). Also, the teacher needs to consider the participation orientation that can be obtained from

IRF interaction that would encourage learners to have an active role in the participation of class discussion. Rather, the emphasis should not be exclusively in the assessment orientation that on the contrary limits the interaction and focuses on an evaluation component (Van Lier, 1996).

2.6 Study skills, reading skills and strategies

Theoretical studies and frameworks comprise various concepts of study skills, such as learning how to learn, knowing how to know, knowing how to remember, mental skills training, mnemonic strategies, cognitive elaboration strategies (Rizk, 2004). Study skills are the learned behavioral patterns employed by the learner in the academic achievement of various courses. They are also the constant accumulation of information. Building the individual cognitively as well as mentally requires the use of appropriate strategies of self-management, time management, and goals setting. Study skills, which involve the above-mentioned aspects, help the learner succeed not only in study, but throughout life, as well (Al-Mokren, 2004). Al-Amr and Al-Shafei (2007) defined study skills as the methods and approaches followed by the student to acquire distinct information and skills, which reveal the constancy of the student's success in study. They also indicate an individual activity, behavioral patterns and processes carried out by the learner, with or without the faculty supervision, to acquire knowledge or skill. They involve what the person acquires through practice and life experience, as well. Abbott (2006) defines reading strategies as the mental operations or comprehension processes that readers select and apply in order to make sense of what they read. Research on reading has shown that whilst reading comprehension is not an automatic process, it is influenced by the adoption of a certain reading strategy (Yukselir, 2014). It is suggested in the research that there are three types of reading strategies: 'pre-reading strategies, during-reading strategies and post-reading strategies' (Cekiso and Madikiza, 2014). Pre-reading strategies provide learners with a general idea about

the topic and enable them to develop an expectation of what will be read (Al-Issa, 2006). These strategies are adopted during the initial stage before learners begin reading the text, and they appear to be helpful in gaining an overview of the text. During-reading strategies allow learners to manage problems, and they include strategies such as guessing the meaning from context (AD-Heisat, 2009). Post-reading strategies, as the final type of strategy, refer to strategies that enable learners to make conclusions and generalisations after reading the text (Cekiso, 2007). Mokhtari and Reichard (2002) provided three classifications for reading strategies: Global Reading Strategies, Problem-Solving Strategies, and Support Reading Strategies. Global Reading Strategies (GLOB) are defined as reading strategies that ‘set the stage for the reading act’; Problem-Solving Strategies (PROB) are defined as ‘focused problem solving or repair strategies’ that are primarily used ‘with the inception of different problems in understanding textual information’. Support Reading Strategies (SUP) are defined as ‘support mechanisms’ that ‘function as sustaining responsiveness to reading’ (Hatami and Asl, 2017).

2.7 Reading assessment

Assessment makes part of the teaching and learning process since through this, teachers and students are able to recognize the weak aspects that need to be reinforced as well as the achievements that these have reached in the educational context. Brown (2004) defines assessment as “any act of interpreting information about student performance, collected through any of a multitude of a means or practices” (p. 304). In other words, the teacher analyzes students’ through the implementation of the assessment activity. Therefore, when applying assessment in class the teacher is identifying learners’ weakness and strengths. Besides, assessment has a vital impact in the education process to inform and improve ongoing learning, and plays a significant role (Cowie and Bell, 1999). Also, assessment in the reading activity has

to be recognized taking into account the importance of this component for developing this basic skill. Reading assessment provides relevant information about t students' motivation towards reading and also this serves as a way to identify the reading skill that learners use to understand in a critical manner the information portrayed in a text (Afflerbach, 2010). Likewise, this author highlights that “reading assessment informs our understanding of individual students and our related efforts to best teach them, which shapes students' self-concepts, motivations, and attitudes related to reading.”(p.1). Hence, assessment not only benefits students by defining their reading competences among other aspects but also provide teachers with useful data that can be used to modify certain aspects of the reading teaching practices.

Hutama (2019), says that, “assessment is vitally important in higher education because it stimulates learners' attitudes and behaviours towards learning. It provides them with the necessary feedback on their strengths and weaknesses and it offers students insights on how they might improve in the future.”(p.77). In like manner, assessment has a positive impact in the education process since this informs about ongoing learning, and plays a significant role (Cowie and Bell, 1999). Assessments also provide teachers with useful feedback about student learning acquisition (Taras, 2005).

Harvey (1998), idealizes the concept of assessment satirically when he says “When the cook tastes the soup it is formative evaluation; when the dinner guest tastes the soup, it is summative evaluation.” In other words, the formative evaluation has to do with the process, whereas the summative one is related to the final results or outcomes of the process. A number of definitions have been coined to refer to formative evaluation. Black (1999), defines formative assessment as “the short-term collection and use of evidence to guide learning”. In the same line, Higgins et al. (2010) perceives formative assessment as “work that a student carries out during a module, for

which they get feedback to improve their learning, whether marked or not”. Baume (1998) also underscores that formative assessment is the one that occurs during the learning period and it is meant to provide feedback to inform further learner development. Besides, the importance of formative assessment focuses on the fact that this type of evaluation takes into account the Zone of Proximal Development (ZPD) stated by Vygotsky in his sociocultural theory, that provides the teacher with the necessary information to make adequate modifications in his or her teaching practices allowing the learner to be able to succeed in a demanding enough level. (Afflerbach, 2010). Formative assessment offers feedback to learners and it is therefore critical for ensuring sound learning outcomes. On the other hand, summative assessment considers real learning as it is premised on grading or performance ranking (Boud, 1995). Thus in light of the above, the Open University from UK (2008) recognizes formative assessment as “assessment for learning, whereas summative assessment is assessment of learning”. Wisdom (2006) prefers to describe formative assessment as a journey, rather than it being an outcome. Gibbs (1998) posits that a constant tension exist between the two assessment methodologies and argues each of the two may work with differing level of effectiveness from one institution to the other. Yorke (2005) claims that formative assessment measures student progress but it can also assess your own progress as an instructor, and summative assessment takes place after the learning has been completed and provides information and feedback that sums up the teaching and learning process.

Research however argues that the two forms of assessment are interlinked as Ramsden (1992) views the two as existing in a continuum rather than being antagonistic. hence, at the of moment of applying assessment in the reading classes, both formative and summative can be considered

in order to provide learners with an accurate and fair evaluation process that help students to have a wider perspective of their learning process.

2.8 State of the art

In the exploratory Study Altmisdort (2016), investigated whether transfer from L2 to L1 in reading occurs, and if so, which reading sub-skills are transferred into L1 reading. The aim was to identify the role of second language reading skills in L1 reading skills by means of transfer. In addition, the positive effects of the second language transfer to the first language in the context of reading skills and sub-skills were analyzed. Fifty-three native Turkish-speaking adults English language learners were tested in this study. These participants were university students who had the same L1 Turkish proficiency backgrounds. While 26 students took L2 reading courses for four months, the other 27 students did not take any L2 reading courses. After four months of L2 reading courses, these two groups were given a standard L1 (Turkish) reading test.

The Turkish reading test included vocabulary, comprehension, grammar and reading sub-skills questions. The results revealed that L1 reading skills were affected positively by the L2 reading skill transfer. The study reveals which L1 reading sub-skills are more developed by L2 reading skills transfer. For further studies, the correlations in L1 and L2 courses may open a way in language curriculum design. Both courses can be designed as an adjunct course formulated on the skill-based syllabus model, and reading skills can be transferred cross-linguistically. Thus, L2 reading proficiency will be transferred to L1 proficiency.

Armagan and Genc (2017), at their study *Impact of Timed Reading on Comprehension and Speed: A Study on Turkish EFL learners*, says that reading process has always been one of the most significant and debatable topics in the area of learning and teaching languages. Reading process in mother tongue (L1) and in a foreign language (L2), the association of these processes,

variables affecting reading and the qualities of good and poor readers in L1 and L2 have been investigated greatly. Developments in the area of reading in L1 have frequently raised questions about reading in L2 and a variety of theories have been proposed to account for the relationship between L1 and L2 reading. One of the most fundamental questions raised is related to “reading fluency”. Even though the importance of reading fluency in both L1 and L2 has been emphasized, studies on fluency in L2 are still scarce if we think about its more complicated and multifaceted nature when compared to reading fluency in L1. The aim of this study was to investigate the impact of timed reading practices on the comprehension level and reading speed of learners of English as a foreign language (EFL) in Turkish context. A total of 74 students were the participants, who were randomly divided into two groups: experimental and control group. Experimental group received timed reading activities while the control group did not. Pre-test was applied on the 1st week and post-test was applied on the 7th week. Results illustrated that timed reading intervention positively affected EFL students’ comprehension level and reading speed. Implications for teaching reading in a foreign language were discussed in relation to a number of important details in the findings.

For Zhao (2016), in his case study of academic reading course, for the Academic English Teaching for Postgraduates Based on Self-regulated Learning Environment, selected postgraduate students in the first grade as the participants, based on their needs analysis, classroom presentations and performance of assignments completion, through the methodology of case study, the results show that students at the university level even the graduate levels still struggle with academic English. Thus, this study focuses on foreign language teachers how to guide postgraduate students in academic reading course, so as to implement students’ self-regulated learning strategies and enhance their motivations, as well as how the students to adjust

to experience and respond to the teaching process through the adjustment. Accordingly, they theoretically constructed self-regulated teaching and learning environment, expectations for enlightenment to the teaching practices of academic English instructions, especially in reading academic journal articles in English. And finally, for them, the future direction should be towards to assessing and applying the learning environment model.

Fathy (2016) confirms the Effectiveness of Using Blogs as an Independent Learning Tool to Develop Reading Skills for University Students. At his study, he says that the emergence of web 2.0 technologies has created new opportunities and challenges in the field of second and foreign language learning. Among all web 2.0 tools, blogs can be considered the most well-known one. That study was an attempt to determine the effectiveness of using blogs as an independent learning tool to develop students' reading skills. Blogs can be divided into three main types; teacher's blog, class blog, and learner's blog. Participants in this study were 22 first level students in the English Department at Qassim Private Colleges in Saudi Arabia. Reading, as one of the receptive skills, should be dealt in our curriculum in a different way. In addition, adopting technology in teaching English language creates a new atmosphere in our classrooms. Blogs, as one of the most important tools in web 2.0, could be an effective tool in developing students' autonomy. Blogs could be used as a starting point in their understanding of the wider concept of autonomy. The learner feels he has his own freedom to learn independently. Moreover, students feel more motivated to learn a foreign language if they are given this freedom of choice. In the present study, the students got involved into online reading program through blogs. The students discussed the reading passage together. They could negotiate the meaning of the passage. Then, they could answer the reading passage questions. Finally, the students could summarize the main

ideas of the passage. In addition, blogs provide learning with an environment for autonomous learning and knowledge and information sharing.

In China, He (2018) supports that reading comprehension could be considered as a kind of communication in which the writer manifests his/her communication intention and the reader infers from the discourse codes; there into, the optimal relevance between the textual information and the reader's cognition is essential to the optimal contextual effects. His paper sets out to discuss the explanatory power of relevance theory to reading comprehension, with focus on differences among readers with different reading abilities in grasping the optimal relevance with the discourse and the cognitive context. Through the reading teaching experiment undertaken for a semester, the result shows that the application of relevance theory to reading by pinpointing reading purpose, setting reading tasks and constructing cognitive contexts benefits greatly to students' inference capability, hence their reading ability, which is also instructive for the teaching mode of reading courses. The participants in this experiment were the English majors in Class One and Class Two in Nanchang Normal College enrolled in 2015. The conclusion in this study is that in reading courses, teachers need to introduce this theory to students for assisting them to master the nature of reading and try to equip them with enough background information for better contextual effects. What's more, adopting both top-down processing and bottom-up processing in reading by setting relevant questions enables students to read more effectively.

Chapter 3. Methodology

This chapter describes the methodology that was applied in this research project whose main objective is to describe how L2 reading is taught and evaluated across the curriculum at a public university. First, the research paradigm of the project is explained, followed by a description of the participants, the instruments, the process for collecting and analysis of data.

3.1 Qualitative research

A qualitative research methodology was selected for the development of this study. Crossman (2019) defines qualitative research as a type of social science research that collects and works with non-numerical data and that seeks to interpret meaning from these data that help understanding social life through the study of targeted populations. In addition, qualitative research perceives reality in a variety of possibilities. This supports the theory of reality as a socially constructed idea and that there may exist different interpretations of a particular situation (Merriam, 2009). In this sense, the objective in a qualitative paradigm is based on the possible interpretations that can result from the interaction between the research and the context of the study. Besides, it is also stated by Lichtman (2006) that “the main purpose of qualitative research whatever kind - is to provide an in depth description and understanding of the human experience.”(p.8)

3.2 Case study

For the purpose of this project, and considering the characteristics of the sample and the settings where this research project took place, a case study design was selected for its development. Opie (2004) suggests that “a case study can be viewed as an in-depth study of interactions of a single instance in an enclosed system” (p.74). However, it is relevant to understand the main purpose of case study in a research project. Therefore, it can be concluded

that: Its aim then is to provide a picture of a certain feature of social behavior or activity in a particular setting and the factors influencing this situation, in this way the interactions of events, human relationships, and other factors are studied in a unique location (Opie 2004). In addition to this, Merriam (2009) explains that qualitative case study is characterized by three specific features. These are, particularistic, descriptive, and heuristic. Hence, a case study is particular because the focus is based on a particular phenomenon or context, is descriptive since the project tries to have a thick or a complete analysis of the issue being investigated. On the other hand, is heuristic through the development of a case study the researcher has the possibility to expand his or her knowledge about the object of study. In this sense, this research method is coherent with this project taking into account the particular context of this study, which focuses on the food engineering program at a specific university. Besides, considering the descriptive aspect of case study, this project provided a complete description of the methodologies being implemented for the evaluation and teaching practices of the L2 reading skill.

3.3 Context and participants

This project was carried out at the Food Engineering program in a public university located in the north coast of Colombia. Two subjects were chosen for the study: English 2 level and Microbiology from 4th semester. The selection was made considering that L2 reading has an important role in this program. Apart from the English courses required by the university, the English language is taught in other areas. Thus, it becomes an important aspect to analyze the way how the language and the reading skill is taught and evaluated in both at the English class and other areas such as microbiology. Besides, university students need to develop reading skills that allow them to have access to updated information of their field of study and also help learners at the moment of facing the national Saber Pro test.

Most of the students from the Food Engineering program come from different rural areas of the department as well as the capital city. These belong to low and middle socio economic strata. Their ages range from 16 to 24 years old. Their English proficiency levels vary, but most of them can be classified into A1 and A2 levels, according to the Common European Framework. Thus, reading the academic texts of their discipline in English, and learning from these texts is a challenge for these students, and most of them struggle to achieve the goals and succeed in the subjects.

3.4 Data collection methods

One of the most relevant and key aspects of a research project is deciding the most appropriate data collection techniques and instruments that will contribute to meet the objectives. According to Creswell (2011), it is fundamental to make a previous reflection on the purpose of the study and the research question in order to have a better perspective about the data techniques and instruments that will be applied.

In relation to data collection, Hancock and Algozzine (2011) explain that “qualitative approach may require individual interviews, focus groups, observations a review of existing documents or a combination of data collection procedures” (p.8). Therefore, for this qualitative study the data collection techniques chosen to collect the information in this research were: observations, interviews, document analysis.

3.5 Observations

Observations are considered one of the most common and useful qualitative data collection techniques. These are often associated with ethnography and qualitative case study considering the method how these observations are carried out. Marshall and Rossman (2016) define observation as "the systematic description of events, behaviors, and artifacts in the social setting

chosen for study" (p.79). "Observation is a research tool when it is systematic, when it addresses a specific research question, and when it is subject to the checks and balances in producing trustworthy results"(Merriam, p.138). On the other hand, the observation activity provides the researcher with some aspects that can be evidenced through this technique. Some behavioural features that take place in the context and that are interpreted by the observer based on direct experiences.

Thus, the objective of the observation activity in a research project is to identify information that can be seen in the real setting of the issue from where relevant and useful data may be obtained. For example, "when we speak we do not only communicate through words. A good deal is conveyed by tone of voice – whether we shout or whisper for example, and by the use of our bodies whether we smile, wave our hands" (Cook, 2003, p.50). These are some of the key elements that may only be identified with the implementation of observations. Therefore, observation becomes a vital data collection technique when identifying relevant information for the development of the qualitative research.

3.6 Interview

An interview can be considered as the process of eliciting information from another individual. Interviews may occur in groups or in a person to person interview which are basically the conversations among the participants. (Merriam, 2009).

Interviews can be designed differently depending on the needs being addressed and the information. They can be grouped into three types: structured, semi-structured, and, unstructured interviews (Easwaramoorthy and Zarinpoush, 2006). The following table (Table 5) presents these types of interviews with their main characteristics.

Table 5

Interview structure continuum

<i>Highly Structured/Standardized</i>	<i>Semistructured</i>	<i>Unstructured/Informal</i>
<ul style="list-style-type: none"> • wording of questions predetermined • order of questions predetermined • oral form of a survey 	<ul style="list-style-type: none"> • mix of more- and less-structured questions 	<ul style="list-style-type: none"> • open-ended questions • flexible, exploratory • more like a conversation

Note: From Merriam. 2009

There are different types of interviews. Litchman (2006) distinguishes among qualitative interviewing, focus group interviewing and online interviewing. Qualitative interviewing is one of the most common forms of data collection instruments taking into account that interviews are used at every instance in our everyday lives.

Another type of interview is the semi-structured one. Nunan (1992) explains that in a semi-structured interview “the interviewer has a general idea of where he or she wants the interview to go, and what should come out of it but does not enter the interview with a list of predetermined questions” (p.149). According to Opie (2004), this type of interviews:

Are a more flexible version of the structured interview which will allow for a depth of feeling to be ascertained by providing opportunities to probe and expand the interviewee’s responses. It also allows for deviation from a prearranged text and to change the wording of questions or the order in which they are asked (p.118).

Moreover, Merriam (2009) states that “the semi-structured interview that is guided by a set of questions and issues to be explored but neither the exact wording nor the order of questions is

predetermined” (p.114). In the same manner, the semi structured interviews are the most adequate ones to be considered when carrying out a case study taking into account the common characteristics of this type of interviews. In this case, questions are defined in advanced but in a more flexible style motivating the interviewee to express themselves in a spontaneous way. Consequently, there will be more opportunities for the participants to provide useful information. (Hancock and Algozzine 2011, p.45).

Taking into consideration the characteristics of semi-structured interviews provided above, this type of interview was selected for the purpose of this investigation. A questionnaire with predetermined questions based on the objectives of the study was prepared. Nevertheless, there were open questions to complement the information provided by the students that allowed them to freely express themselves

Focus group was the other type of interview developed in this project; In this case, the group of students participating in these interviews varied from a number of 3 to 5 interviewees. A short number of people is suggested when applying this type of interview. Focus group consists of a small group of people, usually between six and nine in number, who are brought together by a trained moderator (the researcher) to explore attitudes and perceptions, feelings and ideas about a topic.(Denscombe, 2007, p.115). It is also relevant to mention that the interviews were conducted using students’ mother tongue so that the participants could clearly understand the questions being asked. Learners were asked questions related to teachers’ practices as well as the teaching and evaluation of the reading skill. It was necessary to have focus group with different students in order to get students’ perceptions about the reading class in general terms. Besides, the purpose of using focus group was to gather information in a complete angle since when developing focus group the interviewees tend to complement their own ideas using others

participants' utterances. As Patton, cited in Merriam, 2009, p.94) states that in a focus group, the participants being involved during the interview have the possibility to expand their own comments and ideas by listening to other people's points of view. Moreover, the author also explains that there is no need for the interviewees to agree or disagree on their opinions. According to Anderson (1990, p.241), focus group is a group comprised of individuals with certain characteristics who focus discussions on a given issue or topic.

3.7 Document analysis

Document analysis was as the other data collection technique implemented in this research project. Some class documents such as, reading materials, and students' written assignments were analyzed in order to give response to the established objectives. Documents are interpreted by Merriam (2002) "as the umbrella term to refer to a wide range of written, visual, digital, and physical material relevant to the study at hand." (p.140). Although, for the purpose of this study, the type of documents that were considered were the written materials identified during the reading classes. The systematic procedure for reviewing or evaluating documents both printed and electronic material, is called document analysis (Bowen, 2009). Like other analytical methods in qualitative research, document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge (Corbin and Strauss, 2008). Besides, Denzin (1970) argues "Document analysis is often used in combination with other qualitative research methods as a means of triangulation—the combination of methodologies in the study of the same phenomenon" (p. 291).

To conclude with the methodology section, it is paramount to refer to the ethical aspect of a research project. Sieber (1993) supports that when research requires the direct participation of individuals, it becomes necessary to socialize the implications of the project and the relation with

the participants. Therefore, an organized plan must be communicated to the ones involved about the risk and benefits of the research. As a result, both researcher and participants can develop and maintain a respectful relation from which they obtain constructive mutual goals. Thus, for this qualitative research project participants were informed about the objectives and were also required to sign an informed consent documents (see appendix A) to confirm their volunteer participation in the process.

Chapter 4. Results and Discussion

In this chapter, the results obtained in this research will be reported and discussed. Besides, with the purpose of organizing all the information gathered through observations, interviews, and document analysis techniques, a set of categories were initially established, some of them were predetermined from the research question and objectives; others emerged from the analysis of data. These categories and related sub categories are listed below.

4.1 Teachers' pedagogical practices for teaching reading

This category refers to the way how the class is conducted and the type of activities and tasks performed by the teacher in the development of the reading class. The following graphic (Figure 5) illustrates the subcategories defined for it :

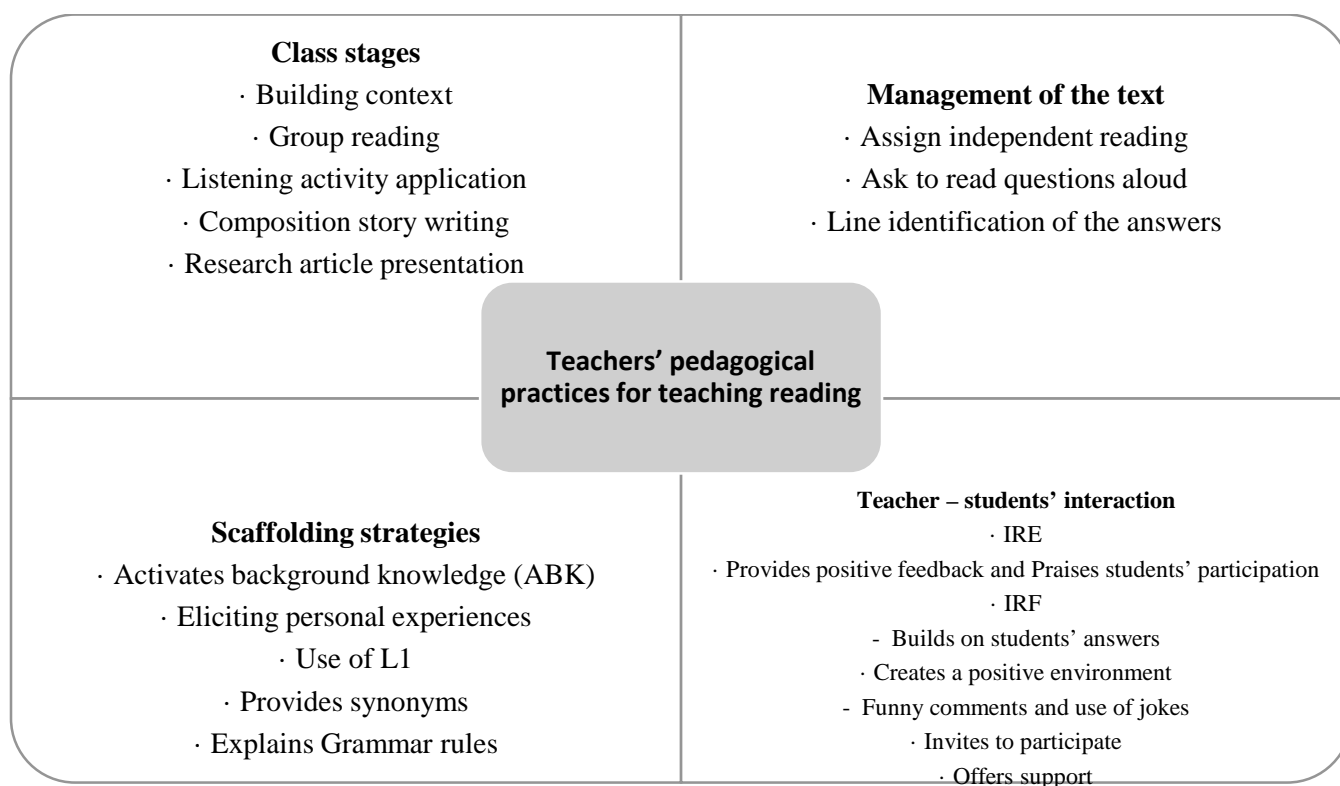


Figure 5. Teachers' pedagogical practices for teaching reading

4.1.1 Building context

During the observation developed at the English class, it was possible to notice an introduction stage, students in this first instance were presented with a video about some people saying goodbye to one of their relatives. Besides, there were some questions directly related to the video and the topic of the future reading material that these will be dealing with at a later part during the class. Evidence on this regard can be seen in the following excerpt.

6	T	Ok guys answer this question, answer this question. What are people doing? Answer this question ... Do you have a similar memory? Memory? Do you know the meaning of memory in Spanish? (Inaudible, not clear ∞∞): Memory in Spanish. <i>(simultaneous wrote the question in the board and said the question step by step in a comprehensible manner)</i>
7	SA	Recuerdos
8	SB	Recuerdos
9	SS	Recuerdos
10	T	Yeah much better, you are so good! Ho my god! Do you have a similar memory? ... Let's watch the video
11	SS	Laughing

(Appendix # 8 English class observation).

4.1.1.1 Group reading activity

After introducing the main topic of the class with the questions and the video, the teacher gave students a copy of the material and asked them to read in groups and answer the questions at the end of it. Before reading, the teacher took some time to clarify the questions with the class. After some minutes the teacher started asking the questions to different learners and in this way encourage and check students' participation. The following excerpts show evidence about this class stage.

90	T	Chicos bueno vamos a leer un ... una pequeña texto que se trata esta más o menos relacionado con lo que vimos ahora, vamos hacerlo en grupos de tres ...
100	SS	talking in Spanish (xxx) : inaudible, not clear
101	T	chicos me dan cien dólares por el material
102	SB	Americanos o

(Appendix I English class observation).

133	T	Guys do you have any problem with the questions? ojo ahí con las preguntas... number one ¿quien me dice que dice la pregunta número uno? ¿quién me dice?
134	S	students talking (xxx) : inaudible, not clear
135	T	¿Cómo? ¿Cómo? ¿Había? ¿Sally Sally es la chica cierto? Sally había dejado, se había ido antes
136	SS	no
137	T	A la universidad esa es la pregunta cierto? La segunda pregunta ¿qué dice?

(Appendix I English class observation).

4.1.1.2 Listening activity

A listening activity was also implemented as part of the reading class. Students had the opportunity to listen in different occasions and then the teacher made some questions about the audio. Most of these questions were yes / no questions and were basically intended to check students' comprehension of the listening exercise. Evidence on this concern is presented in the following excerpt.

366	T	I want you to listen to Rosa and Michael talk about their memories. Talk about their memories and circle the memories they talk about. So you listen to them you listen to them and you choose and you choose the correct answer ok? Primero habla rosa y después... Que tienen que hacer chicos (xxx) : inaudible, not clear Ana
367	S	(xxx) : inaudible, not clear
368	T	A encerrar ¿qué? El primer punto a encerrar ¿qué? ¿Vas a encerrar?
369	S	Las cosas (xxx) : inaudible, not clear

(Appendix I)

4.1.1.3 Composition story writing

The final step in this class was an evaluation activity in which the teacher asked students to individually write a paragraph with similar characteristics to Sally's story. The teacher provided oral instructions for carrying out the activity. Students were required to work on their writing compositions but these were not able to finish it in class. As a consequence, this was assigned as a homework for the next lesson. This is shown in the following fragments taken from observations.

533	T	Ok guys finish para terminar. Vamos hacer esto individualmente así vamos a coger nota del segundo corte... Guys ready?
534	SS	Students talking in Spanish
535	T	Guys, guys in one hundred words en 100 palabras en 100 palabras write about a good memory that you have. Ok write about. Write cien words mínimo, pueden pasarse ok pueden pasarse chicos una escribe 10 palabras por cada renglón. (xxx) : inaudible, not clear
536	S	¿En grupo profe?
537	T	No individual

(Appendix I English class observation)

550	T	¿Chicos obviamente van a tener que usar qué?
551	SS	Pasado
552	T	Very good guys. You are so good
553	SS	Students talking in Spanish (xxxx) : inaudible, not clear.
554	T	Williana ¿terminaste?

(Appendix I English class observation)

4.1.1.4 Research article presentation

In the microbiology session, the evaluation instance was clearly identified as the most important stage of the class. The teacher in this area focused her attention on evaluating students' reading understanding through a written summary of the research article accompanied by an oral presentation of the investigation. Students were asked to come into the classroom in the assigned working groups and to present the information required by the teacher. The questions asked were directly related to the material and apparently were intended to check students' comprehension of the documents. Nevertheless, it is important to highlight that all these questions and interactions among the participants were carried out using students' mother tongue and there was none English interaction.

9T	¿Cuál es el objetivo de esta investigación?. ¿Qué querían ellos buscar?
10SA	El aceite ese... esencial de la canela ... a ver si era xxx ... en el base que contenía el virus
11T	El embace que contenía el virus no entiendo.
12 SC	Osea ellos lo que hicieron fue, tomaron materiales de embazados como el pet, el papel y el carbón y ... ósea para poder observar si ahí si

(Appendix J Microbiology class observation)

38T	OK pueden salir y me manda al otro grupo ... y esperamos a ver si nos llega la luz
39T	Son cinco verdad siéntense
40SS	(Students organizing in the classroom and taking seats)
41T	Bien maría Isabel
42SA2	Si
43T	Cuéntame del articulo

(Appendix J Microbiology class observation)

4.1.2 Management of the text

When referring to the use of the reading materials applied by the teachers in their classes, some aspects were noticed. As it was mentioned before in the microbiology subject, a reading class was not evidenced. Therefore, it was not possible to see the way of the text was implemented in this context. The only verification about the texts and their uses in this class was when students presenting the information contained in the reading materials through a written summary and an oral presentation of the research articles.

The texts and the activities used for the development of the reading class based on the reading material are shown in the following paragraphs. On the other hand, during the English class some characteristics about the management of the text were identified. For example:

4.1.2.1 Assign independent group reading

During the reading session students were asked to read in groups. After the presentation of the video and the initial questions socialized in the class, students received a text and were asked to work together on the material. Later, they were asked questions about the same text. In the following excerpt evidence on this aspect can be seen.

117	T	Ok chicos vamos a tomarnos hasta las dos para leer y responderemos las preguntas. guys si bienen algún problema entendiendo algo, alguna palabra o algo que esté en el texto, levanten la mano do you have a question? ...very funny
118	S	talking in Spanish (xxx) : inaudible, not clear
119	T	Ok if you have any trouble with a word with the vocabulary or anything else in the text, the text is very easy guys. it's not difficult. it is very easy ok. it is very easy but if you have problems with the vocabulary or something you don't understand you let me know and I'll go there ok got it? Yes?
120	SS	yes (laughing)

(Appendix I English class observation)

4.1.2.2 Ask to read questions aloud

After the group reading activity, there were a series of question about the material that students were asked to read and answer. At the beginning the teacher wanted to make sure that the students understand the questions. Thus, the tutor decided to socialize them by asking learners to read the questions in class so that the rest of the classmates could listen to their partners' utterances and maybe have more chances to understand. This is illustrated in the following excerpt.

135	T	¿Cómo? ¿Cómo? ¿Había? ¿Sally Sally es la chica cierto? Sally había dejado, se había ido antes
136	SS	no
137	T	A la universidad esa es la pregunta cierto. La segunda pregunta ¿qué dice?
138	S	¿Que va hacer Sally a la universidad?
139	T	Que¿why? ¿por qué?
140	SS	A porque students talking (xxx) : inaudible, not clear
141	T	fue
142	SS	porque fue Sally a la universidad

(Appendix I English Class observation)

4.1.2.3 Line identification of the answers

From the questions defined and applied in the reading, students were asked by the teacher to find the exact line of the text containing the answers. The teacher implemented the search of literal information about the text. Hence, students were required to read the text and look for particular data in the story. With this, the teacher expected to make sure that all the students really read the material and not to copy from other peers. This can be seen during the interview carried out with the teacher and the class observation.

234	T	ok, ok let's go to number four... williana williana la numero cuatro why? ¿Por qué? ¿porque ella no queria que se fuera? a or b? b is that correct guys?
235	SS	Yes
236	T	¿Dónde encontramos eso en el texto Joaquín? ¿en qué parte del texto encontramos la respuesta a esa pregunta?
237	S	En because, because she loved her daughter very much and ... she was also afraid because she loved her daughter very much

(Appendix I English Class observation)

“Bueno las actividades que normalmente hago siempre son muy al nivel literal del texto que es como encontrar cosas en el texto al nivel literal” [Well, the activities that I normally apply are very at a literal level of the text, that is to find things in the text at a literal level]. See (Appendix C English teacher’s interview).

4.1.3 Scaffolding strategies

The teacher in this context provided different types of scaffolding during different moments and stages of the class in order to guide students’ learning. This is coherent with Vygotsky (1978) who states that through the assistance of a more capable person, a student is able to learn

skills that go beyond his actual developmental level. And with the adequate assistance or scaffolding proposed by Bruner is when the students is able to reach to that instance where this is now can work in an in independent manner without the initially required assistance. The following are the scaffolding strategies applied by the teacher in this context:

4.1.3.1 Activates background knowledge (ABK)

The use of ABK activities was identified during the development of the English session. This could be noticed from the beginning of the class, when the teacher started by writing down a reflective question on the board and showing students a video related to the class topic. This situation could be perceived in the first instances of the class. It was in the building context stage where the learners had the opportunity to be familiarized with the reading and its topic. The next excerpts show evidence about this fact.

6	T	Ok guys answer this question, answer this question. What are people doing? Answer this question Do you have a similar memory? Memory? Do you know the meaning of memory in Spanish? (Inaudible, not clear ∞∞): Memory in Spanish. <i>(simultaneous wrote the question in the board and said the question step by step in a comprehensible manner)</i>
7	SA	Recuerdos
8	SB	Recuerdos
9	SS	Recuerdos
10	T	Yeah much better, you are so good! Ho my god! Do you have a similar memory? Let's watch the video(coughing)
11	SS	Laughing

(Appendix I English Class observation)

21	T	Yeah alright! So guys. What are the people in the scene doing? What are they doing? Very good in can be in English or Spanish.
22	S B	they are saying good bye(×××) : inaudible, not clear
23	T	Very good Karol. They are?
24	SB	they are saying good bye to each other
25	T	They are saying good bye to each other. Very good saying good bye yeah? Where are they? Where are they? The place?
26	SS	In the airport
27	T	In the airport in the airport yeah Guys do you have a similar memory? Do you have a similar memory?
28	SC	Yes
29	T	Yes mely. for example tell me
30	SC	In Spanish?

(Appendix I English Class observation)

4.1.3.2 Elicit personal experiences

As another way to scaffold students in class, the teacher tried to connect students' real life experiences with the class topic. Again, this was done through explicit questions that required learners to express their own ideas and past experiences that these may had lived. See the following example.

53	T	Quien más chicos quien mas no es de aquí y está estudiando aquí y sé que se queda aquí.
54	SS
55	T	(×××): inaudible, not clear ¿tú de dónde eres?
56	SD	de planeta rica
57	T	¿De planeta rica? y a ti que también te despidieron así? sí?
58	SD	No
59	SS	(laughs)

(Appendix I English Class observation)

71	T	(xxx): inaudible, not clear ¿tu si eres de aqui? ¿De dónde eres Adriana?
72	SG	San Andrés de sotavento
73	T	San Andrés de Sotavento. Está lejos. También te despidieron así y te dieron todas las instrucciones y consejos... ¿qué Conejos te dieron?
74	SF	pórtese bien y estudie
75	T	claro así es, básicamente pórtese bien y estudie no tienen más na que hacer aquí he bueno

(Appendix I English Class observation)

4.1.3.3 Use of L1

The use of students' mother tongue during classes was performed by teacher and students. There were different situations along the reading session where Spanish was frequently used by the teacher to express ideas, explain, and make comments and questions in class. As a consequence, students' answers and participation were carried out in Spanish as well. Also a combination of the target language and mother tongue was evident during the entire lesson. English was frequently used when questions were asked by the teacher to allow learners to participate using the target language in class. Evidence regarding the constant use of L1 during the reading class is illustrated next.

71	T	(xxx): inaudible, not clear ¿tu si eres de aqui? ¿De dónde eres Adriana?
72	SG	San Andrés de sotavento
73	T	San Andrés de Sotavento. Está lejos. También te despidieron así y te dieron todas las instrucciones y consejos... ¿qué Conejos te dieron?
74	SF	pórtese bien y estudie
75	T	claro así es, básicamente pórtese bien y estudie no tienen más na que hacer aquí he bueno

(Appendix I English Class observation)

4.1.3.4 Provides synonyms

Also scaffolding activities were based on the use of synonym as a way to supply learners with more clues and ideas that will eventually lead them to identify relevant information about the class. The following excerpt illustrates this aspect.

162	T	Quería ir a casa los estudiantes... la nueve que dice? glad! glad! is a synonym for happy. Is a synonym for happy entonces que le dicen?
163	S	¿Porque estaba la mamá de sally feliz?
164	T	Yeah ok ¿y la última miss? ¿que es miss?
165	SS	extrañar
166	SS	los estudiantes extrañaban a sus padres

(Appendix I English Class observation)

4.1.3.5 Explains grammar rules

During the reading class, it was also possible to see the explanation of some grammar aspects related to the class topic. In some specific moments of the class the teacher decided to explicitly explain some key information about the grammar studied in class. Evidence on this regard will be illustrated next.

353	T	A ok muy bien Carol. Sally
354	S	Kept her promise
355	T	Sally kept her promise. Este también está en, ¿Este es el pasado de que verbo?
356	SA	¿Mantener qué?
357	SB	Mantener
358	T	¿Si o no? Fácil o no?
359	SS	Yes
360	T	Ok por eso sabemos que eso sea en pasado por que los verbos están en pasado si o no en todo el texto normalmente. Casi en todo el texto y hemos estado hablando un poquito de pasado de echo ok guys. Now we are gonna do an activity. I want you to take a look to this question guys. Take a picture. Because we are going to continue with another exercise.

(Appendix I English Class observation)

4.1.4 Teacher – students' interaction

The questions and answers activities described above, as well as other activities that involved the exchange of information between teacher and students revealed the types of interaction carried out in this class. The following are the types of interaction held in the English reading class between teacher and students.

4.1.4.1 IRE (Initiation/Interrogation, Response, Evaluation)

During the English class, the IRE type of interaction was noticed. Students were asked to answer a series of questions that were evaluated positively or negatively by the teacher. It was the tutor who frequently provided positive comments based on students' responses as a way to evaluate individuals. Some a few students used to participate in a voluntary manner during the reading session. Nevertheless, it was the teacher who was frequently assigning turns to specific learners with questions and was also the tutor the one that started the interactions at all times. Examples on this aspect are portrayed in the following excerpts.

283	T	Ok. Yeah guys so, number nine. Joaquin number nine a no ya duvan number nine. Why was sally's mother glad?. La numero nueve eight or b?
284	SC A
285	T	¿A dónde encontramos eso duvan?
286	SCsally's mother was very glad then the students had said this.
287	T	Ok glad es un sinónimo de que guys glad?
288	SS	Happy
289	T	A ok, very good duvan ok guys now the question number ten. Muñoz question number ten
290	SS	Students (laughing)

(Appendix I English Class observation)

257	T	No she was not happy at all. ¿Por qué? ¿Por qué no estuvo feliz?
258	S	porque pensaba que ella estaba más feliz en la universidad que en su casa
259	T	Very good Jasón very good por que la mama pensaba que Sally la pasaba muy bien en la universidad. (xxx) : inaudible, not clear Entonces por qué no estaba feliz la mama de Sally la numero siete ya la respondió Jasón, pedro entonces ¿cuál sería? a or b?
260	SS	B

(Appendix I English Class observation)

Also, it was observed that teachers corrected students' answers, as shown in the following examples.

322	T	Her mother ¿qué?
323	S	Was really sad about this
324	T	Was really sad about this y con otro verbo que no sea was
325	S	Pensar soug
326	T	Thought! ¿Cierto ?y ¿cómo dice sally que dice?
327	SS	Students (laughing)
328	S	(laughing) she thought

(Appendix I English Class observation)

4.1.4.2 IRF

In the English context IRF interaction was also identified in class. There were some a few interactions that were reinforced by follow up questions provided by the teacher that kept students interacting and reformulating based on their own responses. Although most of the interactions presented in class were based on the use of IRE, In the next example it could be seen some weak attempts of IRF interaction. Some of these exchanges are illustrated below.

389	T	Ok what type of vacation was? What type ¿que tipo?
390	S	Family
391	T	Family vacation yeah! Was it good?
392	SS	yes
393	T	Ok yeah, how how were the beaches?
394	S	Sunny
395	T	Sunny! and hot. ¿Había mucha gente o poca gente en la playa? [were there a lot of people or a few people in the beach]
396	S	People of her age

(Appendix I English Class observation)

321	S	Her mother
322	T	Her mother ¿qué?
323	S	Was really sad about this
324	T	Was really sad about this y con otro verbo que no sea was
325	S	Pensar soug
326	T	Thought! ¿Cierto ?y ¿cómo dice sally que dice?
327	SS	Students (laughing)
328	⊗	(laughing) she thought
329	T	She thought?

(Appendix I English Class observation)

4.1.4.3 Creates a positive environment

It was perceived a nice and welcoming class environment. The teacher created a welcoming atmosphere for learners with the use of jokes and positive and motivational comments about students' performance.

4.1.4.1 Funny comments and use of jokes

During the development of the English class, it could be perceived the use funny comments expressed by the tutor. There were situations in which the teacher told short personal hilarious stories about himself. The teacher seemed to have a sociable and welcoming personality that may motivate students to participate more in classes. Some of these comments are displayed in the next excerpts.

101	T	chicos me dan cien dólares por el material
102	SB	Americanos o
103	T	Americans Guys a hundred dollar Jeison
104	SS	talking in Spanish (xxx) : inaudible, not clear
105	T	Louisa who are you working with? (xxx): inaudible, not clear luisa luisa estas concentrada en la clase? talking in spanish (xxx) : inaudible, not clear
106	SS	talking in spanish (xxx) : inaudible, not clear
107	T	guys 100 dolares colombianos
108	S	teacher
109	T	¿señor?

(Appendix I English Class observation)

4.1.4.5 Invites to participate

In classes teacher required students' participation. The teacher asked learners questions as a way to promote interaction and check students' comprehension about the topic being discussed. The tutor made questions to different learners during the reading class. This activity was carried out with the purpose of allowing learners to express their ideas and opinions. The following excerpt illustrates this aspect.

181	T	Did everyone finish?
182	SS	No
183	T	Ingrid, Nohelia, Estefany no what about you?
184	T	Ready guys yeah? Finish? Finish? Yeah?
185	SS	No
186	T	Jayson, Williana, Caroline, Luisa, let's wait five minutes, five more minutes and let's start checking the questions ok
187	SS	yes
188	SS	finish

(Appendix I English Class observation)

4.1.4.6 Offers support

Teacher's support in the English reading session was evident when the tutor offered help to the students in relation to the vocabulary of the text. Although students were supported by the teacher, he simply provided learners with clear and explicit translation of the unknown words that these encountered during the reading. The following excerpt is a clear example of this support.

117	T	Ok chicos vamos a tomarnos hasta las dos para leer y respondemos las preguntas, guys si tienen algún problema entendiendo algo, alguna palabra o algo que esté en el texto, levanten la mano do you have a question? ... very funny
118	S	talking in Spanish (xxx) ... inaudible, not clear
119	T	Ok if you have any trouble with a word with the vocabulary or anything else in the text, the text is very easy guys, it's not difficult. It is very easy ok it is very easy but if you have problems with the vocabulary or something you don't understand you let me know and I'll go there ok got it? Yes?
120	SS	yes (laughing)

(Appendix I English Class observation)

Regarding teachers' practices for teaching reading in these contexts, it was possible to analyze the methodologies used when working with texts and the way how reading materials

were studied in class. First it is important to refer to the class stages that were perceived during the development of class observations, especially at the English session where the reading class was introduced with the presentation of a video and some questions that were intended to connect students' own ideas and experiences with the topic of the reading. This first part of the class can be considered as the stage where learners are contextualized with the text using pre-reading activities, also known as the deconstruction step suggested in the teaching and learning cycle proposed in the genre approach. The teacher made use of the audio visual material and the questions in order to elicit information from learners so that these could start making an idea about the topic of the future reading. Boccia et al (2013) agree with the fact that students need to be supported and guided since "the more we help them to build up their knowledge about the subject matter (more technically the field,) they will be reading or writing about, the more we will facilitate their work with texts" (p.21). (see appendix I) Even Though students were at some point related with the text topic, these were not taught about the social purpose nor the text structure of the material, which is one of the objectives of the deconstruction step as it is supported by Martin and Rose (2012) to teach the sequence of stages that are normally found in texts is also a key aspect in the deconstruction step. This is a fact that needs to be illustrated in order to recognize the organization of any text structure or type of text not matter the gene of this.

Apart from the introduction activities carried out in this context, students were also asked to read in groups, which may foster students' interaction and motivation towards the reading task and the learners' exchange of ideas. The implementation of group reading in class is coherent with the use of DARTs activities that allow students to construct meaning from a text in a cooperative manner since when learners listen to another partner reading, these will probably get

more interesting in the reading activity. According to Collin (2007) during the use of DARTs activities the “discussion and sharing of ideas is crucial” (p.28). Although the use of group reading could bring some positive effects on interaction, there was not any other guidance or scaffolding provided by the teacher. For instance, reading aloud or shared reading could have been used as a way to model students with the reading process as well as fostering motivation and comprehension. Moss (2016) supports the shared reading by stating that reading with students contribute that learners have an adequate example that will help them to construct positive experiences and avoid learners’ negative reactions towards the reading process that may be the result of the possible mistakes that these could have especially when at an initial instance where students are not too familiarized with the genre of the texts. Also, Rose (2005) claims in favor of the use of shared reading when this refers to this methodology as “unquestionably the most valuable standard activity in junior primary for preparing children to become readers, as it tunes them into the joy of reading for pleasure and constructs shared identities as participants in reading as meaningful communication” (p.149).

On the other hand, another important aspect to consider about teachers’ practices has to do with the interaction during the reading class. Initiation, response and evaluation (IRE) was the common type of interaction used. Most of the exchanges perceived at both observed subjects displayed a constant used of teachers’ questions that focused on the third part of the IRE exchange. In other words, students were interrogated basically with the purpose of checking learners’ attention and comprehension. The use of IRE transactions contribute to classroom management and organization of learners’ intervention. Nevertheless, these types of interaction in class do not provide learners with engaging communication activities that foster students’ participation. As (Barnes 1992 cited in Hall 2003) concludes that the use of IRE interactions did

not have a positive effect when trying to engage students in a real conversational context. On the other hand, the constant application of this type of interaction in class only offered the teacher's control reducing pupils' chances of reflecting and expressing their thoughts. As a contrast, initiation, response and feedback (IRF) interaction suggested by van Lier (1996) viewed since a participation orientation, tries to foster students' participation and engagement instead of only regulating order and learners' initiative.

When referring to interaction, the use of mother tongue is a factor that needs to be analyzed in both areas, specifically at the microbiology subject where English was never used. On the contrary, in the English class, the use of Spanish was also noticed. However, there was a greater percentage of target language used during the session. The most appropriate way for learners to improve their language level is based in the significant "role that interaction plays in helping learners to assimilate and internalize knowledge of linguistic forms in the target language" (Hall, 2003, p.1). Hence the use of mother tongue should be kept to a minimum during the reading classes.

4.2. Teachers' beliefs about reading

This category refers to the way how teachers conceive reading and the importance given to the reading skill. The sub categories below are also part of teachers' perceptions about reading. The next graphic represents the subcategories of teachers' beliefs about reading at both areas English and microbiology. (See Figure 6).

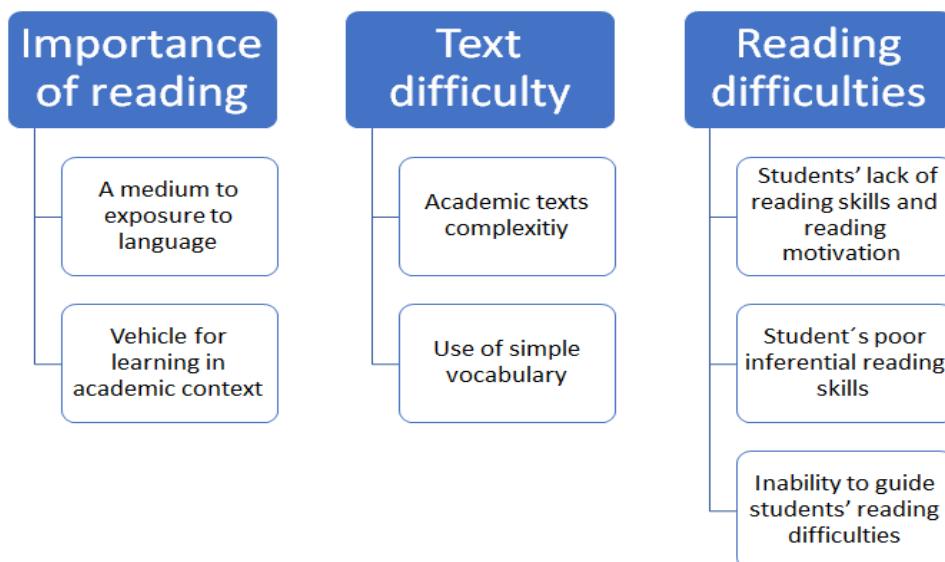


Figure 6. Teacher's beliefs about reading

4.2.1 Importance of Reading

Teachers' perception regarding the reading skill is displayed in the following part. Teachers expressed the way how these perceived reading as well as the reading skill importance for the academic context. Results from the interview applied to the English teacher revealed that the mentor considers the reading skill as a medium of exposure to language and a source of information due to the direct contact with the reading materials.

“obviamente como ellos están en un ambiente muy académico, los textos cumplen un papel muy importante porque los ayudan a ellos a estudiar, a encontrar información, entonces los textos, en cuanto en este ambiente académico siempre van a ser muy importantes porque se trabajan”[Obviously as they are in a very academic environment, texts have a very important role because these help students to study, to find information, then texts in relation to this academic context will always be quite important as they are worked] (T.I.Appendix C).

Likewise, the microbiology teacher recognized the importance of the reading skill and the language in tertiary education. This expressed that the reading skill is a real need for students at a university level and that they need to develop the reading ability because of the importance of this skill in the educational context as well as the other requirement university students have when dealing with the Saber pro test. For example:

“Creo que es fundamental en el momento actual en la educación superior”[I think is essential in the current moment at tertiary education].(T.I.Appendix D).

“Uno de los aspectos evaluados en las pruebas saber, siempre ha sido el aprendizaje del inglés de hecho esa ha sido una prioridad en el departamento de ingeniería de alimentos tratar de introducirles a los estudiantes estrategias que tengan que ver con el manejo del idioma” [one of the aspects being evaluated at the Saber pro has always been the English learning. In fact, this has been a priority for the Food Engineering department trying to present to the students strategies in relation to the language management].(T.I.Appendix D).

Regarding beliefs about the use of academic texts in his classes and the complexity of the reading materials, the English teacher expressed not to be in favor of the application of these types of texts.

“Normalmente son textos muy enfocados en el aprendizaje del idioma más que textos académicos de su áreas, porque normalmente los textos académicos de área por qué y lo he hecho son muy complejos para ellos y todavía no tienen el nivel cognitivo para entenderlos”[normally these are text which are focused in the language learning, more than academic texts from their area, because I have done it. These type of texts are very complex for them and they still do not have the cognitive level to understand them] (T.I.Appendix C).

From this interview, it can be seen that the teacher has a negative perception about the use of academic texts linked to students' field of study. In fact, the tutor opted to apply narrative texts such as stories in order to promote students' understanding based on reading materials that are not too complex in relation to vocabulary use and structure. On the other hand, in the microbiology subject students were exposed to the use of academic and research materials that were related to the learners' studies. The teacher in this subject asked pupils to translate articles and be ready to share and report the information understood from the material. Nevertheless, in this process the teacher expressed the difficulties that this type of texts represented for them. The following excerpts provide evidence on this regard.

...“eso empezó a generar muchos inconvenientes porque ellos no ósea los artículos son muy complejos para lo que ellos son capaces de entender de la materia este” [This started to generate many difficulties because they do not. In other words, the articles are too complex to what they are able to understand of the subject]... (T.I.Appendix D).

In relation to teachers' beliefs about students' Reading difficulties, the tutor from the English subject manifested that students' lack of reading skills and motivation. As a consequence, L2 reading seems to be a big problem for learners in this context. As it is expressed by the tutor, students are not used to read and their motivation towards reading can be considered as another aspect when referring to reading problems. The excerpt below illustrates this conception.

“Los muchachos no leen, ósea no leen normalmente textos. Normalmente la costumbre o por ejemplo los comportamientos de ellos es normalmente está relacionado con las redes sociales, ósea lo que está en sus redes sociales es lo que ellos leen. Muy pocos leen libros o artículos”[Boys do not read. I mean they do not normally read texts. They are frequently accustomed to. Their behavior is basically linked to social networks. This means that what it is in

their social networks is what they read. Very a few of them read articles or books] (T.I.Appendix C).

Another belief related to students' reading difficulties is that they have poor inferential reading skills. During the interview, when being asked about the problems students have regarding the reading skill, the English teacher expressed his opinion about this particular issue.

“Bueno normalmente el problema que he visto lo que he visto lo que he visto es que ellos normalmente el nivel lector de ellos se queda como en la parte literal siempre o casi siempre, muy pocas veces son capaces de inferir cosas demasiosos complejas” [well, normally the problem that I have identified. What I have seen is that they commonly, the reading level is always based only in the literal part and they are not able to infer too complex things] (T.I.Appendix C).

In the other context, the microbiology teacher expressed her concern about students' reading drawbacks but this also made reference to her inability to cope with students reading difficulties. Evidence about this issue was noticed during the teacher's interview, when asked about the way how she dealt with learners' reading problems.

“bueno en mi caso particular para el problema del idioma inglés yo no doy ninguna opción de igual cosa por que como nosotros no somos los del área”[well, in my particular case for the problem with the English language. I do not provide any option since we are not the ones of the subject]. (T.I.Appendix D).

Both teachers from the studied context agreed on the importance of the reading skill, especially for students at tertiary education that need to develop some basic competences in order to succeed in the academic context. This is supported by Horwitz (2008) when this states that,

“reading has the possibility of reducing social distance. Students can learn sound – symbol correspondences, vocabulary, and academic content through reading. And, of course the ability to read and comprehend academic materials is essential for the educational success of many learners” (p.115). The English teacher manifested a positive point of view about reading by saying, “obviamente como ellos están en un ambiente muy académico, los textos cumplen un papel muy importante porque los ayudan a ellos a estudiar, a encontrar información” [Obviously as they are in a very academic environment, texts have a very important role because these help students to study, to find information].

In the same line, the microbiology teacher stated that the importance of the skill was based on the preparation of the students for the SABER PRO test and the emphasis that the program has on trying to improve students’ results on the national exam. To this the teacher declared “Uno de los aspectos evaluados en las pruebas saber, siempre ha sido el aprendizaje del inglés de hecho esa ha sido una prioridad en el departamento de ingeniería de alimentos tratar de introducirles a los estudiantes estrategias que tengan que ver con el manejo del idioma”... [one of the aspects being evaluated at the Saber pro has always been the English learning. In fact, this has been a priority for the Food Engineering department trying to present to the students strategies in relation to the language management].

The information presented above suggests that both mentors working on the L2 reading teaching were able to recognize the importance of the reading skill for university students since when having the reading sessions, students had the opportunity to work based on the use of English reading materials in the two areas. Hence, teachers’ objectives regarding the development of the reading skill in the target language is evidenced by the implementation of L2 texts.

On the other hand, teachers in this context also recognized the difficulties that learners are experiencing at the moment of using academic reading materials. In the case of the English teacher, this referred to his preference about the use of narrative stories due to the complexity of academic articles. On the other hand, and even though the microbiology teacher implements research academic materials in her classes, this also identifies the complexity of these types of readings, especially at the beginning of the semester when students do not have the enough preparation and information about the content area. Therefore, teacher asks learners to have presentations based on research academic materials at a later instance during the semester. (see Appendix D). As a conclusion, the specific use of genres for each subject is not recommended for the development of the reading skill. On the other hand, learners should be exposed to a variety of genres and text structures that will prepare students to deal with different types of texts. The purpose of a text can vary but there will be always a main intention for this. Thus, “narrating a complicating event produces a narrative, explaining a sequence of cause and effect makes an explanation, classifying and describing things makes a report, arguing for a point of view makes an exposition, and describing things makes a report,” (Martin and Rose, 2012, p.22). Hence, students should be presented with the possibility to study different types of text, linguistic characteristics and the common stages that are part of these materials that will eventually enhance reading comprehension.

Apart from teachers’ perception about the reading skill and the reading materials used, they also provided information related to students’ reading difficulties. Regarding this issue, both teachers concluded that there are some reading motivation problems. Reading sometimes can be interpreted as a changing and personal activity that is guided by the reader’s interest. For instance, according to Grabe (2009) “as reader purpose shifts, as comprehension is impeded or as

interest varies, the reader adjusts reading process and goals” (p.15). Besides, motivation is a very important component of the reading process since if teachers are capable of keeping students motivated towards reading, these will “read more, learn more, use strategies for reading and learning more effectively are more curious and became more engaged in their reading and learning ” (Grabe, 2009, p.185) Therefore, students personal interest should be taken into account at least in an initial instance in order to try to deal with motivation problems when reading. Hence, reading classes could be developed based on topics that students find more interesting for them. This can serve as way to boost reading motivation level in students.

4.3. Teachers’ reading evaluation strategies

This category makes reference to the activities that are intended to evaluate the reading skill. In this way, the reading evaluation strategies applied to check students’ progress were described in this section (See Figure 7).

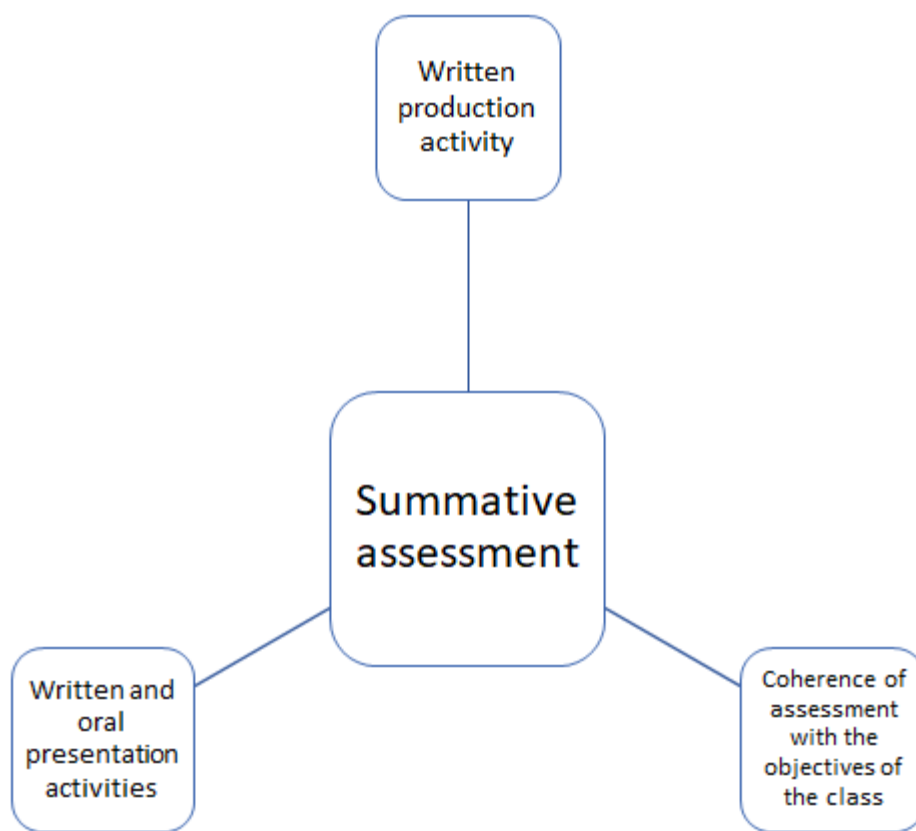


Figure 7. Teacher's reading evaluation strategies

4.3.1 Teachers' strategies for evaluating reading

During the development of classes in the English subject, some assessment activities were used to evaluate students' reading skill and comprehension. Summative assessment was applied almost at the end of the class when the teacher assigned a written activity. Students were asked to write a similar story to the one that they had previously read and studied in class. Also, they were asked to use real life or past memories that these had experienced in their lives.

533	T	Ok guys finish para terminar. Vamos hacer esto individualmente así vamos a coger nota del segundo corte... . Guys ready?
534	SS	Students talking in Spanish
535	T	Guys, guys in one hundred words en 100 palabras en 100 palabras write about a good memory that you have. Ok write about. Write cien words mínimo, pueden pasarse ok pueden pasarse chicos una escribe 10 palabras por cada renglón. (xxx) : inaudible, not clear
536	S	¿En grupo profe?
537	T	No individual

(C.O.Appendix I)

In the previews interview transcription, it can be clearly seen that the teacher implemented a written activity as a way to evaluate students in a summative manner. The mentor referred to the exercise as a final activity from which students were going to get a grade in their second term. Apart from this, the English teacher also referred to other types of evaluation activities that this used to apply when working with texts. For instance:

“A bueno este varias cosas primero, por ejemplo en lecturas de comprensión preguntas de comprensión se les evalúa si entendieron ciertas partes ya sea de inferencia o partes también literal que están ahí si encontraron tal parte del texto que se les está preguntando” [A well, different things, first, for example in comprehension readings, comprehension questions. they are evaluated if they understood certain parts of inferencing or also literal parts that are there and if they found a specific part of the text that is being asked] (T.I.Appendix C).

Another strategy applied by the teacher in this context, was the use of reading comprehension questions in order to identify literal and inferential information found in the text. In this way, students were also evaluated in relation to their reading skills.

Regarding to the evaluation strategies used, the microbiology teacher limited the class to carry out group evaluation activities during the session that consisted in students' oral

presentations accompanied by the production of a written document. Students' assignments were based on a translated summary of the research article provided to the groups with the presentation of some specific vocabulary. Evidence about this aspect will be shown in the next excerpts.

“Pues sí evaluó la comprensión y que puedo evaluar cuando ellos me lo explican o cuando leo el trabajo en español del texto traducido al inglés”[well, I evaluate the comprehension and I can evaluate that when they explain it to me or when I read the assignment in Spanish for the texts translated into English] (T.I.Appendix D).

“Si yo generalmente entonces les pido es un análisis del artículo verdad? En algunos casos les pido conclusiones por ejemplo en el taller de hoy les pedí fue vocabulario en inglés” [yes, I generally ask them an analysis of the article, right? in some other cases I ask them conclusions, for example in today's workshop I asked them vocabulary] (T.I.Appendix D).

The teacher in the microbiology subject focuses on the use of translations to evaluate students' reading comprehension of the research articles assigned. With the summary of the translated texts and the oral presentation of the information students were also evaluated in a summative manner, which focuses on giving scores to learners based on their performance and presentation of the information.

Assessment is a key component of the teaching and learning process. It is important to identify students' progress of contents and skills studied. In the case of this project, that the emphasis is on analyzing the teaching and evaluation of the reading skill, it becomes fundamental to recognize the importance of reading assessment at a tertiary level. Grabe (2009) states that students, teachers and other characters that are also part of the educational context are

interested in the assessment activity since the great role that this plays when informing about vital information of the characters involved in the teaching and learning process. Besides, when referring to assessment in relation to the reading activity, it is outstanding to recognize that through the use of assessment teachers are able to identify individualized students' motivations, knowledge, skills and attitudes about the reading exercise. Apart from this, mentors have the opportunity to also reflect on the reading teaching methodologies being used. Afflerbach (2010).

Summative and formative are the two most common types of assessment. These two differ in essential aspects. For instance, formative focuses on processes, whereas summative is interested in providing numerical data, grades or simply outcomes. This is supported by Wisdom (2006) when the author makes a comparison between the two types of assessment and this prefers to describe formative assessment as a journey, rather than being an outcome or a final result. Nevertheless, in the contexts studied in this project it could be perceived that the focus of the assessment was on the summative aspect. All the evaluation activities carried out by the mentors in both subjects were intended to assign students with a score and not to give formative feedback to learners to reflect on their weaknesses and design a course of action that may help them improve their reading difficulties.

Another aspect that revealed the use of summative assessment in the reading classes was the fact that in the two areas, the evaluation activities were assigned at the end of the sessions defining a particular space or moment for students to carry out the summative activities. Despite of the use of summative assessment, it is important to recognize the formative assessment for L2 teaching of reading since this provides both teachers and students with essential information that can be used to make changes and adjust teaching aspects that will lead to the improvement of the teaching and learning of the reading skill. Formative assessment or also known as assessment for

learning has different purposes, the objective in this case is to “provide immediate feedback on task and to teach students to engage in more effective learning” (Grabe, 2009 , pp.334-335).

Hence, through the implementation of more formative assessments students will be provided with the tools and the vital information necessary to make progress on their learning processes.

4.4 Characteristics of texts used in the reading class

In this category, the generic and linguistic characteristics of the texts read by the students in each context were analyzed. The following are the subcategories that belong to this aspect.

4.4.1 Genres

Stories

Research /academic articles

4.4.2 Linguistic characteristics

Language characteristics

Characteristics of text used in the reading class

The text used in the English class context belonged to the stories genre. Narratives about common topics that students could relate with their life experiences were implemented to teach L2 reading. In this particular case, it was used a story entitled Sally goes to the university. This referred to a real situation that university students normally experience when saying goodbye to their relatives and entering to college education. (See Sally’s story in the Appendix K).

In this text, some stages were clearly identified (See Appendix K about the analysis of the narrative text). In the first section of story genres known as orientation, the purpose is to explain the reader the main aspects in the story. Such as: character descriptions, time and settings, Sally

the main character her age and the fact that she always had lived with her parents. In the next excerpt it can be seen the orientation stage with its specific phases.

Phases, stages and their purposes		
Stages (every stage and its purpose)	Phases (every phase and its purpose)	Text sample
<p>Orientation</p> <p>In this first stage of the text, the purpose is to explain the reader the main aspects in the story. Such as: character descriptions, time and settings. Sally the main character her age and the fact that she always had live with her parents. Besides, her mother also plays a really important role and has great participation being considered one of the main characters of the text. For example the orientation can be recognized in the text from the beginning with the initial descriptions that are provided.</p>	<p>Settings</p> <p>The introduction of the story is very clear. It talks in general about characters, locations and context. Providing the reader with a view about the situations taking place in the story.</p> <p>Descriptions</p> <p>It is in this instance where the writer makes a short description of the character and provides some useful background information that locates the reader into the topic</p>	<ul style="list-style-type: none"> - Sally was nineteen years old. She had always lived with her parents - Sally was nineteen years old. She had always lived with her parents but now the time had come for her to go to the university in another part of the county to study to be a doctor.

(Appendix O)

The main linguistic features of the narrative text used in this context were the simple language and the use of basic text structures that could be perceived in the story. Teacher's preference on this type of text was previously exposed in the teacher beliefs category. Besides, this data can be supported in the information gathered from the English teacher's interview where the tutor clearly expressed the regular use of stories for the development of reading classes. Students worked on materials of common everyday topics that facilitate students' reading comprehension. The reading was based on the farewell of a student saying goodbye to her relatives. Moreover, this text was characterized by the use of not complex vocabulary and the length of the material was one page long. The linguistic features of the text are displayed in the following excerpts.

“Que el texto tenga vocabulario que sé que sé que este de pronto en un nivel que los estudiantes puedan entenderlo y que no incluyen demasiadas palabras desconocidas que le hagan muy difícil de entender o entender las ideas”. [That the text has the vocabulary that I know that is at a level that the students can understand and that does not include too many unknown words that are difficult for them to understand or understand the ideas] (Appendix C)

<p>Detailed analysis of linguistic features of the text</p>	<p>In the story can be clearly identified two main characters which are the ones who have the most participation than any other character mentioned in the story. From the beginning of the text, in the description and setting phases sally the main character is identified with a relational process becoming the entity of the action. Example: Sally was nineteen years old. (Sally the entity / was relational process).</p> <p>In this case, the information provided in one stage of the story can be found being part of the second stage called complication. This is a situation that may take place taking into account that just after the orientation; the complication tends to appear in a normal flow of ideas. Therefore, the information can be part of both the orientation and the complication like in this case. For example: Sally was nineteen years old. She had always lived with her parents, but now the time had come for her to go to the university in another part of the county to study to be a doctor. Her mother</p>
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(Appendix O)

In the microbiology class, the teacher made use of research articles belonging to the scientific genre. All the texts implemented by the teacher in this class were directly related with the students' field of study. The following excerpt illustrates evidence about this aspect.

10 T	Donde pueden bajar un articulo en ingles a su libertad lo que yo les condiciono es con un tema, les coloco un tema que tiene que ver con microbiología y ellos comienzan a descargar eso me permite los dos objetivos, que comienzan a conocer lo que son las bases de datos y lo segundo es que empiecen a leer literatura relacionada con la temática de microbiología.
11 I	Excelente, me parece muy acertado eso bien pasemos a la siguiente. ¿Qué tipo de textos les solicita?, bueno pienso que ya respondió eso
12 T	Si si articulos investigativos
13 I	Si exactamente, enfocados a la carrera

(Appendix D Microbiology teacher's interview)

For the microbiology class, students were assigned to work in groups based on different research articles. Learners were asked to read and summarize the most important information from these texts. In this case a reading material called combined analytical and microbiological tools to study the effect on *Aspergillus flavus* of cinnamon essential oil contained in food packaging was selected in order to analyze the particular characteristics of this type of texts. (See appendix L) The readings were assigned by the teacher. Besides, some stages were identified during the analysis of the material. Research articles are usually composed by a series of structural stages that are important for the development of investigation. In the first instance, the introduction stage provided the general information of key data explaining the purpose of the study context and name of the project. This is shown next in the following Appendix.

Phases, stages and their purposes		
Stages (every stage and its purpose)	Phases (every phase and its purpose)	Text sample
<p>Introduction Initial paragraphs are provided. Important information is presented to the reader in order to have a clear view about the topic objectives of the research article methodology and results obtained.</p>	<p>Contextualization</p> <p>General purpose</p> <p>Processes description</p>	<p>Cinnamon essential oil has been used for centuries to protect food from microbiological infection, and in the last ten years cinnamon essential oil is also incorporated into food packaging materials as antimicrobial agent. However, very little is known about the real effect that it has on the microorganism cells.</p> <p>This study combines analytical and microbiological tools to elucidate cell damage produced on <i>Aspergillus flavus</i>. First, antifungal activity of cinnamon essential oil was evaluated at 103, 104, 105 and 106 CFU/ ml. Minimal Inhibitory Concentration (MIC) and Minimal Fungicidal Concentration (MFC) were determined by macrodilution</p>

(Appendix P analysis of the research article)

Research academic articles are commonly composed of academic complex vocabulary and text structures. For instance, the use of the passive voice grammatical structures and technical vocabulary for presenting the information necessary to describe the different activities and processes during a project are presented next.

<p>However, this interaction has not been studied in depth yet.</p> <p>Most of the grammatical structures implemented in the article were the use of the passive voice. Especially in past tenses such as simple past, present perfect and past perfect in order to report the different research activities that have been carried out for the development of the project.</p> <ul style="list-style-type: none"> • Cinnamon essential oil has been used for centuries to protect food from microbiological infection. • The CIN EO was fortified by the company Argolide, who certifies the final concentration of cinnamaldehyde. • It is generally accepted that the release of the active substance depends on the underlying substrate. <p>As another outstanding linguistic characteristic found in this text, it is presented the use of a lot technical and complex vocabulary that is directly related with the main topic of the field of the study. [Moreover, it can be also concluded that this type of words belong</p>

(Appendix P)

<p>to the research gene category which is a very common linguistic feature in this type of text. As one of the most representative words that can be observed in the research article and that are part of the keywords research list are defined like this.</p> <p>Aspergillus flavus Active packaging Antifungal activity Cinnamon essential oil SEM FTIR Fungicidal concentration Conidia</p> <p>Among other technical words and expression that can be identified in all the different sections of the material.</p> <p>There is another relevant and common characteristic that can be easily identified in this type of text. This is the implementation of graphics, tables, images and different type of illustrations that are visible in specific sections or stages of the research material but more specifically in the results stage. For example, in this case, these types of graphics are identified in the in the results and discussion stage where the conclusions are better explained and</p>
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(Appendix P)

“Va más con lo que es la materia microbiología ósea va ligado a lo que son bacterias eee ya que los nombres en inglés que más? Microorganismos y ese tipo de cosas” [It is more related to what has to do with the microbiology subject linked to bacteria due to the names in English, what else? microorganisms and that type of stuff] (Appendix H).

61I	Eso tiene que ver con los ritmos de aprendizaje y de estrategias que dependen de cada uno cierto? Bien... aaa seguimos ¿entienden las lecturas en inglés que te dan en clase. Explica ¿cierto?
62I	Sí, no por qué?
63SB	Completamente no
64SC	completamente no algunas sí algunas sí
65I	Ok muy bien
66SB	Es que es muy difícil porque por lo general como son artículos como en este caso científicos
67I	Así es
68SB	Son muy profundos en cambio y uno pues nuestro nivel de inglés sí sabemos pero xxx
69SA	Interpretar
70SC	completamente el texto

(Appendix H)

The exclusive use of narratives genre may limit students to have the opportunity to interact with other types or reading materials. Therefore, it can be suggested the study of different texts that challenge students reading skills when dealing with other types of genres, their linguistic features and variations regarding text structure, vocabulary as well as the purpose of the reading itself. Learners are expected to develop a wide range of fundamental genres. This can be classified in the following: recount, anecdote, exemplum, observation/comment, narrative, description, report, procedure, protocol, explanation, exposition and discussion. (Martin and Rose, 2012, p.55). Genre family is wide but there some basic genres that need to be considered in the academic context where learners are required to study different content areas. Hence, providing college students with the analysis of different genres will foster students' reading skills and improve their reading comprehension too.

From the excerpts related to the microbiology class, it can be concluded that the materials used in this context were complex articles that contained elaborated structures and specific technical vocabulary that demand a deeper knowledge of the topic and the text structure of this type of academic readings. Moyano (2001) states that "introduction, materials, methods, results, discussions and conclusions are the chapters that can be identified in the scientific genre" (p.5). As a consequence, students in this context need tutor's guidance in the different moments of the teaching and learning cycle suggested in the genre based pedagogy. Adequate scaffolding should be offered to students in order to guide learners through the reading process. Resulting in the development of reading comprehension of research articles in the target language. Teacher's support must help student to be more prepared to deal with the text and to develop a successful reading activity. Especially, in the first instance of the cycle called building context where learners need more guidance and scaffolding. For instance, before reading the material students

will get familiar with the text's structure and purpose of this. Feez and Joyce (1998) suggest some building context activities that may have some positive impact on students' first encounters with the text topic or genre. Ideas such as the use of realia, audio visual material and even the participation of a guest speaker referring to the topic being discussed will foster pupils' better understanding of the text and comprehension. On the other hand, the vocabulary emphasis has to be recognized since lack of vocabulary is one of the most important components for reading successfully in L2. (As Stanovich,1987 cited in Grabe, 2009,p.266) refers to the reciprocal relationship that takes place between reading comprehension and vocabulary knowledge. This explains that the more you read the more vocabulary you can learn and the more vocabulary one possess the better reading comprehension this can develop. Thus, vocabulary should be carefully considered when teaching genres, especially when working with academic texts and research articles that are normally full of specific terminologies that belong to a particular field of study.

4.5 Students' perception

In this category, learners' perspectives regarding two specific aspects of the reading class were analyzed.

4.5.1 About teachers' reading methodology

4.5.2 Opinions about the reading material

Subsequently, the results obtained in each category were explained and discussed in an attempt to answer the research question and objectives of this project.

Students' perception about teachers' reading methodology

Some comments were collected from the implementation of the interviews carried out with the students from the English subject. Learners' points of view agreed on the fact that the

English teacher's reading methodology was diverse and also interesting. This will be exposed in the next paragraph. In this specific context, students expressed positive comments towards the variability in the teaching reading methodology in the English class. There may exist different reasons for students' preferences. In this category, students' perceptions are exemplified in the following excerpts.

20 I	Bueno describanme que hacen o que actividades suelen hacer cuando implementan lecturas en clase?
21 S E	Suele ser muy dinámico porque ósea no solos siempre nos entrega el texto y simplemente hay que leerlo si no que vemos un video y entonces en base a los dos respondemos
22 S E	También nos manda hacer de pronto una actividad de escritura que nos permita responder las preguntas que nos está dando pero obviamente agregarle más cosas con nuestras propias palabras

(S.I.Appendix E).

“Si son bastante útiles porque siempre texto, texto, texto, ósea la idea es variar y de pronto a través algunos otros tienen otras formas de aprender por ejemplo algunos les gusta más lo visual de pronto lo auditivo, también los listening que hacen”. [yes they are very useful because text, text ,text, I mean the ideas is the ideas is to vary and suddenly through some other have some different forms to learn. For example, some other like the visual, the auditive and also the listening they made] (S.I.Appendix G)

“si por que las clases son muy dinámicas y entonces como que uno entra y se aburre si no que siempre se mantiene activo”. [yes, because the classes are very dynamic so that one coming into the class and you get bored. On the contrary, you always get active] (S.I.Appendix E).

On the other hand, when being asked about the methodology of the teacher from the microbiology subject, learners expressed some positive and negative opinions about the way how the reading classes are developed. The next excerpts show evidence about this situation.

“Pues según mi opinión puede ser de pronto que son muy estrictas ósea que de pronto uno como le estaba diciendo de pronto uno no tiene el mismo tipo de habilidad para aprender o estudiar el idioma de pronto buscar más estrategias de pronto” [according to my opinion it could be maybe that are very strict. I mean that suddenly as I was telling you, one do not have the same type of ability to learn or study the language. Perhaps to look for more strategies] (S.I.Appendix F).

“Yo siento que es muy bueno porque de alguna u otra manera te ayuda a como a desarrollar esa habilidad de tu entender en inglés que no solo sea en español, sino que hay muchos métodos donde tal vez encuentres hasta más información en inglés que las que te pueden dar en español” [I feel that is very good because somehow it helps you to develop that ability to understand in English, that is not only in Spanish but that there are many methods in which you can find even more information in English that the ones provided in Spanish] (S.I.Appendix F).

Perception about the reading material

. The data collected through the implementation of group and individual interviews referred to the students' points of view in relation to the reading materials used during the reading English class. The genre identified in the English class was focused on the development of narrative texts. This reading material was characterized by the use of simple vocabulary and common grammar structures as well as the relation with the class topic. The next excerpts show evidence in relation to this aspect.

“Textos simples porque la mayoría no tiene un vocabulario tan avanzado entonces la idea es que ellos entiendan en que se va a basar la actividad.” [simple texts because most of them do not

have too advanced vocabulary then the idea is that they understand what the activity is going to be based on] (S.I.Appendix G).

“Son textos bastante entendibles no tienen un vocabulario muy complejo pero también tienen una nivel de exigencia que se supone que ya deberíamos tener de conocimientos previos”[these are very understandable texts. They do not have a very complex vocabulary but these also have a demanding level that we are supposed to have some prior knowledge.] (S.I.Appendix E).

Under other conditions, in the microbiology subject students were assigned with a series of research articles about their field of study. Nevertheless, the difficulties of these texts were expressed by the students when asked in the interviews sessions. The next excerpts provide the evidence about students’ opinions regarding these texts.

“Hay palabras que son muy usuales te las encuentras en cualquier parte en inglés, pero los textos o lo que encontramos más o menos o lo que la profesora nos pone a buscar o que nosotros mismos busquemos son bastante explícitos, son cosas que de pronto, palabras que no manejamos en el día a día” [there are very common words that you can find them everywhere in English, but the texts or the one that we find more or less or the ones that are assigned by the teacher or that we look for are very explicit. These are things that suddenly we do not know and words that we do not handle with daily] (S.I.Appendix H).

“Pues ósea es que por lo general nosotros a simple vista verlos como está en inglés puede ser difícil de entender”[well I mean generally we at a first glance to see how these are in English could be difficult to understand] (S.I.Appendix F).

“Es que es muy difícil porque por lo general como son artículos como en este caso científicos” [It is too difficult because generally these are articles like in this case scientific] (S.I.Appendix F).

Students’ perception about the teaching and assessment methodologies from both tutors was varied at each context. For example, the English tutor implemented a very dynamic methodology that included different activities and resources such as: Audio visual materials, the use of listening activities and writing assignments based on readings studied in class. This fact can be supported by the students’ opinions expressed during the individual and group interviews developed with the students of the English subject. (see appendixes E and G). Moreover, according to learners the texts used in the reading class were simple narrative texts and stories characterized by the use of very basic vocabulary related to learners’ everyday lives. Students’ points of view about the materials used indicated that these types of texts were easy to be understood. As a conclusion, it can be said that the English teacher’s methodology seems to motivate students towards the development of the reading class since students’ opinions are positive and also seem to agree with the methodologies for L2 reading teaching. Nevertheless, the materials being implemented tend to have a very simple level. Consequently, students may not really be challenged enough to move to a higher thinking level, neither make progress in their reading skills. Students require to be supported but also challenged appropriately in order to help them grow academically by improving their abilities. As Walqui (2006) based on Vygotsky’s sociocultural theory (SCT) states “learning is only useful if it is ahead of development, that is, if it challenges learners to think and act in advance of their actual level of development”(p.161).

A different situation took place in the microbiology class, in this context the materials studied were research and academic articles that were complex and that did not match students' reading skills. In addition, the use of texts that stimulate students' cognitive, reflective and thinking skills should be implemented. These types of materials will lead learners to improve their reading abilities by providing challenging texts that will help them to grow different types of genres and complex reading levels. On the other part, it is not adequate either to work with impossible texts that are far beyond of their current reading skills that in consequence will frustrate the reading process. This situation is not coherent with the scaffolding theory proposed by Bruner that supports that students need to be accompanied with the adequate guidance to reach to the ZPD (Zone of proximal development) Hence, the reading materials provided to students should be carefully selected considering learners' level but at the same time, these texts have to encourage learners to move from their actual developmental level to the ZPD. According to Walqui (2006) "Scaffolding is closely related to the ZPD. In fact, it is only within the ZPD that scaffolding can occur."(P.163). This two concepts about reading are directly connected considering that is through the scaffolding activities provided by the teacher or another competent partner that the individual is able to reach to a higher level. This is where real learning takes place based on the social interaction with others that the students are able to internalize those experiences and to produce meaning and knowledge. Therefore, the common interaction among individuals proposed in Vygotsky's sociocultural theory is the basis for referring to ZPD where "cognitive development results from social and interpersonal activity becoming the foundation for intrapersonal functioning, and that this process involves internalization."(Lantolf and Thorne, 2007, p.207). (hay que meter a este autor con esa citacion en la parte de zpd para poder tenerlo en esta parte este es lantolf, ya t comparti el docuemtno en drive ahi esta la pagina

al igual que walqui 2006 que habla de scaffolding) According to Walqui (2006) “Scaffolding is closely related to the ZPD. In fact, it is only within the ZPD that scaffolding can occur.”(P.163).

Chapter 5. Conclusions

In this chapter, it will be presented the conclusions obtained from this research project. For this purpose, it is important to refer to the research question that led this study and which was based on the description of how the L2 reading was taught and evaluated across the curriculum in a public university in the coast area of Colombia. This project contributes to this context since with the implementation of the study it was possible to have access to information that describes the evaluation and teaching methodologies, as well as the features of the reading materials that are being applied with the objective of teaching L2 reading at a university level. In this case, the research process was carried out in the food Engineering program at a public university. Students in this context are expected to complete four different English levels as an academic requirement. Apart from this fact, students are also exposed to research materials and articles in L2, in particular subjects along the career. This is an indicator of the need that students in this context have regarding the L2 reading skills. As it was just mentioned, there are some particular areas such as microbiology that expose learners to the reading and analysis of these academic articles. Consequently, it can be said, that the results obtained from this research serves as an alternative to focus on the weaknesses that could be identified about the teaching of the reading skill. Besides, the development of the reading skill in this context can be fostered by making a contrast between the teaching methodologies being implemented in the English subject and the others areas.

In the first place, regarding the teachers’ practices for teaching L2 reading, it was possible to notice that there is a great difference in the analyzed subjects. For instance, in the English

reading session the, the class was initiated by the teacher having a contextualization stage, it was in this phase that the mentor made use of some pre- reading activities that helped learner linking possible background information with the topic of the presented reading. It was also identified the way how students' participation was fostered by questions that elicited learners' opinions and experiences about the topic discussed. The teachers' practices were also added guided by the use of readings, audio – visual material, apart from listening activities supported the reading class. On the other hand, the microbiology teacher only used the class to evaluate students reading comprehension whereas, the interaction in the English class was developed partially in L1 and L2 making more emphasis on the use of the target language for interacting. On the contrary, the use of English was not perceived in the microbiology class, which is a fact that would not contribute to the development of learners' language neither reading skills.

Differences were also identified in relation to the types of texts used in both areas; the exclusive use of specific genres was noticed in these contexts. The type of structure, vocabulary, linguistic characteristic and level of difficulty of narrative texts from the English class differed from the research academic articles assigned by the teacher in the microbiology subject. Therefore, discrepancy was evidenced when it is referred to the types of texts used by both teachers. since the materials used in the English class were based on the narrative genres that are characterized by the use of everyday language , not complex structures and simple vocabulary. On the contrary, the research and academic articles applied in the microbiology subject tended to be more complex regarding the linguistic features, content and grammar structures commonly found in these types of reading materials. As a result, students are not exposed to a variety of texts that would help them study and recognize different document structures. On the contrary, these are limited to the use of specific genres in class.

Evaluation practices presented in the studied subjects were determined by the implementation of summative activities that focuses on assigning scores based on students' final products and not on the development of the L2 reading classes. Besides, the absence of a formal reflective feedback that provides learners with recommendations to improve their reading skill was evident in both cases. The use of constant questions about the texts being studied were the most common ways to evaluate students' reading comprehension and understanding. Also, at both observed subjects teachers resorted to the implementation of summative activities that provided learners with a numerical score based on their performance. For instance, in the English subject, the teacher asked learners to compose a paragraph about a memory or past experience this had. Students were provided with specific requirements to carry out this activity. On the other hand, the microbiology mentor provided learners with some research articles that students presented in an oral and written manner. Nevertheless, all the interactions carried out during the microbiology class were in L1 resulting in a poor learning experience for the students.

As a conclusion, it can be said that the lack of formative assessment would not contribute to identify learners' reading issues and the way how these can make adjustments that enhance the reading activity and the L2 reading skills.

Regarding students' perception about teaching methodologies, pupils referred to this aspect in a positive manner by explaining that the English classes were dynamic and varied. Besides, it was also commented by the students that the teacher always implemented different activities and materials that were used in class and that helped students to understand and to be more engaged in the development of the topic of the text studied. This was the case of the English reading class, in which the tutor started the class by showing student a video directly linked with the topic of the class and the reading material. This initial contextualization stage and

the activities developed in this instance seemed to have promoted participation and fostered students' understanding. In contrast, according to some of the students interviewed, the microbiology teacher's methodology was strict. Hence, differences were also identified in relation to students' perception about mentors' practices, which indicated that there is not a concrete L2 reading methodology for teaching in the program.

About the limitation in this study some issues were presented. For instance, at the beginning of the research, a teacher refused to continue with his participation in the project. Therefore, some changes were made about the courses being observed. Nevertheless, it was possible to count with the participation of another English teacher from second semester. This was available and willing to be part of the research. This was a fact that needs to be mentioned since these difficulties may have a direct negative effect on the normal development of the project. Apart from this, another issue was presented in relation to the academic agenda of public colleges in Colombia. A national strike that took place in the country forced universities to stop classes and the semester. In consequence, some observations and interviews were not possible to be implemented on the scheduled times. As a result, the research process took more time than the expected so that all the information needed could be gathered.

Finally, it can be expressed that for future research projects to be implemented regarding the improvement of the reading skills, the development of teaching reading and an evaluation methodology focused on the genre based approach should be considered, in order to implement the most appropriate assumptions defined in this theory, that allow teachers and learners to reflect on the importance of texts use. A reading methodology that focuses on the study and analysis of different types of genres that university students Asked to read in their academic contexts. Besides, the implementation of the teaching and learning cycle that would guide

learners through a series of scaffolding activities will allow students to be better prepared to deal with texts and to connect reading skills to the productive writing abilities that students are expected to develop at a tertiary education.

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Appendixes

Appendix A. Informed consents



CONSENTIMIENTO INFORMADO
Septiembre 13 de 2018

Título del estudio: A descriptive view of the teaching and evaluation of L2 reading

Asesora: Teresa Benítez.

Investigador principal: Aldemar Arturo Hernández Fajardo

Entidad donde se desarrolla la investigación o patrocinador.

Universidad de Córdoba

Naturaleza y Objetivo del estudio.

Analizar las prácticas de enseñanza de lectura en tres asignaturas disciplinares de una universidad del Caribe colombiano, las características de los textos que leen los estudiantes en el marco de las asignaturas así como la de los estudiantes sobre la metodología empleada para la enseñanza de la lectura.

Propósito

Este consentimiento tiene el propósito de solicitar su autorización para contar con su participación en este estudio.

Procedimiento

Si usted acepta participar se le solicitará participar en una entrevista, suministrar a los investigadores copia de los documentos pertinentes al estudio: planeaciones, rúbricas de evaluación, textos producidos por los estudiantes, textos modelo. Además, le pedimos aceptar la grabación en video de las clases en las cuales usted imparta instrucción acerca de procesos y productos de escritura en su asignatura, así como utilizar materiales trabajados por los estudiantes en el marco de la asignatura escogida.

Riesgos asociados a su participación en el estudio

Esta investigación tiene un nivel de riesgo mínimo: Actividad puramente observacional para propósitos investigativos y pedagógicos orientados al mejoramiento de los procesos de enseñanza aprendizaje.

Beneficios de su participación en el estudio

Los estudiantes participantes en esta investigación no obtendrán un beneficio directo. Sin embargo, los resultados obtenidos del estudio podrán generar beneficio a futuro para muchos estudiantes del caribe colombiano porque pueden redundar en mejores prácticas de enseñanza y evaluación de la lectura en la universidad.

Voluntariedad

Su participación en la investigación es voluntaria. Si usted decide no participar o retirarse del estudio en cualquier momento, aun cuando haya iniciado su participación en él, puede hacerlo sin que esto ocasione una sanción o castigo, o en general, alguna consecuencia negativa.

Confidencialidad

Si usted decide participar, garantizamos que toda la información suministrada será manejada con absoluta confidencialidad; sus datos personales no serán publicados ni revelados; el investigador principal se hace responsable de la custodia y privacidad de los mismos.

Compartir los resultados

Los resultados de la investigación serán compartidos en tiempos pertinentes en publicaciones, revistas, seminarios, conferencias, etc., pero la información personal de los colaboradores siempre permanecerá confidencial.

Conflicto de interés del investigador:

El investigador o investigadores no tienen conflicto de interés con los participantes.

Contactos:

Usted podrá contactar al investigador principal o a los co-investigadores mediante correo electrónico, y/o teléfono especificados abajo.

Investigador:**Nombre y teléfono de contacto:**

Aldemar Arturo Hernández Fajardo (304 586 8961)

Correo electrónico del investigador:

1. aldeseaz@hotmail.com

He entendido la información que se expone en este consentimiento y me han respondido las dudas e inquietudes surgidas.

CONSENTIMIENTO INFORMADO

A descriptive view of the teaching and evaluation of L2 reading 2018

Descripción del Proyecto

Usted ha sido invitado a participar en un estudio conducido por el docente Aldemar Arturo Hernández Fajardo, cuyo objetivo es analizar las metodologías para la enseñanza y evaluación de la lectura en inglés, y así mismo estudiar las características propias de los textos empleados en clase. Como participante de la investigación a usted se le solicitará realizar las actividades que se especifican en la siguiente tabla.

Actividad	Tiempo de Duración (aproximado)	Rol como participante (tipo de participación)
Participar en entrevistas relacionadas con su percepción acerca de las metodologías de enseñanza y evaluación de la lectura en inglés.	Una sesión de clase (una hora)	Un rol activo en la aplicación de la o las entrevistas previstas a ser desarrolladas con los estudiantes.
Participar de registro audiovisual de experiencias de clase	Semestre 2018- (entre septiembre y noviembre de 2018)	Participación activa del estudiante en actividades de aula que requieran registro audiovisual.

Una vez completada la investigación se destruirán todas las fuentes de datos, notas y otros documentos relacionados. Los datos de la investigación serán recogidos por Aldemar Arturo Hernández Fajardo y serán utilizados únicamente en el contexto del proyecto previamente estipulado. La investigación se desarrollará en los predios de la Universidad.

Riesgos y Beneficios

No existen riesgos asociados a la participación en este estudio. Dado que los instrumentos, entrevistas y observaciones y el análisis de documentos son parte del desarrollo de la clase, la incomodidad o ansiedad es normal en lo relacionado con la participación en actividades de aula. De cualquier forma toda la información será confidencial. Su participación en este proyecto es voluntaria: tiene el derecho de retirarse en cualquier momento. Los beneficios de participar en este proyecto incluyen los siguientes: la oportunidad de contribuir a la reflexión en base a la forma como se desarrolla la habilidad de lectura en Inglés en el programa en aras de contribuir en su formación académica de los estudiantes.

Remuneración

No habrá remuneración por participar en el estudio.

Almacenamiento de datos para proteger la confidencialidad

Su identidad y cualquier otra información que lo pueda identificar no serán reveladas en ninguna presentación pública del estudio. La información es completamente confidencial y todas las fuentes de datos se mantendrán en un lugar seguro en el Departamento de Idiomas de la universidad del Norte (Barranquilla – Colombia).

Tiempo

El tiempo de participación de su parte que requiere el proyecto es de un semestre académico comprendido en el período 2018. El tiempo aproximado para cada una de las actividades requeridas se especifica en el primer apartado de este documento.

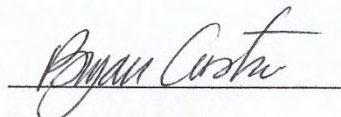
Uso de los resultados

De los resultados de este proyecto se presentarán en forma de (a) informes a comisiones institucionales de la Universidad del Norte (b) ponencias a congresos, encuentros o reuniones nacionales e internacionales (c) artículos para revistas indexadas (d) capítulos de libros y/o (c) libros.

Autorización

Estoy de acuerdo o acepto participar en el presente estudio.

Para constancia, firmo a los 13 días del mes de Septiembre del año 2018



Firma del participante

Declaración del investigador

Yo certifico que le he explicado a esta persona la naturaleza y el objetivo de la investigación, y que esta persona entiende en qué consiste su participación, los posibles riesgos y beneficios implicados.

Todas las preguntas que esta persona ha hecho le han sido contestadas en forma adecuada. Así mismo, he leído y explicado adecuadamente las partes del consentimiento informado. Hago constar con mi firma.

Nombre del investigador principal. _____

Firma _____

Fecha (dd/mm/aaaa) _____

Universidad del Norte

DERECHO DE LOS PARTICIPANTES

Investigadores principales Aldemar Arturo Hernández Fajardo

Título del Proyecto A descriptive view of the teaching and evaluation of L2 reading.

- He leído y comentado el documento titulado *Descripción del Proyecto* con los investigadores principales.
- He tenido la oportunidad de formular preguntas respecto a los propósitos y procedimientos del estudio.
- Mi participación en el estudio es voluntaria. Puedo decidir no participar o retirarme en cualquier momento sin perjuicio futuro alguno.
- Los investigadores principales pueden retirarme del estudio de acuerdo a su discreción profesional.
- Si durante el curso del estudio se da información nueva que se pueda relacionar con mi disposición para continuar mi participación, los investigadores principales me la harán saber.
- Cualquier información que se derive del estudio que me identifique personalmente no podrá ser divulgada sin mi consentimiento explícito.
- He recibido copia de los documentos *Descripción del Proyecto* y *Derecho de los participantes*.
- Con mi firma expreso mi decisión de participar en el proyecto.

Si usted tiene alguna pregunta o duda respecto a este trabajo en que se le está invitando participar puede contactarse con Aldemar Arturo Hernández Fajardo profesor de Departamento de Inglés en el siguiente número telefónico: 304 586 8961 o la Universidad de Córdoba a los números 786 03 00 / 786 09 20, carrera 6.No. 76 - 103 Montería - Colombia.

CONSENTIMIENTO INFORMADO			
A descriptive view of the teaching and evaluation of L2 reading.			
NOMBRE DEL PARTICIPANTE	CÓDIGO	FECHA	FIRMA
Karol Andrea Polo Martínez		13-09-2018	Karol Polo
Luisa Montes Delgado		13/09/2018	Luisa M.
Estefanía Cive Cuellar		13/09/2018	Estefanía Cive
Jose Juan O. Balan		13/09/18	JOB
Aura María Pérez Álvarez		13/09/18	Aura Pérez
Adriana Arico Madera		13/09/18	Adriana Arico M
Esteban Polo Cortes		13/09/18	Esteban
Bryan Hloknitz		19/09/2018	Bryan
Cristian Ochoa		13/09/2018	Cristian Ochoa
Jaison Moreno		13/09/2018	Jaison Moreno
Duvan Reyes C.		13/09/2018	Duvan R.
William Roberto R.		13/09/2018	William R.
Leonela González R.		13/09/2018	Leonela R.
Ana María Yáñez		13/09/2018	Ana María
Stepany Abad Jiménez		13-09-2018	Stepany A.
Nohelia Bastilla Tapia		13-09-2018	Nohelia
Luzvis García Ramos		13-09-2018	Luzvis García R.
Joaquín Esquivel V.		13-09/2018	Joaquín Esquivel
Maria Camila Melo A.		13-09-2018	Maria Melo
Estefany Paola Pérez A.		13-09-2018	Estefany
Julian Camilo Sierra P.		13-09-2018	Julian Sierra
Carolina Sotz Pacheco		13-09-2018	Carolina Sotz
Antonio Espinosa		13-09-2018	Antonio O
Luis Andrés Montes Peto		13-09-2018	Luis

FIRMA DEL INVESTIGADOR:

FECHA:

Appendix B. Teachers and students interviews format**Entrevista Docentes**

La siguiente entrevista será aplicada a los docentes del programa de ingeniería de alimentos de la Universidad de Córdoba. Los docentes seleccionados para el desarrollo de esta entrevista pertenecen a las asignaturas de inglés 2 y microbiología de 4 semestre.

1. ¿Considera usted que la lectura de textos en inglés es importante para su clase?
2. ¿Le da a leer textos en inglés en su clase a los estudiantes?
3. ¿Qué tipo de textos les solicita?
4. ¿Cuál es el objetivo de leer estos textos?
5. ¿Qué aspectos considera relevantes o importantes al momento de seleccionar un texto?
6. como trabaja la lectura de estos textos en clase
7. ¿Ha identificado problemas de comprensión de textos?
8. ¿Cómo maneja usted estos problemas de comprensión lectora
9. ¿Evalúa usted la lectura de estos textos?
10. ¿Cómo evalúa? ¿Que se les pide hacer con el texto?
11. ¿Qué tipo de actividades o materiales utiliza para evaluar para evaluar?

Entrevista Estudiantes

Esta entrevista será realizada a los estudiantes que pertenecen al programa de ingeniería de alimentos, se estará trabajando con la ayuda y cooperación de los estudiantes que cursan las asignaturas de inglés II y microbiología de cuatro semestre.

1. ¿Su profesor /a de _____ les pide leer textos en inglés?
2. ¿Qué tipo de textos les pide leer?
3. ¿Para que les dan a leer estos textos?
4. ¿Piensas que se cumple ese objetivo?
5. ¿Qué hacen normalmente con estos textos en clase? Describe los pasos que normalmente sigue el docente en la clase cuando trabaja con textos?
6. ¿Qué opinas de los textos en inglés usados en la clase _____?
7. ¿Además de los textos en inglés te dan otros materiales complementarios para acompañar o facilitar la lectura de estos textos? ¿Cuáles?
8. ¿Qué opinas de estos materiales complementarios? ¿te parecen útiles?, ¿fáciles? ¿difíciles?
9. ¿Entiendes las lecturas en inglés que te dan en la clase? Explica
10. ¿Evalúa el profesor las lecturas en inglés que hacen en la clase? ¿Cómo?
11. ¿Te parece necesario que te den a leer textos en inglés en la clase por qué?
12. ¿Qué piensas de la metodología empleada por el docente para trabajar las lecturas en inglés?

Appendix C. Transcript of interview to the english teacher

INTERVIEWS TRANSCRIPTION FORMAT

INTERVIEWED TEACHER:

Interview # 1

Semester: 2 (second)

Subject: English 2

Program: Food Engineering

Date: September 23 / 2018

Conventions:

I: Interviewer

T/S: Teacher

(xxx) : inaudible, not clear

.... : Silence

TURNS	QUESTIONS AND ANSWERS
1 I	Bueno, ok bien teacher entonces aaaa te voy a leer un poco sobre el objetivo. Esta entrevista se realiza con los docentes que pertenecen al programa ingeniería de alimentos y se está trabajando obviamente con su cooperación y se va a realizar con docentes pertenecientes a Ingles dos que es tu caso, microbiología de cuarto semestre y química de alimentos de sexto semestre. Entonces empecemos con la primera pregunta. Teacher, que piensas sobre la lectura de textos en Ingles? ¿piensas que es importante para tu clase?
2 T	Si, obviamente, me parece que es muy importante porque normalmente los estudiantes al lenguaje que están expuestos son normalmente al lenguaje de textos, al lenguaje escrito más que todo. Ellos casi o tienen la oportunidad de interactuar con el lenguaje hablado (xxx) : inaudible, not clear no hay gente con quien interactuar ni comunicarse de manera oral y más que todo el inglés que ellos usan siempre, casi siempre va ser escrito obviamente como ellos están en un ambiente muy académico, los textos cumplen un papel muy importante porque los ayudan a ellos a estudiar, a encontrar información, entonces los textos, en cuanto en este ambiente académico siempre van a ser muy importantes porque se trabajan (xxx) : inaudible, not clear
3 I	Listo ok ¿qué tipo de textos les solicitas leer a tus estudiantes?
4I	¿Que que tipos de textos? que?
5 I	Si con los que trabajan con los que trabajan en clase
6 T	Normalmente son textos muy enfocados en el aprendizaje del idioma más que textos

	académicos de su arias, porque normalmente los textos académicos de aria por qué y lo he hecho son muy complejos para ellos y todavía no tienen el nivel cognitivo para entenderlos muchas veces ni tampoco tienen la comprensión lectora incluso ellos traen muchas deficiencias en comprensión lectora incluso en su idioma nativo en el español y cuando para el inglés es mucho peor entonces siempre enfoco los textos en más que sean muchos más fáciles sobre temas cotidianos que ellos puedan manejar como el texto que vimos en clase que ellos tienen más o menos ideas de esas cosas y pues lo manejan y se les hace un poco más posible de entender (xxx) : inaudible, not clear.
7 I	Bien, por ejemplo que aspectos consideras importantes al momento de elegir un texto para la clase?
8 T	Bueno lo primero que todo es que el texto esté relacionado con la unidad del libro que esté trabajando e que el texto tenga vocabulario que se a que se qué este de pronto en un nivel que los estudiantes pueden entenderlo y que no incluyan demasiadas palabras desconocidas que le hagan muy difícil de entender o entender las ideas (xxx) : inaudible, not clear.y que no seas muy larga y que no vaya a tomar mucho tiempo en la clase (xxx) : inaudible, not clear.
9 I	Listo, por otra instancia tenemos cuando se usan estos textos por lo general que se les pide hacer o cuales son esas actividades que sueles aplicar en base a los textos?.
10 T	Bueno las actividades que normalmente hago siempre son muy al nivel literal del texto que es como encontrar cosas en el texto al nivel literal y y de vez en cuando de inferencia de texto de inferir cosas pero muy de vez en cuando pero normalmente casi siempre es cosas muy literales del texto. encontrar cosas que están dentro del texto y responder preguntas con ellas.
11 I	Bueno cuando identificas un problema de comprensión lectora o un problema con el entendimiento de los textos que haces para tratar de solucionar los problemas en los estudiantes?
12 T	Aaaah bueno
13 I	O en tu experiencia ¿qué problemas manifiestan los estudiantes?
14 T	Bueno normalmente el problema que he visto lo que he visto lo que he visto es que ellos normalmente el nivel lector de ellos se queda como en la parte literal siempre o casi siempre , ,uy pocas veces son capaces de inferir cosas demasiados complejas mira que en el texto ahora vimos cosas que ellos no pudieron inferir de ciertas cosas básicas que decían ahí y se equivocaron en las respuestas de algunas preguntas entonces normalmente cuando se les da texto que son muy complejos o muy densos tienen muchos problemas para inferir cosas ósea casi siempre ellos se quedan en un nivel literal ósea de lo que dice en el texto y encontrar palabras ósea si les puedes decir que significa esta palabra aquí o que quiere decir esta cosa de aquí o encuentren la respuesta de esta pregunta en el texto y ellos (xxx) : inaudible, not clear. Pero cuando a inferir o hace una lectura crítica de algo les es muy difícil muy difícil pues entonces

	trato de muchas veces no traer ese tipo de textos que se les dificulte a ellos porque la clase se para ahí quedan estancados ahí y entonces les es muy difícil entonces la clase se centra más en hacerlos tratar de entender que es lo que quiere decir las ideas como una comprensión lectora en vez de llevar el buen objetivo de la clase que es siempre cumplir la meta de la unidad.
15 I	Ok Listo teacher bien, aparte de ese problema de inferencia. ¿Cierto? ¿Logras identificar según tu experiencia otros problemas relacionado con la comprensión lectora?
16 T	EEE Los muchachos no leen, ósea no leen normalmente textos. Normalmente la costumbre o por ejemplo los comportamientos de ellos es normalmente está relacionado con las redes sociales, ósea lo que está en sus redes sociales es lo que ellos leen, muy pocos leen libros o artículos que pasa este no tienen una un un comportamiento lector regular entonces no leen entonces cuando están leyendo se les dificulta mucho leer entonces se da cuenta uno por qué les toma mucho tiempo para leer un párrafo que es muy pequeño les toma 15 20 minutos para leerlo cuando un cualquier persona que lea normalmente se demora mucho menos unos tres cuatro minutos
17 I	Entiendo, ok teacher entonces ya pasamos a la parte de la evaluación como manejas tú la evaluación en referencia a los textos sí que tipo de actividades se hace o se les pide a los estudiantes para ser evaluados en relación a la lectura?
18 T	AAA Bueno este varias cosas primero, por ejemplo en lecturas de comprensión preguntas de comprensión se les evalúa si entendieron ciertas partes ya sea de inferencia o partes también literal que están ahí si encontraron tal parte del texto que se les está preguntando y como vistas en clase en que parte del texto porque muchas veces lo que hacen por ejemplo es que responden las preguntas o uno de los compañeros responde las preguntas y le dice al otro y ellos no saben de dónde salió esa información entonces cuando uno les pregunta si tienen la respuesta correcta pero no saben de dónde salió. Entonces siempre que me responden les pregunto las respuesta y le digo que me digan en que parte del texto esta para saber que ellos si están leyendo y si están buscando la información y si la encontraron.
19 I	Eee preguntas de vocabulario normalmente les evalúas vocabulario?
20	En la parte gramatical de los textos también hago que la encuentren que estén pendiente de ella que subrayen ok eso es más que todo lo que les evaluó.
21	Bien yyyy por ultima instancia que materiales utilizas para evaluar algo extra si ósea que acompañe al proceso de evaluación de la lectura no sé si ..
22	Eee de evaluación de la lectura normalmente con los textos que están a veces en el libro cuando los dejo ara la casa les dejo cosa de tarea no les pongo algo que ellos se puedan copiar que ellos se puedan copiar si no que les digo leen sobre esto y la próxima clase les voy hacer unas preguntas así ellos tienen que leer y no se pueden copiar de pronto la verdad ellos se ponen a leer y la próxima clase obviamente en clase ya les hago preguntas

23	Por ejemplo agrego esto que a partir de la clase y la lectura que fue el tema principal de memories y todo esto el pasado simple les mandaste una evaluación ahora como una especie de evaluación
24 T	Evaluación si si de que ellos hicieran si obviamente ellos mismos un texto para ver que tal escriben la próxima clase vamos a seguir trabajando con esto porque son tres unidades de pasado ok entonces con el texto que ellos tienen la próxima clase vamos a empezar hacer una actividad en grupo que va hacer sobre corregirlos textos de ellos y las cosas que tienen y ver si estaban pasado las cosas y corregir las cosas que ellos tienen.
25 I	Ok bueno teacher básicamente esas serían las preguntas como te das cuenta desde el inicio hasta la evaluación del proceso lector entonces antes que nada gracias. thank you for your cooperation my friend.

Appendix D. Transcript of interview to the microbiology teacher

INTERVIEW TRANSCRIPTION FORMATS

INTERVIEWED TEACHER:

Interview # 5

Semester: 4 (Fourth)

Subject: Microbiology 4

Program: Food Engineering

Date: January 28 / 2019

Conventions:

I: Interviewer

T/S: Teacher

(xxx) : inaudible, not clear

.... : silence

TURNS	QUESTIONS AND ANSWERS
1 I	Ok listo teacher primero que todo muy amable por contar con usted... en esta entrevista?

	Vamos a empezar con la primera pregunta. ¿Considera usted que la lectura de textos en inglés es importante para su clase?
2 T	Creo que es fundamental en el momento actual en la educación superior
3 I	Mmm
4 T	Uno de los aspectos evaluados en la prueba saber siempre ha sido el aprendizaje del inglés de echo esa ha sido una prioridad en el departamento de ingeniería de alimentos tratar de introducirles a los estudiantes estrategias que tengan que ver con el manejo del idioma porque la universidad de Córdoba de forma tradicional ha obtenido puntajes bajos en todos los programas debido a la a la ausencia creo yo de nosotros mismos los docentes que obviamente no le podíamos transmitir a los estudiantes. Entonces no es importante es fundamental.
5 I	Excelente, bueno muy bien vamos a pasar a la segunda pregunta ¿le da a leer textos en ingles en su clase a los estudiantes?
6 T	Si claro es importante aclarar que mi materia es de 4 cuartos semestre
7 I	ok
8 T	Entonces los estudiante por el momento que llegan a mí, no tienen el conocimiento de lo que es la ciencia de los alimentos que es digamos la base del programa de ingeniería de alimentos. Sin embargo microbiología general que es mi materia este digamos yo los yo los inmerso en el mundo de que hay mucha literatura académica escrita en inglés y el primer encuentro que tiene conmigo es en un taller que yo les hago eee donde ellos pueden bajar por medio del uso de base de datos académicas
9 I	Aja
10 T	Donde pueden bajar un artículo en ingles a su libertad lo que yo les condiciono es con un tema, les coloco un tema que tiene que ver con microbiología y ellos comienzan a descargar eso me permite los dos objetivos, que comienzan a conocer lo que son las bases de datos y lo segundo es que empiecen a leer literatura relacionada con la temática de microbiología.
11 I	Excelente, me parece muy acertado eso bien pasemos a la siguiente. ¿Qué tipo de textos les solicita?, bueno pienso que ya respondió eso
12 T	Si si artículos investigativos
13 I	Si exactamente, enfocados a la carrera
14 I	Bien, cual es el objetivo de leer estos textos? También pienso que me respondió en la ...
15 T	Si esas dos cosas que manejen la base de datos y que empiecen con la terminología del ingles
16 I	Exacto si con los conceptos básicos y todo esto. Muy bien ¿Qué aspectos considera relevantes o importantes al momento de seleccionar un texto?
17 T	Eee... por ejemplo en el taller el cual les estoy colocando ahora actualmente que es xxx en ingles ya yo no les puse que fueran a buscar en la base de datos si no que les coloque yo un artículo de una temática que estábamos viendo en este momento
18 I	Exacto
19 T	Yo trato de buscar ese tema que esté relacionado con alimentos los descargo sobre todo me

	interesa que tenga un componente eee investigativo sí que describan una metodología para que ellos puedan explicar en lo que tiene que ver con la aplicación de los conocimientos microbiológicos ese proceso que desarrollaron esos investigadores y por los cuales escribieron ese artículo.
20 T	Ok si la materia es microbiología
21 I	Microbiología general si
22 I	Así es muy bien gracias teacher vamos a seguir mmm como trabaja la lectura de estos textos en clase que hacen los estudiantes que se les pide?
23 T	Si en el primer taller que les pongo a principio de semestre que te comentaba antes de las bases de datos
24 I	mmm
25 T	En alguna ocasión yo los ponía a sustentar, es decir que hicieran el taller y los colocaba en grupos de dos y luego los llamaba en clase y les decía que me explicaran que me explicaran lo que hicieron, me lo explican obviamente en español. El análisis y me explican en español lo que aprendieron de las xxx pero eso empezó a generar muchos inconvenientes porque ellos no ósea los artículos son muy complejos para lo que ellos son capaces de entender de la materia este es el segundo momento en este les estoy pidiendo un taller cuando ya estamos terminando temática ósea que entre ellos deben tener mayor capacidad para entender el artículo y por ende poderlo explicar.
26 T	Si claro obviamente no es el principio del semestre
	Cuando se los pongo en el primer taller estamos empezando
27 I	Exacto
28 T	Pero ahora ya estamos en el 60, 70% ose a que ahí ahora deben tener más capacidad para xxx
29 I	Un conocimiento previo
30T	Correcto
31 I	Ok muy bien, bien teacher ahora ¿ha identificado problemas de comprensión de textos? Que cuando les pide leer en su clase.
32T	Si absolutamente
33 I	Si totalmente ya lo manifestaba anteriormente
34T	Bueno primero me imagino y tampoco lo critico que ellos usan las herramientas de traducción automáticas xxx para los artículos verdad, pero obviamente sabemos que eso no es un lenguaje técnico, que eso traduce las palabras tal como las comprende y no de pronto de la forma adecuada como son usadas en las ciencias entonces cuando yo veo lo que escriben o lo que me dicen obviamente me doy cuenta de eso
35T	Hay muchas cosas que les critico porque no saben interpretar la información a pesar de que ya tienen un conocimiento para poder entender
36I	Ok Entonces eso sería problemas de comprensión lectora la interpretación correcta.
37T	Si muchísimos muchísimos
38I	La interpretación correcto? Eeee entonces pasemos a otra ¿Cómo maneja usted estos problemas de comprensión lectora que puede brindarles a los estudiantes como mm para tratar de

	solucionarlos
39T	Eee bueno en mi caso particular para el problema del idioma ingles yo no brindo ninguna opción de igual cosa por que como nosotros no somos los del aria
40I	Exactamente
41T	Como vamos hacer capaces de decirles no lo hagas pero lo que tratamos de hacer es siempre estar tratando de darles información para que lean pero sinceramente pienso que la mejor forma de hacer un aprendizaje de estos es enfrentándolos a la realidad xxx
42I	Teniendo la experiencia exactamente
43T	Si por que el poquito ingles que yo se lo aprendí igual ósea yo veía películas en inglés y colocaba los subtítulos en inglés para empezar a asociar texto con audio así así lo hemos aprendido entonces pienso que la mejor forma de hacerlo con ellos es igual enfrentándolos para que se vayan familiarizando con la terminología
44I	Total muy bien teacher pasemos a la parte de la evaluación. ¿Evalúa usted la lectura de estos textos?
45T	Pues si evaluó la comprensión y que puedo evaluar cuando ellos me lo explican o cuando leo el trabajo en español del texto traducido al inglés, claro se nota que hay algunos que hicieron un gran esfuerzo por tratar de interpretar la lectura pero hay otros que se nota que es una pasada por un traductor y la plasmada en una hoja lo cual evidentemente no es lo que uno quiere
46I	Exactamente eso responde entonces un poco a la pregunta ¿cómo evalúa? ¿Que se les pide hacer con el texto?
47T	Si yo generalmente entonces les pido es un análisis del articulo verdad? En algunos casos les pido conclusiones por ejemplo en el taller de hoy les pedí fue vocabulario en ingles
48I	A ya ok excelente
49T	Que sacaran el vocabulario técnico en ingles
50I	Muy bien
51T	Eee y pues eso es lo que estoy viendo que tanto lo sacaron y que también puede estar
52I	Listo teacher pasemos ahora a la pregunta 12 que nos dice ¿qué tipo de actividades o materiales utiliza para evaluar para evaluar?
53T	Material ¿a qué te refieres con esa? No entendí
54I	Bien este en algunos casos los docentes usamos para hacer una evaluación herramientas como rubricas si si exactamente a veces si es necesario si no no
55T	No no exactamente el criterio evaluativo no tiene nada que ver con una estrategia metodológica especifica
56I	A bueno ok muy bien listo, y listo teacher por ultimo
57T	Si me gustaría acotar que nosotros en algún momento un compañero de nosotros nos sugirió y lo hemos estado haciendo poco a poco que en cada clase las diapositivas que colocamos por lo menos los títulos de de la temática que tu desarrolles en la diapositiva los colocarás en ingles tanto en español como en inglés. Yo eso lo hago en algunas. A veces se me olvida y me

	acuerdo y digo bueno vamos a buscar la palabrita de todos modos para que el estudiante se vaya relacionando con los términos básicos del contexto
58I	Ok muy bien
59T	Y yo pienso que esa es una estrategia muy validad que la deberíamos implementar los profesores en cada materia porque eso no nos cuesta nada
60I	Seguro seguro
61T	Por ejemplo si yo voy a explicar este tema y este tema tiene cinco subtítulos tiene estas palabritas claves y saca uno el vocabulario mínimo en su clase pero lo coloco en lo que estoy diciendo. Por ejemplo, si yo voy a dar hongo le coloco al lado fungi pero lo coloco en inglés para que ellos vean eso es tal cosa
62I	Para ellos vayan familiarizando
63T	Familiarizándose con los términos básicos obvio uno no va xxx
64I	Y como dice usted teacher a veces no es tan complejo
65T	Para nada
66I	Traducir un titulo
67T	Para nada pero nosotros sí sabemos interpretar que palabra debo colocar ahí el estudiante no
68I	Correcto bien muy bien teacher eee pus bien teacher básicamente eso seria
69T	Era eso
70I	Era todo sobre la entrevista a los docentes muy amable teacher gracias.
71T	Entonces ¿no sé si pasamos a la de los estudiantes o los entrevistas a ellos allá si será ahora?
72I	Si ...

Appendix E. Transcript of interview to the english students (focus group)

INTERVIEWS TRANSCRIPTION FORMAT

INTERVIEWED STUDENTS: Food Engineering students. (FOCOUS GROUP)

Interview # 3**Semester: 2 (second)****Subject: English 2****Program: Food Engineering****Date: September 23 / 2018****Conventions:**

I: Interviewer T/S: Teacher /student (SA, SB, SC, SD, SE)

SS: Students

(xxx): inaudible, not clear

.... : Silence

TURNS	QUESTIONS AND ANSWERS
1 I	Bueno muy bien entonces a continuación vamos a continuar con las entrevistas grupales cierto que se va hacer con los estudiantes de inglés II correcto? bien entonces como primera instancia. La primera pregunta es si ¿el profesor el docente encargado en ingles II les pide leer textos en inglés? ¿Trabajan textos en inglés?
2 SS	Si si la mayoría de las veces
3 I	si ok muy bien
4 S A	De hecho tenemos una guía que se llama world view y la utilizamos muy seguido
5 I	Ok world view that's ese es el libro?
6 SS	Si
7 I	Ok perfecto ahora ¿qué tipo de textos se les pide que lean? ¿Cómo son esos textos? ¿Qué tipo de textos por lo general leen?
8 S B	Depende del tema que estemos dando si es sobre le presente simple obviamente los textos van a ser del presente simple y si es del presente continuo, pues obviamente lo mismo pues aunque a veces variamos con los temas
9 I	Ok la misma pregunta para todos, ¿qué tipo de textos les pide el docente que lean?
10 S C	Normalmente son historias cortitas eee de algún relato eee de acuerdo al tema
11 I	Ok
12 S C	Ooo en muchos casos nos pone a ver un corto o un video y luego respondemos unas preguntas
13 I	A Ok que tienen relación con el tema bien perfecto. Aaa ¿Cuál es el objetivo de estos textos, que se les pide con estas lecturas?
14 S D	Algunos son como para eee practicar y afianzar el vocabulario,
15 I	Exacto bien, ese podría ser un objetivo, que otro aspecto se busca con estas lecturas?
16 S C	O afianzar el oído en los videos con el vocabulario
17 I	Mmm ok piensan que se cumple con ese objetivo propuesto en las actividades de lectura?
18 SS	SI

19 I	SI? Ok por ejemplo con lo referente al vocabulario y eso ok?
20 I	Bueno descríbanme que hacen o que actividades suelen hacer cuando implementan lecturas en clase?
21 S B	Suele ser muy dinámico porque ósea no solos siempre nos entrega el texto y simplemente hay que leerlo si no que vemos un video y entonces en base a los dos respondemos
22 S E	También nos manda hacer de pronto una actividad de escritura que nos permita responder las preguntas que nos está dando pero obviamente agregarle más cosas con nuestras propias palabras
23 I	Ok excelente ósea que también la parte de escritura también la manejan en base al texto como de producción
24 SS	SI
25 I	OK Correcto. Que opinan de los textos que se usan en clase, su opinión?
26 S E	Son textos bastante entendibles no tienen un vocabulario muy complejo pero también tienen una nivel de exigencia que se supone que ya deberíamos tener de conocimientos previos
27 I	La misma pregunta para las demás cuál es su opinión al respecto a los textos que usan en clase
28 SS	...
29 I	Si de repente les gusta? O lo entienden o no, por qué? quizás?
30 S B	Bueno yo la mayoría las entiendo pero no digamos que todos me gustan obviamente cada quien tiene gustos diferentes pero mientras sea dinámica la clase no hay problema de qué tipo de texto sea
31 I	Aaa ok si si referente a esta pregunta hablamos como de los tipos de textos correcto? Entonces me han dicho que son textos cortos, sencillos de no mucha complejidad, correcto? Y que hay de las temáticas?
32 S E-C	Pues las temáticas EE... pues son bastante simples pues osea no hemos abarcado algo asi que sea muy complejo, presente simple, presente progresivo ahora vamos a entrar apenas al pasado
33 I	Ok si y de los temas pero no en relación a la parte del idioma si no a los temas los contenidos de las lecturas? Cuales son esos temas de las lecturas? De que tratan?
34 S C	Mmm ... nos ha puesto muchos videos sobre textos sobre corea y su cultura
35 I	Aa cultura ok
36 S E	De cómo es el clima la vestimenta que se usan las personas allá en cada estación del año
37 I	Ok muy bien a eso me refería con el tema exactamente de estos textos bien aaa hay unos materiales complementarios, si los hay cuáles son? es decir, que además del texto como tal el docente usa otras acti.. o materiales para ayudarlos a entender?
38 SS	Videos
39 I	¿Videos?
40 S E	Algunas canciones que nos coloca para completar
41 I	Canciones correcto? es excelente como me dijeron trabajan mucho lo quien es el vocabulario. Te parecen útiles estos materiales extras o complementarios?
42 S B	Si se guía uno siempre ósea a veces uno tiene la idea pero no sabe si esta en lo correcto.

43 S A	Y no siempre todas las personas aprenden de la misma manera habrá unos que lo aprendan mejor viéndolo que escuchándolo y así
44 I	Ok excelente. ¿Alguna otra opinión? ... bien ahora con respecto a la evaluación de la lecturas eee , el docente les evalúa? y como lo hace? las lecturas
45 S C	Eee algunas son como de completar como hace una pregunta dependiendo el tema que estemos viendo entonces por ejemplo estuvimos viendo como ordenar en inglés y tenía uno como un menú y uno tenía que formular preguntas como en base como si estuvieras en la vida real
46 I	Ok bien
47 S E	También corregir algunos textos que él nos da, pero obviamente ya como a modo de ejercicio de la clase
48 I	Ok excelente si pero más específicamente en la forma de evaluación. Esas ideas me parecen bien las entiendo pero de que otra forma el docente les suele evaluar la comprensión lectora o los textos?
49 S B	Ósea él no nos los da en la forma en la que uno está acostumbrado, una sola respuesta pero con múltiples opciones. ósea ya no de esa misma forma si no si no completar o de pronto un listening ... si esas son las formas en las que él nos evalúa
50 S C	O de hacer un video
51 S E	También la forma como de ponernos a escribir o redactar.
52 I	Ok y finalmente vamos a ver... ¿Te gusta la metodología empleada por el docente para el uso y la enseñanza de la lectura? están de acuerdo les gusta la forma como el docente...
53 S D	si por que las clases son muy dinámicas y entonces como que uno entra y se aburre si no que siempre se mantiene activo
54 S C	viendo uno videos siempre uno no se duerme
55 I	hahaha.. Ok excelente y bien, ¿les parece importante o necesario el uso de textos en ingles en la clase?
56 SS	Si si si
57 I	Ok ¿por qué?
58 S A	Porque de esa manera uno puede emplear el vocabulario que tiene y las cosas que estas aprendiendo y de todas las cosas que estás dando ósea si el texto habla del presente simple es justamente porque tú lo estás dando ósea Y tendría el vocabulario del presente simple y todo de lo que ya has dado y de lo que estás dando.
59 S C	También te sirve para escribir vocabulario porque siempre hay palabras pues que puede que tu no sepas y ya uno busco el significado y te la emprendes y (xxx) : inaudible, not clear
60 I	Ok muy bien excelente entonces esto sería todo por hoy entonces muchas gracias por su colaboración en esta entrevista. thank you.

Appendix F. Transcript of interview to the microbiology students (focus group)

INTERVIEWS TRANSCRIPTION FORMAT
GROUP INTERVIEW: Food Engineering program

Interview # 7

Semester: 4 (Fourth)

Subject: Microbiology 4

Program: Food Engineering

Date: January 28 / 2019

Conventions:

I: Interviewer

T/S: Teacher /student (SA, SB, SC, SD, SE, SF)

SS: Students

(xxx): inaudible, not clear

.... : Silence

TURNS	QUESTIONS AND ANSWERS
1 I	Ok bien entonces primero que todo, gracias por su participación en esta entrevista vamos a empezar con la numero uno eee ¿el profesor les pide leer textos en inglés?
2 SS	si si
3 I	¿Sí? Muy bien ¿qué tipo de textos les pide leer?
4 SA	Artículos
5 SB	Artículos si
6 SB	Por lo general son más artículo de investigación
7 I	Ok ese tipo artículos científicos, artículos investigativos, correcto, muy bien gracias vamos a pasar con la siguiente ¿para qué les dan a leer estos textos? ¿Cómo cuál es el propósito con

	estos artículos?
8 SB	Yo siento que es más como para desarrollar nuestras habilidades en el inglés como para ver para ver más allá, no simplemente como por ejem... para nosotros es fácil leer en español pero algo más se despierta para nosotros al momento de intentar leer en inglés. Obviamente no es fácil pero así uno va desarrollando su capacidad.
9 I	Muy bien
10 SA	De pronto también para capacitarnos de pronto cuando salgamos allá afuera me refiero a fuera de la universidad porque obviamente nos va a tocar pruebas de inglés obviamente y todo eso entonces de pronto es como una pequeña prueba
11 I	Ok que bien muy bien familiarizándose
12 SS	Si exactamente
13 SC	Y como siempre la mayoría de la información de los científicos se encuentran en ingles xxx
14 I	Excelente muy bien.ok vamos a pasar a la numero 4 ¿piensan que se cumplen ese objetivo del cual estamos hablando con estos textos?
15 SS	Si
16 I	Ok muy bien que hacen normalmente con estos textos en la clase? ¿Como trabajan los textos?
17 SB	Utilizando lo que uno por ejemplo entiende pues obviamente ahí se ve como el interés de que hiciste si tu no leíste obviamente tu no vas a poder responder nada de lo que ella de lo que la profesora de pregunte
18 I	Ok
19 SB	Ahí también se ve si participaste si listes xxx.
20 S	Exacto con esta pregunta nos referimos también a las actividades que se hacen en base a estos artículos sí que que suelen hacer con estos textos en clase
21 SD	Se hacen resúmenes
22 I	OK
23 I	Sustentaciones jajaja
24 S	Ok si si así es
25 SD	Y algunos cuestionarios con las preguntas
26 S	Si claro obviamente no es el principio del semestre
27 I	Exactamente si muy bien listo que ¿Qué opinan de los textos en ingles usados en la clase? ...¿cuál es su opinión?...
28 SB	Pues ósea es que por lo general nosotros a simple vista verlos como está en ingles puede ser difícil de entender
29 I	Ok
30 SB	Pero uno ahí como que va identificando
31 SC	xxx
32 I	Exactamente me gustaría escuchar otra opinión si es algo muy subjetivo cierto? Eee cuando hablamos de que opinan eee es de manera general, me gusta, si, no lo entiendo, se me dificulta. Eso es lo que quisiera escuchar de parte de ustedes.

33 SD	Ósea uno al estar leyendo esos xxx ósea lagunas palabras ya las tiene en la mente ósea ya uno cuando lee en ingles ya uno va entendiendo un poco, no es que uno va a entender así todo pero si paulatinamente.
34 I	Claro muy bien
35 SC	Ya uno identifica algunas palabras del texto xxx
36	Si me están hablando de un poco de vocabulario cierto?
37SS	Si
38I	Que es clave
39SA	Si y más que todo por clase ósea por por parte osea más que todo uno va sujetándose de pronto como de suponer o cualquier cosa que trate de interpretar el texto.
40I	Ok muy bien eso se llama como inferir y relacionar que de hecho son estrategia lectoras pero que inconscientemente ustedes las usan ok muy bien aaa además de los texto en ingles eee ¿otro material complementario se les da para acompañar el texto, para facilitarlo?
41SD	Algunos audios
42I	Audios muy bien excelente
43SA	Películas
44I	Audios si exactamente ese tipo de materiales, ósea que no solo se da el texto como tal si no que otras cosas. Que recursos se utilizan. muy bien entonces
45SB	Videos
46I	Videos
47I	Muy bien
48SC	Si por que no solo la escritura si no la pronunciación también.
49SA	Música , música también
50I	Incluso música
51I	Ok muy bien listo, bien vamos a seguir eee ¿qué opinan de estos materiales complementarios les parecen útiles?
52SS	Si si
53 SA	muy útiles
54SD	Demasiado útiles
55I	Ok muy bien ¿por qué dirían que son muy útiles?
56SD	Ósea uno a veces la pronunciación de las palabras
57SB	De que aprendemos a desarrollar esa habilidad e poder aprender a leer a escuchar
58I	Y le ayuda a uno en ingles a entenderlo si ósea como todas las personas tenemos diferentes mecanismos de aprendizaje. Entonces de pronto a uno se le facilita de pronto más con diferentes tipos, hasta con video juegos obviamente palabras sencillas
59T	Excelente
60I	Tales como música

61I	Eso tiene que ver con los ritmos de aprendizaje y de estrategias que dependen de cada uno cierto? Bien... aaa seguimos ¿entienden las lecturas en ingles que te dan en clase. Explica ¿cierto?
62I	Sí, no por qué?
63SB	Completamente no
64SC	completamente no algunas si algunas si
65I	Ok muy bien
66SB	Es que es muy difícil porque por lo general como son artículos como en este caso científicos
67I	Así es
68SB	Son muy profundos en cambio y uno pues nuestro nivel de inglés si sabemos pero xxx
69SA	Interpretar
70SC	completamente el texto
71I	Ok muy bien eso es normal, eso pasa ok. ... ok evalúa el docente las lecturas en ingles que desarrollan en clase?
72SD	Si
73T	Ok como las evalúa como son evaluados ustedes?
74I	Resolviendo el taller que nos deja por ejemplo. simplemente un parcial como hace parte de la temática que estamos dando puede que hallan temas que entren del articulo entonces
75I	Ok entonces más concretamente de qué forma suelen ser evaluados me dicen que talleres ¿cierto? quizzes.
76SA	sustentaciones
77I	Sustentaciones que me habían dicho antes muy bien si ok... ok seguimos entonces ¿te parece necesario que te den a leer textos en ingles en la clase por qué?
78SC	Pues si
79SS	Si
80SD	Porque hoy en día todo es en ingles mejor dicho uno tiene que ir familiarizándose
81SB	Tiene que expandirse
82	Ok
83I	La globalizaciones que dicen
84SC	Es necesario
85I	Es necesario aja ¿por qué?
86	Ósea por que como vienen diciendo los compañeros ya en la actualidad se está utilizando mucho el ingles
87SB	El ingles
88SA	Y todo viene en ingles mejor dicho
89SS	Xxx
90SA	También al momento de conseguir un trabajo también salir de pronto a conseguir becas por medio del inglés también
91SB	Si muy importante

92SA	Eee... xxx muy importante
93I	Muy bien veo que reconocen la importancia de la lengua como en su carrera y a nivel de futuro de futuro próximo como profesionales. Bien por ultimo ¿qué piensas de la metodología empleada por el docente para trabajar estas lecturas si logran entender como como pueden explicar eso. ¿Les gusta?
94SA	Pues según mi opinión puede ser de pronto que son muy estrictas ósea que de pronto uno como le estaba diciendo de pronto uno no tiene el mismo tipo de de habilidad para aprender o estudiar eee el idioma de pronto buscar más estrategias de pronto
95I	OK
96SA	A eso era lo que más o menos me refería
97I	¿Ok muy bien listo alguna otra opinión sobre la misma pregunta?
98SB	Yo siento que es muy bueno porque de alguna u otra manera te ayuda a como a desarrollar esa habilidad de tu entender en ingles que no solo sea en español, sino que hay muchos métodos donde tal vez encuentres hasta más información en ingles que las que te pueden dar en español
99I	Si
100SB	Pienso que como que te ayuda a despertar en ese sentido
101I	Ok muy bien listo, ok jóvenes muy amables eso sería todo por esta entrevista gracias una vez más listo
102SS	Bueno teacher. bien ... permiso

Appendix G. Transcript of the individual interview to the english students

INTERVIEWS TRANSCRIPTION FORMAT

INTERVIEWED STUDENT: Food Engineering students.

Interview # 2

Semester: 2 (second)

Subject: English 2

Program: Food Engineering

Date: September 23 / 2018

Conventions:

I: Interviewer

T/S: Teacher

(xxx) : inaudible, not clear

.... : silence

TURNS	QUESTIONS AND ANSWERS
1 I	OK Bueno listo primero que todo esta es una entrevista dirigida a estudiantes, si he la entrevista va a estar, va ser va estar dirigida a los estudiantes pertenecientes a INGLES II, Microbiología de cuarto semestre en este caso los estudiantes de inglés II. Bueno empecemos con la primera pregunta. ¿El docente encargado les pide leer textos en ingles en la asignatura?
2 S	Con las guías que nos da leemos algunos historias y coas así
3 I	Ok ok listo ¿qué tipos de textos les pide leer que tipo de textos trabajan en clase?
4 S	Textos simples porque la mayoría no tiene un vocabulario tan avanzado entonces la idea es que ellos entiendan en que se va a basar la actividad.
5 I	Ok ¿Cuál es el objetivo de estos textos leer estos textos que nos estás comentando?
6 S	Aparte de ser un cumplimiento de la clase la idea es que los estudiantes también aprendan que vayan poco a poco adquiriendo vocabulario y aprendiendo cosas nuevas
7 I	Bien piensas que se cumple con ese objetivo cuando implementan lecturas en clase?
8 S	Por parte de algunos estudiantes si por que tienen el interés de aprender pero hay otros que siempre unos que se distraen un poco y no hacen el esfuerzo
9 I	Aa ok entiendo ok cuando usan textos en clase que que con base en que trabajan que hacen con estos textos?
10 S	Bueno principalmente a nosotros nos los entregan para que leamos, entendamos un poco y luego le decimos algunas respuestas se socializa todo, se aclaran las dudas y ya.
11 I	Y ya? ok ok listo qué opinas de los textos que se usan en las clase?
12 S	Son buenos porque son textos entendibles puede que haya una que otra cosa que no se entienda pero el profesor siempre nos hace la aclaración.
13 I	Ok muy bien además de los textos que se usan en ingles que otros materiales o materiales complementarios acompañan a este texto para que se facilite el entendimiento además del texto como tal usan otro tipo de materiales?
14 S	Siempre nos colocan unas imágenes también a veces utiliza de pronto videos y ya.
15 I	Ok perfecto que opinas de estos materiales complementarios te parecen útiles?
16 S	Si son bastante útiles porque siempre texto texto texto ósea la ideas es idea es variar y de pronto a través algunos otros tienen otras formas de aprender por ejemplo algunos les gusta más lo visual de pronto lo auditivo, también los listening que hacen.

17 I	Ok perfecto entiendes las lecturas por lo general que aplican en clase?
18 S	Bastante
19 I	Ee el docente evalúa las lecturas implementadas en clase?
20 S	Si todo lo que hacemos con él siempre toma una nota
21 I	Ok perfecto y como y a través de qué tipo de actividades el docente evalúa esta estos textos, las lecturas.
22 S	Nos deja algunos ejercicios de esos ejercicios que hacemos también después nos hace quizes también preguntas así al azar para ver quienes están activos.
23 I	Okkk listo que otra actividad que recuerdes que sirva para evaluar la lectura además de la que mencionaste?
24 S	Writing en la escritura como el ejercicio que nos colocaron ahora
25 T	Aaa ya ok muy bien te parece necesario que te den textos a leer en clase te parece importante
26 S	Si e parece importante porque eee con esos textos que nos da el profesor y al momento de hacernos las preguntas el busca que le demos argumentos entonces con base a esos argumentos él nos pone una nota y eee cuando le estamos dando los argumentos estamos tratando de buscar el vocabulario que tenemos ya previamente para poder darle las respuesta que de pronto nos esté pidiendo
27 I	Bien listo y por último que piensas de la metodología que el docente aplica para el uso de estos textos en clase, ¿te gustan? ¿Estás de acuerdo?
28 S	Si me gustan por que no siempre hace lo mismo y trata de que todo se nos facilite y que podamos entenderle todo.
29 I	Ok señorita muchas gracias por su cooperación en esta entrevista. Thank you very much.
30 S	You are welcome.

Appendix H. Transcript of the individual interview to the microbiology students

INTERVIEWS TRANSCRIPTION FORMAT INDIVIDUAL INTERVIEW: Food Engineering program

Interview # 2

Semester: 4 (Fourth)

Subject: Microbiology 4

Program: Food Engineering

Date: January 28 / 2019

Conventions:

I: Interviewer

T/S: Teacher

(xxx) : inaudible, not clear

.... : silence

TURNS	QUESTIONS AND ANSWERS
1 I	Primero que todo, gracias por contar con tu participación en esta entrevista. Empecemos de inmediato con la primera pregunta. ¿El profesor les pide leer textos en inglés?
2 S	Algunos no todos dependiendo de lo que es la materia o la asignatura.
3 I	Ok ¿pero específicamente en la asignatura de microbiología?
4 S	Si si claro nosotros hacemos lo que llamamos un seminario y en el seminario tiene que ir obligatoriamente palabras en inglés. Totalmente en inglés y mostrarlas en las diapositivas en inglés.
5 I	Ok ok que bueno excelente. ¿Qué tipo de textos les pide leer?
6 S	Va más con con es la materia microbiología ósea va ligado a lo que son bacterias eee ya que los nombres en ingles que más? Microorganismos y ese tipo de cosas
7 I	Ósea que son textos totalmente relacionados con la asignatura con la carrera
8 S	Completamente relacionados si
9 I	Ok muy bien ¿piensas que se cumple? mmm perdón. ¿Para que les dan a leer estos textos? ¿Cuál es el propósito de esta lectura?
10 S	Pienso que es ayudarnos a lo que es la fluidez verbal y de pronto en el ámbito laboral cuando nosotros salimos a una empresa. De pronto nos vamos a encontrar una etiqueta lo que es ... se maneja mucho en el idioma ingles
11 I	Así es muy bien. Ok listo mmm... piensas que se cumple ese objetivo ósea estamos aplicando textos en ingles en la asignatura si y piensas que se cumple el objetivo de usar esos textos?
12 S	Claro que si e incluso cuando vamos a los laboratorios y que hacemos prácticas de laboratorios mmm la etiqueta de los recipientes a veces no no a veces casi siempre encontramos los nombres en ingles entonces hay una va familiarizado con xxx
13 I	Excelente muy bien entonces definitivamente si Bien pasemos a la siguiente que hacen normalmente con estos textos en clase sí. ¿Cuáles son esas actividades que se usan en base a los textos?

14 I	Eee buenos las actividades como tal que manejamos en la asignatura es ella nos manda de pronto a investigar artículos pero los artículos son netamente en ingles todo en inglés y lo que ya había mencionado que eran los seminarios, las exposiciones, esas exposiciones tiene que ir una parte en inglés.
15 T	Ok listo entonces hacen seminarios, exposiciones,
16 I	Artículos, investigaciones.
17 T	Investigaciones de artículos obviamente son en ingles
18 I	En ingles páginas de ingles
19 I	Muy bien excelente ¿qué opinas de los textos en ingles usados en la clase, tu opinión general?
20 S	Ok si la materia es microbiología
21 S	Pues es que me parece muy bueno porque es algo que te vas a encontrar, ¿cómo le explico? Hay palabras que son muy usuales te las encuentras en cualquier parte en inglés, pero los textos o lo que encontramos más o menos o lo que la profesora nos pone a buscar o que nosotros mismos busquemos son bastante explícitos, son cosas que de pronto, palabras que no manejamos en el día a día
22 I	Exacto
23 S	Y que son de pronto las más difíciles de uno tenerlas ahí ósea aprenderlas
24 I	Correcto pienso que te refieres como a vocabulario científico.
25 S	Exactamente
26 S	Directamente relacionado con el área. Ok muy bien aaa...) ¿Además de los textos en inglés se les suministra otro material complementario que ayude a facilitar la comprensión de estos textos? ¿Además del texto escrito como tal hay algo más que les brinda la docente?
27 I	... que ella nos brinde como tal xxx no sé qué sería
28 S	Si como un material extra o complementario quizás que tenga relación con la lectura
29 I	Bueno de pronto se podría decir xxx siempre antes de hacer el laboratorio tenemos lo que es la guía
30 I	Ok
31 T	En la guía como tal a veces algún producto, algún reactivo, algún, material que vayamos a utilizar ya va indicando más o menos, ¿si me hago explicar?
32 I	Si la guía es como algo complementario ¿cierto?
33 T	Si
34 I	Ok bueno listo excelente bien sigamos. ¿Qué opinas de estos materiales complementarios? ¿Te parecen útiles?
35 T	Ósea son muy útiles lo que es en base a nuestra carrera si me entiende por qué nosotros estamos día a día en los laboratorios y tenemos que estar muy familiarizados con lo que es los nombres de los productos entonces se puede imaginar sería fatal mezclar por no saber hacer una mala mezcla o un mal proceso.
36	Ok entonces esa guía de la que me hablas es fundamental

37T	Fundamental
38I	Como su nombre lo indica es una guía ok muy bien dale... eee ¿entiendes las lecturas en ingles que les dan en clase?
39T	Si sabe. Porque contamos con la ayuda de la profesora que nos ayuda mucho también ella, además en sus clases se me había ... no lo había mencionado pero en sus clases de video beam ella tiene muchas imágenes que son netamente inglés y ella no solamente nos lee en inglés, nos lee en inglés y en español xxx
40I	Si ves entonces ahí eso es un material complementario y un material que les ayuda a entender la lectura todas estas imágenes proyectadas en video beam como tú lo expresaste ¿cierto? Muy bien pasemos entonces a la parte de evaluación, ¿evalúa el docente las lecturas en inglés y como lo hace?
41T	Si por lo menos en lo que es no tanto quizes si no parciales por ejemplo ya había mencionado las imágenes, nos pone las imágenes en inglés y que ósea le pongamos, ¿cómo le explico? Le indicamos el nombre de lo que ella tenía ahí de lo que nos mostró en las diapositivas ya nosotros tenemos el manejo de que ella nos los mostro en ingles pero también nos los tradujo a español entonces nosotros por ende debemos saber
42I	Entonces es como relacionar. ósea el concepto como la imagen y cosas como esas
43T	Si y no solamente son imágenes pueden ser gráficas, diagramas de flujo, cuadros, mapas conceptuales, todo ese tipo de xxx
44I	A ok todo eso son materiales que les ayudan a entender mejor... listo ¿te parece necesario que te den a leer textos de inglés en la clase por qué?
45T	Claro que si porque amplia lo que tiene que ver mi vocabulario y mi conocimiento de pronto al ver una o más palabras, letras familiarizando, uno va aprendiendo
46I	Listo muy bien si así es y por ultimo ¿Qué piensas de la metodología empleada por el docente al momento de trabajar estas lecturas?
47T	Con inglés?
48I	Exactamente eso responde entonces un poco a la pregunta ¿cómo evalúa? ¿Que se les pide hacer con el texto?
49T	Ella siempre nos los recalca desde el principio que nosotros vamos a entrar a un ambiente laboral donde no todas las coas se nos va a facilitar de pronto a veces sino se limita por no manejar no es que vamos hacer totalmente bilingües pero si quiera manejar el ámbito de nosotros que es la ingeniería de alimentos reactivos, productos y esas cosas entonces uno se limita a veces en un trabajo y no vas a tener al profesor que te va estar diciendo esto es tal cosa o mezcla tal cosa entonces me parece muy bueno para ampliar nuestros conocimientos.
50I	Ok bueno muy bien así es ustedes van a ser profesionales exactamente y tienen que estar ee... relacionados con conceptos sobre su carrera ¿cierto? Y en ingles mejor.
51T	Si a veces uno puede encontrarse con una bacteria un microorganismo, entonces las indicaciones están en inglés y uno

52I	Así es es bueno excelente entonces eso sería todo gracias por contar contigo en esta entrevista.
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Appendix I. Transcript of the English class observation

CLASS OBSERVATION TRANSCRIPT FORMAT

TEACHER:

Observation # 1

Semester: second (2)

Subject: English 2

Program: Food engineering program.

Date: September 13 2018.

Information in parentheses corresponds to observer's comments

Conventions:

O: Observer

T: Teacher

S (A, B, C, etc.): Each letter refers to a different student

SS: Students in chorus

(xxx) : inaudible, not clear

.... : silence

Turns	Participants	Actions
1	O	<i>(At the beginning of the class the teacher took some time to organize the materials for the class like the t.v. and the connections with the computer.</i> The teacher comes into the classroom, and greets the students. He starts the class by having the students reflect on a question that writes in the board what are the people doing?
2		Cellphone ringing
3	T	No cellphones in class
4		Cellphone ringing

5	SS	Students talking in spanish (inaudible, not clear)
6	T	Ok guys answer this question, answer this question. What are people doing? Answer this question Do you have a similar memory? Memory? Do you know the meaning of memory in Spanish? (Inaudible, not clear xxx): Memory in Spanish. <i>(simultaneous wrote the question in the board and said the question step by step in a comprehensible manner)</i>
7	SA	Recuerdos
8	SB	Recuerdos
9	SS	Recuerdos
10	T	Yeah much better, you are so good! Ho my god! Do you have a similar memory? Let's watch the video
11	SS	Laughing
12	T	I am sorry. What? Yeah (xxx): what, ¿chicos ese es todo el volumen?
13	S A	profe moviendo el botoncito de arriba
14	S B	Aja ahí
15	S A	Estas volando hoy
16	T	Ok I think that's enough, so look at the video is in Spanish anyway
17	T	Excuse me Ok (projects video)
		... (video displayed)
18	SS	Ya??? (Showing surprise about the length of the video, it was too short)

19	T	It's a short scene. Did you know this movie? No? it is an excellent movie
20	S C	yo pensé que iba a durar como dos horas
21	T	Yeah alright! So guys. What are the people in the scene doing? What are they doing? Very good in can be in English or Spanish.
22	S B	they are saying good bye(xxx) : inaudible, not clear
23	T	Very good Karol. They are?
24	SB	they are saying good bye to each other
25	T	They are saying good bye to each other. Very good saying good bye yeah? Where are they? Where are they? The place?
26	SS	In the airport
27	T	In the airport in the airport yeah Guys do you have a similar memory? Do you have a similar memory?
28	SC	Yes
29	T	Yes mely. for example tell me
30	SC	In Spanish?
31	T	In Spanish
32	SC	¿recuerdo similar ?(inaudible, not clear)
33	T	¿Ah?
34	SC	¿Tengo un recuerdo similar?
35	T	Aja

36	SC	claro obvio cuando similar te ...despides de tu familia cuando vas de viaje (Looks motivated)
37	T	¿Porque tú no eres de aquí?
38	SC	No
39	T	¿De dónde eres María?
40	SC	soy de lorica
41	T	De lorica y pero estas viviendo aca?
42	SC	Si
43	T	Y cuando te venias pa aca a estudiar algo así y ¿con quién vives con tu mama o tu papa?
44	SC	Con mi mama porque siempre he vivido con ella y nunca me he separado de ella....
45	T	¿Siempre te da cosa?
46	SC	siempre me da cosa dejarla a ella es que esa como sola
47	T	y te da consejo siempre que te vienes ojo que allá vas a estar sola y tienes que ser más responsable, a estudiar nada de perreo intenso ni nada de eso
48	SC	no porque ella sabe que yo soy muy seria (laughs)
49	SS	(laughs)
50	T	A tú no eres de eso
51	SC	no yo soy muy seria en eso

52	SS	(laughs)
53	T	Quien más chicos quien mas no es de aquí y está estudiando aquí y sé que se queda aquí.
54	SS
55	T	(xxx): inaudible, not clear ¿tú de dónde eres?
56	SD	de planeta rica
57	T	¿De planeta rica? y a ti que también te despidieron así? si?
58	SD	No
59	SS	(laughs)
60	T	Si en la sociedad los hombres los hombres somos como que más sueltos mientras que a las mujeres más si las tiene más las tienen como quemadas controladas. Ósea todos los consejos son para mujeres que eso es muy machista no como que las mujeres si ellas son las que se tiene que cuidar ellas son las que se tienen que portar bien. Los hombre como que aaa? cierto bueno guys entonces normalmente si cuando te vas pues les dan consejos y siempre les da duro a los papas cierto? dejar los hijos que se van solos y nunca saben lo que les va a a pasar, si bueno ustedes porque ¿no tienen hijos o sí? ¿Tienen hijos ustedes?
61	SS	NO!
62	T	Luisa ¿tú eres de aquí?
63	SE	(xxx) : inaudible, not clear
64	T	Si y María Camila tu eres de montería? si o qué? de dónde eres.

65	SF	(xxx) : inaudible, not clear de chinu.
66	T	De chinu! ¿también vives aquí? sola?
67	SF	No
68	T	¿Con tu mama?
69	SF	con una hermana
70	T	con tu hermana? (xxx) : inaudible, not clear ósea que no te despidieron así
71	T	(xxx): inaudible, not clear ¿tu si eres de aquí? ¿De dónde eres Adriana?
72	SG	San Andrés de sotavento
73	T	San Andrés de Sotavento. Está lejos. También te despidieron así y te dieron todas las instrucciones y consejos... ¿qué Conejos te dieron?
74	SF	pórtese bien y estudie
75	T	claro así es, básicamente pórtese bien y estudie no tienen más na que hacer aquí he bueno
76	T	(xxx): inaudible, not clear todo bien ¿de dónde eres?
77	SH	de ciénaga
78	T	¿De cienega? y viajas todos los días?
79	SH	me despiden todos los días
80	T	¿cómo?
81	SH	me despiden todos los días

82	T	¿te despiden todos los días?
83	SS	(laugh)
84	T	eso dice el (xxx) : inaudible, not clear
85	T	Juliana ¿tú eres de aquí?
86	SI	(xxx) : inaudible, not clear
87	T	de Montería entonces no te despiden
88	SI	si me despiden porque yo no vivo con mis papas
89	T	A tu no vives con tus papas? pero vives con tu hermano así me dijiste y te despide tu hermano? o no? ya tú eres responsable de ti misma ya tu eres una chica adulta ¿cierto?
90	T	Chicos bueno vamos a leer un ... una pequeña texto que se trata esta más o menos relacionado con lo que vimos ahora, vamos hacerlo en grupos de tres
100	SS	talking in Spanish (xxx) : inaudible, not clear
101	T	chicos me dan cien dólares por el material
102	SB	Americanos o
103	T	Americans Guys a hundred dollar Jeison
104	SS	talking in Spanish (xxx) : inaudible, not clear
105	T	Louisa who are you working with? (xxx): inaudible, not clear luisa luisa estas concentrada en la clase? talking in spanish (xxx) : inaudible, not clear

106	SS	talking in spanish (xxx) : inaudible, not clear
107	T	guys 100 dolares colombianos
108	S	teacher
109	T	¿señor?
110	SS	talking (xxx) : inaudible, not clear
111	T	Carolina! chicos mientras leemos vamos a responder estas preguntas que tenemos aquí Bueno se las voy a mostrar en la pantalla.... are they clear. ¿Se ve si?
112	S	no aumente el zoon
113	T	Les pongo mas zoon asi, ¿así'?
114	SS	No!
115	T	(xxx) : inaudible, not clear ¿asi? me avisan
116	S	Yes
117	T	Ok chicos vamos a tomarnos hasta las dos para leer y respondemos las preguntas. guys si tienen algún problema entendiendo algo, alguna palabra o algo que esté en el texto, levanten la mano do you have a question?.... very funny
118	S	talking in Spanish (xxx) : inaudible, not clear
119	T	Ok if you have any trouble with a word with the vocabulary or anything else in the text, the text is very easy guys, it's not difficult. it is very easy ok. it is very easy but if you have problems with the vocabulary or something you don't understand you let me know and I'll go there ok got it? Yes?
120	SS	yes (laughing)

121	T	caroline! ¿Are you working already julian?
122	SS	students talking (xxx) : inaudible, not clear
123	T	I got the same phone ¿whose this?
124	SS	students talking (xxx) : inaudible, not clear
125	S	mister ... mister
126	T	Yes
127	T	(xxx) : inaudible, not clear what are you doing?
128	S	knocking at the door
129	T	¿estan tocando aqui ?
130	SS	Si
131	SS	students working in groups students talking (xxx) : inaudible, not clear
132	SS
133	T	Guys do you have any problem with the questions? ojo ahí con las preguntas... number one quien me dice que dice la pregunta número uno? quien me dice?
134	S	students talking (xxx) : inaudible, not clear
135	T	¿Cómo? ¿Cómo? ¿Había? ¿Sally Sally es la chica cierto? Sally había dejado, se había ido antes
136	SS	no
137	T	A la universidad esa es la pregunta cierto. La segunda pregunta ¿qué dice?

138	S	¿Que va hacer Sally a la universidad?
139	T	Que! why? ¿por qué?
140	SS	A porque students talking (xxx) : inaudible, not clear
141	T	fue
142	SS	porque fue Sally a la universidad
143	T	Ok correcto ¿y la tres que dice?
144	SS	No no students talking (xxx) : inaudible, not clear
145	T	¿Quería la mama que se fuera?
146	SS	no
147	T	a ok y después la cuarta?
148	SS	porque
149	T	por qué ósea aquí
150	S	porque la mama de sally lloro en el
151	T	¿En el que?
152	S	en el tren
153	T	¿En el tren cierto? la seis que dice?
154	S	Ella fue despues students talking (xxx) : inaudible, not clear
155	S	no

156	T	¿estaba feliz cuando sally?
157	SS	students talking (xxx) : inaudible, not clear
158	T	¿aa y la siete?
159	SS	¿por que ?
160	T	¿a ok y la ocho ?
162	S	quería ir a casa
162	T	Quería ir a casa los estudiantes.... la nueve que dice? glad! glad! is a synonym for happy. Is a synonym for happy entonces que le dicen?
163	S	¿Porque estaba la mamá de sally feliz?
164	T	Yeah ok ¿y la última miss? ¿que es miss?
165	SS	extrañar
166	SS	los estudiantes extrañaban a sus padres
167	T	Ok están claras todas las preguntas. ¿Cristian? ¿Jason? ok continuamos ¿si?
168	SS	Teacher, no vamos por la 5
169	SS	no vamos por la 6
170	T	¿Ahí ¿ahí?
171	SS	No
172	T	¿ahí?
173	S	Mister!

174	T	Do you want me to scroll down scroll down? yeah? yes or no?
175	SS	yes!
176	T	like this? yeah?
177	S	mister mister (xxx) : inaudible, not clear
178	T	No
179	T	ready
180	SS	Yes
181	T	Did everyone finish?
182	SS	No
183	T	Ingrid, Nohelia, Estefany no what about you?
184	T	Ready guys yeah? Finish? Finish? Yeah?
185	SS	No
186	T	Jayson, Williana, Caroline, Luisa, let's wait five minutes, five more minutes and let's start checking the questions ok
187	SS	yes
188	SS	finish
189	T	finish ? ok guys are you ready Juliana Jason williana ? ok let's check. let's check your answers guys. Guys so first what are the similarities between the video and the text? the similarities what are the similarities between the video and the text? any similarities?

190	SS	yes
191	T	yes? what are the similarities?
192	S	(xxx) : inaudible, not clear
193	T	Yeah yeah the son or children the son in the text is daughter yeah yeah they leave on yeah? where have they gone? you don't know because you haven't seen the movie but he also goes to the university in the movie in the scene he goes to the university also. Ok in the text sally?
194	S	goes to the university
195	T	Yeah goes to the university an ok ok so let's check the questions question Question number one.... question number one has sally ever left her parents before she went to the university a or b?
196	S	A
197	SS	A
198	T	A no she has not. Guys in what part of the text did you find this? In what part of the text. Give me the exact line. Chicos en que parte del texto nos dice ósea la información que necesitamos para responder a esta pregunta ¿en qué parte?
199	S	(xxx) : inaudible, not clear first line
200	T	En la, que dice en la first line?
201	S	sally was nineteen years old she has (xxx) : inaudible, not clear
202	T	y de esa parte cual es la parte que nos dice que
203	S	(xxx) : inaudible, not clear
204	T	she has always. she had always had. had quiere decir que habian que habían,

		hasta ese momento habían she had always lived with her parents ahí en ese mismo párrafo hay otra parte que nos dice que nunca había salido de su casa antes. ¿cuál es? léanme donde dice
205	S	(xxx) : inaudible, not clear
206	T	ok caroline, alguien más además de caroline alguien más? que otra parte en que otra parte dice que ella nunca había estado
207	S	(xxx) : inaudible, not clear
208	T	Muy bien Estefanía. ¿Qué dice? lo que dice la mama.
209	S	My little girl will be alone
210	T	My little girl will be alone for the?
211	S	the first time
212	T	The first time eso fue lo que nos dice la mama también dice que ella nunca había salido. mi pequeña niña va a estar sola ¿por? a ok
213	SS	For the first time
214	T	For the first time ok now go to question number two when did sally go to the university a or b? A or b?
215	SS	B
216	T	Ok b Cristian ¿dónde dice con qué parte del texto respondemos esa pregunta? donde dice eso?....
217	S	(xxx) : inaudible, not clear to go to the university to study to be a doctor

218	T	To be a doctor cierto en la tercera línea del primer párrafo. ¿sí? ¿sí o no chicos?
219	SS	Yes
220	T	A ok question number 3 Antonio, number 3 did her mother want her to go? No she did not or yes she did?
221	S	no she (xxx) : inaudible, not clear
222	T	What? A or b? Antonio
223	S	A
224	T	a! no she did not ok chicos ¿esa es la respuesta correcta?¿ todos la tienen así?
225	SS	yes
226	T	Porque Antonio donde encuentras esa información? a or b? ¿en qué parte del texto?
227	Smother was very sad....
228	T	mother was very sad y que más nos dice
229	S	she was
230	T	she was ok chicos porque entonces decimos que ella no quería? esta explicito ahí en el texto
231	SS	No
232	T	No está implícito cierto no lo dice pero es algo que nosotros podemos inferir según lo que está expresando el texto ¿sí o no?
233	SS	claro

234	T	ok, ok let's go to number four... williana williana la numero cuatro why? ¿Por qué?¿porque ella no queria que se fuera? a or b? b is that correct guys?
235	SS	Yes
236	T	¿Dónde encontramos eso en el texto Joaquín? ¿en qué parte del texto encontramos la respuesta a esa pregunta?
237	S	En because, because she loved her daughter very much and ... she was also afraid because she loved her daughter very much
238	T	yeah. she was afraid she was feeling that the university was not (xxx) : inaudible, not clear
239	S	yeah
240	T	ok Caroline pregunta numero cinco. why did sally's mother cry on the train?
241	S	because she (xxx) : inaudible, not clear
242	T	because she had left sally. ¿dónde encontramos esto? en parte del texto encontramos esto?
243	S	¿donde dice good bye? (xxx) : inaudible, not clear
244	T	Exactamente ¿es algo que encontramos nuevamente explícito en el texto. chicos?
245	SS	Yes
246	T	... la razón la razón si encontramos que ella lloro explícitamente pero la razón? yeah she was (xxx) : inaudible, not clear y ella desde el principio ¿qué? no quería que se fuera se sentía triste se sentía si acongojada. so, so we can infer that from the text.

247	T	ok aura pregunta numero 7 haber pregunta numero 6 aura was she happy after sally telephoned? a or b?
248	S	yes she was
249	T	yes she was. guys is that the correct answer?... María Camila ¿es esa la pregunta la respuesta correcta? ¿quién tiene la respuesta diferente? nadie?
250	SS	(xxx) : inaudible, not clear
251	T	¿Carol estaba feliz o no estaba feliz después de que sally llamo? ¿Estaba feliz carol?
252	S	No
253	T	no estaba feliz chicos
254	S	because she thought that her little girl was (xxx) : inaudible, not clear
255	T	Yes why, why her mother wasn't happy? Why, why her mother wasn't happy? Eso no está explícito en el texto tienen que inferirlo. Pero miren lo que dice, dice then every week sally kept her promise. Si mantuvo su promesa si verdad and telephone they talked for several minutes and she was ver happy and never said that she missed her parents. Her mother was not glad about this. Listen her mother was not glad about this. Siempre que ella llamaba decía que estaba feliz en la universidad y nunca decía que ella extrañaba a sus padres cierto. y la mama estuvo feliz acerca de esto?
256	SS	No
257	T	No she was not happy at all. ¿Por qué? ¿Por qué no estuvo feliz?
258	S	porque pensaba que ella estaba más feliz en la universidad que en su casa
259	T	Very good Jasón very good por que la mama pensaba que Sally la pasaba muy bien en la universidad. (xxx) : inaudible, not clear

		Entonces por qué no estaba feliz la mama de Sally la numero siete ya la respondió Jasón, pedro entonces ¿cuál sería? a or b?
260	SS	B
261	T	B exactamente, no estaba, la mama no estaba muy contenta porque Sally was very happy at the university and not missing home. Ok Adriana number eight. Did the students want to go home for the holidays?
262	S	B
263	T	A or b ?
264	S	B
265	T	Yes very good ¿donde encontramos eso? ¿En que parte?....
266	S	(xxx) : inaudible, not clear
267	T	Ok ok Adriana otra vez otra vez. The students?...
268	S	Were very happy that they were going to the home towns (xxx) : inaudible, not clear
269	T	Si exactamente. Eso que fue? ¿Por qué esta entre comillas eso? ¿Por qué eso está entre comillas chicos?
270	S	(xxx) : inaudible, not clear
271	T	No porque es algo que alguien más dijo cierto? Por ejemplo cuando alguien más dice algo ponemos unas comillas y ¿quién dijo eso?
272	SA	Los estudiantes, los compañeros de ella
273	SB	Los compañeros de Sally
274	T	¿Quién dijo eso y a quién? Quien dijo eso

275	SA	Yo creo que los compañeros de Sally
276	SB	Si, bueno dilo pues
277	T	¿María? ¿Camila?
278	SA	Se lo dijeron los compañeros a Sally
279	T	Ok pero en ese momento quien era el que le estaba diciendo eso a ¿quién?
280	SS	Sally a (xxx) : inaudible, not clear
281	T	Sally a su madre, a la de ella
282	SS	Students (laughing)
283	T	Ok. Yeah guys so, number nine. Joaquin number nine a no ya duvan number nine. Why was sally's mother glad?. La numero nueve eight or b?
284	SC A
285	T	¿A dónde encontramos eso duvan?
286	SCsally's mother was very glad then the students had said this.
287	T	Ok glad es un sinónimo de que guys glad?
288	SS	Happy
289	T	A ok, very good duvan ok guys now the question number ten. Muñoz question number ten
290	SS	Students (laughing)
291	T	Question number ten. did the students miss their parents? A or b muñoz ?

292	S	B
293	T	B yeah they missed them very much?. Guys what do you think?
294	S	Que no
295	T	No! what is the correct answer Ana?
296	SS	A
297	T	¿Donde, donde podemos encontrar esa respuesta?
298	S	(xxx) : inaudible, not clear
299	T	Yeah but we really missed our pets pero los papas no. a ok chicos guys, los eventos que de los que hablan ahí en el texto de Sally chicos son que ocurrieron en el pasado, ¿que están pasando ahora o que van a ocurrir en el futuro?
300	S	En el pasado
301	SS	En el pasado
302	T	Son eventos ¿de qué?. ¿Cómo sabemos que son del pasado?
303	SS	(xxx) : inaudible, not clear
304	T	¿Cuándo qué?
305	SS	Por los verbos
306	T	Muy bien porque los verbos están en pasado. Denme un ejemplo de un verbo que este en pasado en el texto.
307	SS	Sally (xxx) : inaudible, not clear

308	T	Sally was. Was what? Nineteen years old. ¿Qué otra cosa encontramos en pasado en el texto chicos?
309	S	Por ejemplo she had (xxx) : inaudible, not clear
310	T	What?
311	SS	She had (xxx) : inaudible, not clear
312	T	Otro verbo en pasado
313	SS	She was, she was
314	T	She was ?
315	S	Afraid
316	T	She was also?
317	S	Afraid
318	T	She was also afraid muy bien entonces ¿qué le paso a este verbo chicos?
319	S	B
320	T	B a ok muy bien ¿que otro verbo que este en pasado en el texto?
321	S	Her mother
322	T	Her mother ¿qué?
323	S	Was really sad about this
324	T	Was really sad about this y con otro verbo que no sea was
325	S	Pensar soug

326	T	Thought! ¿Cierto ?y ¿cómo dice sally que dice?
327	SS	Students (laughing)
328	S	(laughing) she thought
329	T	She thought?
330	S	My Little girl for the first time
331	T	She thought, they open quotation marks my little girl yeah she thought she thought, this is in past, este es el pasado de que ¿de que verbo?
332	SS	Pensar
333	T	Yeah y ¿cómo es en inglés?
334	SS	Think
335	T	Think muy bien guys.otro otro, otro ejemplo
336	S	The time had come, the time had come (xxx) : inaudible, not clear
337	S	Sally said good bye
338	T	Ese es el pasado perfecto....
339	S	A ya
340	S	Sally said good bye
341	T	Sally said good bye yeah Sally said good bye. Said este es el pasado de que verbo guys?
342	SS	Si tiene la s al final (xxx) : inaudible, not clear

343	T	De say cierto? ¿Si o no? Ey ¿otro ejemplo que ustedes encontraron en pasado?
344	S	Had
345	T	What?
346	S	Her mother cried her mother cried
347	S	Had, ¿no se dice asi?
348	T	Maria Camila What what?
349	S	She had always, espérate que esta tosiendo. She had always lived with her parents
350	T	A ok yeah that' s, tha's something different porque es pasado perfecto así que no vamos a
351	S	Sally had her parents (xxx) : inaudible, not clear
352	T	Si porque es muy complicado todavía (xxx) : inaudible, not clear
353	T	A ok muy bien Carol. Sally
354	S	Kept her promise
355	T	Sally kept her promise. Este también está en, ¿Este es el pasado de que verbo?
356	SA	¿Mantener qué?
357	SB	Mantener
358	T	¿Si o no? Fácil o no?
359	SS	Yes

360	T	Ok por eso sabemos que eso sea en pasado por que los verbos están en pasado si o no en todo el texto normalmente. Casi en todo el texto y hemos estado hablando un poquito de pasado de echo ok guys. Now we are gonna do an activity. I want you to take a look to this question guys. Take a picture. Because we are going to continue with another exercise.
361	SS	(xxx) : inaudible, not clear....
362	T	Ok guys can you take a picture of this?... that is not in the book guys that is not in the book. This is a different book. Ready? (coughing) sorry guys. I am sorry sorry. Ok don't take the picture because I forgot that we have the television, the television. (xxx) : inaudible, not clear so I want you to listen I want you to listen, I want you to listen guys (coughing)
363	S	Students talking in Spanish (xxx) : inaudible, not clear
364	T	Guys I want you to listen
365	SS	(laughing)
366	T	I want you to listen to Rosa and Michael talk about their memories. Talk about their memories and circle the memories they talk about. So you listen to them you listen to them and you choose and you choose the correct answer ok? Primero habla rosa y después.... Que tienen que hacer chicos (xxx) : inaudible, not clear Ana
367	S	(xxx) : inaudible, not clear
368	T	A encerrar ¿qué? El primer punto a encerrar ¿qué? ¿Vas a encerrar?
369	S	Las cosas (xxx) : inaudible, not clear
370	T	Las cosas de las que ellos hablan cierto si ellos van a hablar de ciertas cosas y ustedes las van a encerrar en un círculo y además de eso quiero que escriban las pregunta que ellos se hacen ok
371	SS	(xxx) : inaudible, not clear

372	T	A ok, están hablando ¿de que chicos?, ¿de que están hablando?
373	T	Memories ósea ¿que en que tiempo va a estar?
374	SS	Pasado
375	T	Very good guys (Listening activity being played)
376	T	Ok ok? One more time or that's it? You write the questions the questions they ask, the questions (Listening activity being played, second time)
377	T	Ok guys what about rosa?. What was she talking about California, mexico or florida?
378	SS	Mexico
379	T	Yeah mexico what about. Well it was in the beach or it was in the?
380	SS	Beach
381	T	Good ok what about. Yo estoy en contra de esta foto porque me parece que promueve los estereotipos si por que habla de la chica y ¿qué dice de la chica?
382	SS	Que es inteligente
383	T	Que es inteligente y bonita si me entienden entonces como que en las dos fotos muestran a dos mujeres y creo que está promoviendo los estereotipos y yo supongo que ellos dicen que la bonita y la inteligente es la de este lado, si me entienden y me parece algo como que muy discriminatorio, ¿sí o no? Hay cosas que a veces los libros comunican que no nos damos cuenta fácilmente y me parece bueno que también se den cuenta de esto. Ok guys que dice entonces bueno esa la ignoramos. Que dice entonces de la de las chicas ¿que era? British or American?

384	SS	British
385	T	Ok chicos muy bien entonces ¿cuál fue la pregunta que hicieron?... siempre se me olvidan es que ya tengo muchas historias con puertas así con las puertas de mi casa
386	SS	(Laughing)
387	T	Ok chicos haber la primer pregunta que hizo rose ¿que? ¿que? ¿Que le hizo? that was your best vacation? ¿Cual dice ella que fue su mejor vacation?
388	SS	(xxx) : inaudible, not clear
389	T	Ok what type of vacation was? What type ¿que tipo?
390	S	Family
391	T	Family vacation yeah! Was it good?
392	SS	yes(xxx) : inaudible, not clear
393	T	Ok yeah, how how were the beaches?
394	S	Sunny
395	T	Sunny! and hot. ¿Había mucha gente o poca gente en la playa?
396	S	People of her age
397	T	(xxx): inaudible, not clear What is the second question she asked?
398	S	How old
399	T	How old very good Stefanie how old. You are so very good at listening. How old, how old How old? I am sorry guys cuando tengo gripa no funciona bien

400	SS	(laughing)
401	T	How old? No sé si se han dado cuenta how old were you (xxx) : inaudible, not clear. Ok how old were you?
402	S	(xxx) : inaudible, not clear
403	T	Exacto si verdad ¿y respondería? How old were you? How old was she seventeen?.... seventeen? Let's listen
404	SS	Students talking in Spanish (xxx) : inaudible, not clear
405	T	Teacher laughing (Listening activity being played for the third time)
406	T	How old was she?
407	SS	Seventeen
408	T	Seventeen y la tercera pregunta ¿cuál es? (Listening activity being played for the rest of the recording)
409	T	Cual fue la pregunta?
500	SS	(laughing)
501	S	¿Que si cuantos años tenia?
502	T	Why?
503	S	Was it so good?
504	T	Why? Was it so good?... Why was it so good? Y por que fue ok why was it so good ok good
505	S	(xxx) : inaudible, not clear

506	T	ok why was it so good ok good
507	T	What about the fourth question? Let's listen and let's find the fourth question (Listening activity being played for the fourth time)
508	T	¿Cuál es la pregunta?
509	S	First love
510	T	Ah? ¿Cuál es la pregunta cuál es el tipo de preguntas que estamos haciendo?
511	S	Doble u
512	T	Double h questions ¿si o no? Entonces si estamos preguntando por una persona cual sería la double h question? Who como entonces sería el resto de la pregunta?
513	S	Who was you girlfriend?
514	T	Who was your first girlfriend? Yes, que responde ¿el? ¿que responde el?
515	S	That he was
516	T	No ¿pero qué responde él? (Listening activity being played for the fifth time)
517	T	¿Cual es la pregunta? How old were you? ¿y que responde? (Listening activity being played for the fifth time)
518	T	¿Cuantos años tenía?
519	SS	16
520	T	¿Los cuantos años tenía?

521	SS	Sixteen
522	T	¿Y su novia?
523	SS	Fifteen
524	T	Very good karoline ok (Listening activity being played for the fifth time)
525	T	¿Cual fue la pregunta?
526	S	(xxx) : inaudible, not clear
527	T	What?
528	SS	(xxx) : inaudible, not clear
529	T	What was her name? very good. What was her name? what was her name? ¿y que responde el? (Listening activity being played for the fifth time)
530	T	¿Se acuerda el de su primera novia? ¿de su primera novia?
532	SS	No
531	T	A ok guys
532	SS	Students talking in Spanish
533	T	Ok guys finish para terminar. Vamos hacer esto individualmente así vamos a coger nota del segundo corte.... Guys ready?
534	SS	Students talking in Spanish
535	T	Guys, guys in one hundred words en 100 palabras en 100 palabras write about a good memory that you have. Ok write about. Write cien words mínimo,

		pueden pasarse ok pueden pasarse chicos una escribe 10 palabras por cada renglón. (xxx) : inaudible, not clear
536	S	¿En grupo profe?
537	T	No individual
538	SS	No no (xxx) : inaudible, not clear
539	T	Chicos, chicos ojo es como el que esta guíense en el texto de sally a paragraph
540	SS	(xxx) : inaudible, not clear
541	S	¿Profe pero palabras o párrafo?
542	T	Un párrafo de 100 palabras ¿si me entienden?
543	S	Es que yo no tengo recuerdos
544	S	Lo que pasa es que a veces (xxx) : inaudible, not clear
545	T	Chicos miren
546	S	For example
547	T	Observemos el texto chicos miren si ven que hay un párrafo aquí bueno normalmente tiene un buen número de palabras más o menos tiene 150 palabras este párrafo. Si cuantas tienen? (xxx) : inaudible, not clear
548	SS	(laughing)
549	T	Chicos bueno este párrafo tiene como un dos tres cuatro, cinco, seis, siete, ocho, nueve, diez, diez palabras por renglón normalmente, si entonces usted cuenta el número de renglones por diez uno, dos, tres, cuatro, cinco, seis siete, ocho ocho palabras, este parrafito así tiene como ochenta palabras.... Si cuentas las palabras desde el primer renglón y cuentas (xxx) : inaudible,

		not clear
550	T	(caughing) ¿chicos obviamente van a tener que usar qué?
551	SS	Pasado
552	T	Very good guys. You are so good
553	SS	Students talking in Spanish (xxx) : inaudible, not clear.
554	T	Williana ¿terminaste?
555	SA	No
556	T	No me distraigas a María Camila. Que está distraída hoy María Camila
557	SB	no voy hacer nada.
558	SS	Students talking in Spanish (xxx) : inaudible, not clear.
559	SS	Students (laughing)
560	S	C o h, c o h, aja y entonces? Students talking in Spanish (xxx) : inaudible, not clear.
561	T	Chicos, para la próxima clase estudien la unidad 7
562	S	Y si va a venir el próximo martes
563	T	Yes of course
564	S	¿Y a qué hora?
565	T	What?
566	T	Muñoz, can you help me? Esteban

		Thank you.
567	SS	Students talking in Spanish (xxx) : inaudible, not clear.
568	T	No guys I'll be back in a minute, chicos ya regreso en un momentico.
569	SS	Bueno teacher, Students talking in Spanish (xxx) : inaudible, not clear.
570	T	Ok guys do you have any problem any trouble? (xxx) : inaudible, not clear.
571	SS	Students (laughing)
572	SS	Students talking in Spanish (xxx) : inaudible, not clear.
573	S	¿Mister cómo se escribe fue, mister fue? ¿Fue de haber sido?
574	S	¿Cómo así?
575	SS	Students (laughing)
576	S	Bueno nos vemos el próximo jueves recuerden que hay que traer el informe
577	S	Ingrid, ingrid no hay que mandar Students talking in Spanish (xxx) : inaudible, not clear.
578	S	Osea no se encajar las palabras si me entiendes
579	S	¿Cómo así?
580	S	Ósea no se armar una oración....
581	S	Profe Students talking in Spanish (xxx) : inaudible, not clear.
582	S	Profe?
583	SS	Mister,

584	S	Todo hoy habían dicho profe. (xxx) : inaudible, not clear.
585	T	Ok guys so see you next class. That is going to be the homework everybody should be ready for next class. Thank you for coming.
586	SS	Ok teacher bye.
587	S	Bye teacher
588	T	Bye my friend. See you.

Appendix J. Transcript of the microbiology class observation

OBSERVATION TRANSCRIPTION FORMAT

Observation class. Teacher: Yenis Pastrana (Food Engineering program)

Observation: 2

Semester: 4 (Fourth)

Subject: Microbiology 4

Program: Food Engineering

Date: January 28 / 2019

Conventions:

Information in parenthesis corresponds to observer's comments

Conventions:

O: Observer

T: Teacher

S (A, B, C, etc.): Each letter refers to a different student

SS: Students in chorus

(xxx) : inaudible, not clear

.... : silence

URNS	QUESTIONS AND ANSWERS
1 O	En esta clase, la docente encargada de la materia empieza su clase en un salón diferente para el propósito de la misma teniendo en cuenta alguna variables como la ausencia del fluido eléctrico. Por otro lado, en esta sesión los estudiantes debían realizar la sustentación grupal del material de lectura asignado con posterioridad por la docente.
1T	Bueno sustenta por favor, cuéntame ¿de que se trataba tu artículo?
2 S	Mmm bueno nuestro artículo, instrumentos analíticos y microbiológicos combinados para evita, para estudios de efectos sobre la... esperpilus xxx en aceite esencial de canela contenida en baso de aluminio... eee bueno este articulo
3 T	No puedes tener nada xxx
4SA	Nos habla de , bueno ahí nos habla de un procedimiento, primero habla en general
5T	Bueno ¿cuéntame de que se trata?
6SA	Si de la mico toxina que son sustancias toxicas que se encuentran en los hongos, bueno eee el

	de nosotros era del asperpilu xxx y ahí se encuentra el afro afro
7T	Pasma xxx
8SA	Afro toxinas mmm ahí nos hablaban de un procedimiento pues este ...
9T	¿Cuál es el objetivo de esta investigación?. ¿Qué querían ellos buscar?
10SA	El aceite ese... esencial de la canela ... a ver si era xxx ... en el base que contenía el virus
11T	Xxx al embace que contenía el virus no entiendo.
12 SC	Osea ellos lo que hicieron fue, tomaron materiales de embazados como el pet, el papel y el carbón y ... ósea para poder observar si ahí si
13SS	(Students laughing)
14 T	Bueno yo veo aquí que el articulo dice, los objetivos principales de este trabajo eran primero, analizar la influencia de xxx en l actividad para desarrollar en materiales que contuvieran el aceite esencial xxx El segundo objetivo era proveer información que les permitiera desarrollar un modelo para actuar con estas sustancias. Permitiéndole analizar el comportamiento del moe en este caso eeee en forma pura en el envase, ¿me dicen que utilizaron? ¿pet y?
15SA	Carbón y papel
16 T	¿Ósea me dicen que utilizaron tres empaques?
17SA	Tipos de papel y xxx
18 T	¿Cómo así?
19SA	Pet que era el xxx
20 T	Pet ok
21SA	Pet el tipo de papel y carbón
22 T	Ósea eran tres tipos de empaques xxx ...ok entonces explícame ese procedimiento ¿en qué consiste ya en la parte metodológica?
23SA	Ellos tomaron la caja de pet yyyy luego tomaron la sepa de moe aspa virus xxx y entonces adicionaron unos reactivos, tales como la levadura, xxx esos eran los reactivos que ellos adicionaron ahí.
24 T	Estamos en la parte xxx que dicen de microorganismos. ... aja
25SA	Floruro de sodio y ... agua destilada
26 T	aja
27SA	Entonces eee ...
28 T	Teacher Reading

29SB	Xxx ósea el medio se llama xxx esta con la sigla YB ósea por medio de xxx utilizaron para que creciera el hongo y agregaron unas sustancias ahí fluoruro de sodio ... que más ya tenemos claro en que creció el microorganismo
30SA	Xxx
31SB	Bueno se hicieron dos procesos...
32 T	Ok cuéntame de los procesos
33SB	OK icioelproces xxx donde ponían a crecer al moe en el medio de cultivo y el aceite esencial de canela y otro donde ponían el aceite esencial de canela para determinar ósea en cuanto crecía. En el aceite esencial este en general el moe crecía lentamente l diferencia de xxx donde tendía a crecer más rápido. En el aceite esencial de canela querían determinar si en el aceite era capaz de evitar que siguiera creciendo. Entonces luego después de este unos incubaciones de una zeta xxx pudieron determinar que el aceite esencial de canela si era un si era limitrofito que tenía una actividad antifunjica
34 T	Si vemos que xxx
35SB	Y también iniciaron una comparación con el aceite esencial de orégano para ver si en cual aceite necesitaba mayor o menor concentración para el desarrollo del moe, entonces determinaron que el aceite esencia de canela tiene menor concentración para el xxx
36T	Eee ¿Diego cual es el vocabulario relacionado? ...
37SS
38T	OK pueden salir y me manda al otro grupo ... y esperamos a ver si nos llega la luz
39T	Son cinco verdad siéntense
40SS	(Students organizing in the classroom and taking seats)
41T	Bien maría Isabel
42SA2	Si
43T	Cuéntame del articulo
44SA2	Eee a nosotros nos tocó el articulo número cuatro se llama reevaluación de las ejecuciones de las micro toxinas en la leche de vaca en argentina. esto fue un estudio que se realizó a mediados del 2010 con una análisis cuantitativo que lo que quería era mirar el nivel de mictotoxinas en la leche de de vaca de de ciertos ganaderos, esto codujo con el fin, esto con el fin de mejorarles la base de regulaciones políticas y con el objetivo de investigar también disminuir los riesgos e mico toxinas en la leche y evitar de pronto enfermedades en seres humanos y y animales como sabemos las mico toxinas son eee...
45SB2	Xxx
46T	Eso eee que pena metabolitos secundarios que son provenientes de hongos y en este estudio utilizaron principalmente tres que son como unos de los más comunes que son uno de ellos fue la flactoxina B1, el segundo fue eee
47SC2	Dioxivalenol
48SA2	Dioxovalenol que tiene como iniciales DOL y una tercera micro toxina que se llama
49SC2	Ciaralenol

50SA2	Ciaralenol eee la la toxina B1 es proveniente del asperfilus xxx y la e la la DON
51SC2	Dioxivalenol que es proveniente del usuario y la otra que xxx
52 T	Gravi xxx
53SA2	Gravi xxx esa. Bueno entonces esas fueron las tres que usaron ara hacer el estudio luego lo que hicieron fue eee hicieron como una simulación con con una técnica que se llama la técnica de Montecarlo, ya después empezaron hacer el estudio y lo que hicieron fue tomar la base los datos de entrada de ciertos sistemas lecheros argentinos, también utilizaron opiniones de expertos, literatura científica y y bueno ósea en este caso en eso fue lo que basaron el estudio.
54T	Juan José yo aquí veo una un gráfico, un esquema del articulo donde me explican un poco la metodología de la muestra parece ser lo que estoy viendo aquí en el artículo. ¿Me lo explicas por favor?
55SC2	Bueno eso es ahí parece que muestran la mico toxina que se tuvieron en cuenta
56T	No no es un cuadro, es un cuadro con el que arranca el artículo como un cuadro sinóptico
57SC2	¿No es?
58SD2	La comparación entre (xxx)
59T	Exactamente, supongo que es donde explican
60SD2	Las dos comparaciones entre (xxx)
61T	Correcto
62SS	(Xxx)
63SC	En que se estaban basando para hacer esa selección... totalmente visible está muy grande.
64SA2	Es que nos tocaron las dos temporadas
65SC2	Temporada de otoño y temporada de primavera. Ellos hay explican principalmente que estas mico toxinas aumentaron en otoño y son xxx en primavera, esto debido a que principalmente ...
66SE2	Xxx el maíz y concentrado
67SB	De hecho veo cuatro dietas en qué consistía cada dieta?
68SA2	En el consumo es que xxx
69SC2	Ese pedacito no lo sé se me escapa
70T	Bueno ¿cual pedacito no se te escapa cuéntame?
71SD2	Ósea sobre el articulo también hablaba principalmente de que si esto lo provocan hongos y tenía que ver mucho sobre el almacenamiento, las cosechas, ósea que debido a esto principalmente las mico toxinas aparecían en esta época
72T	¿Cuál época? por que habían dos épocas
73SA2	En la cosecha
74T	Pero cual cosecha, si estamos hablando es de leche
75SA2	La cosecha de la materia prima de los alimentos
76T	Pero de la dieta

77SC2	De las dietas eee
78SS	¿Cuáles son las dietas?
79SD2	Silo de maíz y concentrado base de granos
80SB2	Pero es que ghabia falfa, había algodón, si decían by products es decir otros productos que mezclaban
81SE2	Si a si productos industriales que utilizaban
82T	Erney cuéntame cual es el vocabulario relacionado?
83SC2	¿El vocabulario? Esta las mico toxinas eee
84T	Por eso pero me lo dices en inglés y en español
85SC2	A ósea
86SB2	Porque ese es el vocabulario, si por que el vocabulario en español no tendría gracia por eso el vocabulario relacionado era una solicitud, ni no lo colocaron no me lo inventen
87SA2	No no lo colocamos, solamente ósea dijimos cada xxx
88SS	Si lo colocamos pero no el significado
89SS	Hay no se jajaja
90SB2	La torpeza del año jajaja
91SA2	Eee... (xxx) muy importante
92T/SS	Jajaja (xxx)
93T	Yo buscando que ustedes sean capaces de
94SC2	Es que si buscamos las palabras claves pero en español
95T	No mijo las palabras claves ósea en inglés y en español para que entendieran ósea esa era una de las finalidades para nosotros poder identificas esas palabritas en inglés para dijeran tal tal tal. Listo chicos pueden salir. Me mandan el informe (xxx) jajaja...
96SA3	Buenas
97T	Son cinco está bien
98SS	Si
99T	Cual falto una
100SA3	Si una
101T	Ok Jesús cuéntame del articulo
102SB3	Bueno profe el articulo trata sobre, bueno el artículo se hizo o lo hicieron en Kenia trata de una una ... afro toxina que son dos hongos que se dividen en arperfilius xxx
103T	¿Cómo se llama tu artículo?
104SB3	El artículo se. ¿En ingles o en español?
105T	No en español óseo ¿cuál es el nombre de xxx?
106SB3	El manejo previo a la cosecha es una práctica critica para minimizar la contaminación con las afro toxinas del maíz
107T	La contaminación del maíz por afro toxinas Ok listo aja
108SB3	En general hay dos hongos los cuales son perfiluiis flauy el perfiluiis parasiticus
109T	Perfilius para xxx

110SB3	Ok entonces estos se dan en condiciones ambientales en temperaturas altas y humedad grande eee como venía diciendo que se dio lo hicieron en Kenia en 10 estados en 10 estados de Kenia se ubicaron en diez estados a un kilómetro de distancia eee ...
111T	Cuál fue el objetivo de la investigación?
112SB3	A el objetivo
113T	si ósea primero me tienes que contextualizar ¿porque van hacer hacerlo y es como si fuera la justificación?
114SC3	¿Profe nosotros podemos hablar?
115T	No
116SB3	El objetivo fue eee como el maíz en Kenia es el segundo más utilizado después del trigo, entonces como es uno de los más utilizados querían saber si como como ... en pocas palabras como duraba si tenía riesgo a dañarse y así
117SC3	Él se la sabe profesora si no que está muy asustado.
118T	Esta nervioso
119SC3	Esta nervioso profesora él se la sabe
120T	Si quieres te pones de espalda miras para allá. esta nerviosos
121SD3	Si quiere pregúntele de ultimo pero es que
122T	no aja tu tranquilízate si te lo sabes
123SS	Nosotros participamos
124T	No ya respira profundo y ya yo estoy clara ya entendí que están haciendo un estudio del maíz en ese país en Kenia, cuáles eran los microorganismos. Perfecto, entonces yo ahora lo que yo te pregunto es ¿cuál es el objetivo que era lo que ellos querían identificar? siempre que uno xxx uno se traza un objetivo esto, esto y esto quiero saber tal cosa, que se obtiene si ese es el objetivo de la investigación que siempre se obtiene en la parte introductoria de los artículos, generalmente las introducciones cierran diciendo y nuestro objetivo era xxx
125SB3	seño el objetivo como el maíz se encuentra en diferentes alimentos ya sea en cereales, en frutos secos.
126T	Que se encuentra en esos alimentos... ¿las micro toxinas?
127SB3	Aja
128T	A ok
129SB3	Entonces son susceptibles a contaminación biológica que ...y se ven y también que estas mico toxinas tienen diferentes aspectos ya que pueden ocasionar o ocasionar cáncer al ser humano
130T	cuéntame de la metodología ¿cómo lo hicieron? aquí dice estudio de xxx como lo hicieron con eso habla de la metodología
131SB3	¿El flujo grama?
132T	Si el flujo grama porque eso era parte del método de la metodología por eso te estoy diciendo empíezame a explicar ¿cómo lo hicieron?
133SB3	Bueno comenzaron primero con la documentación bueno la documentación como venía

	diciendo que que había principales responsables en la producción de afro toxinas que eran que son dos especies de hongos ya mencionadas
134T	Ya me habías dicho eso, yo quiero que me expliques como hicieron el experimento.
135SS	Podemos hablar profe
136T	Me dicen que él sabe
137SC3	Si si no que el esta xxx
138T	Mira aquí en el artículo xxx
139SB3	A si bueno que se tomó un campo abierto
140T	Aja
141SB3	En el cual se seleccionaron diez agricultores y se separaron como venía diciendo a un kilómetro de distancia a cada uno de ellos con el fin con el fin de tener un un experimento efectivo eee ...
142T	No entiendo, kevin
143SC3	Dígame seño
144T	Cuéntame ¿cuál fue la experimentación?
145SC3	Bueno si había unos que trataban de buscar como Kenia era uno de los países mayores productores de maíz. Entonces ¿ellos que hicieron? Fueron al estado de Kenia y cogieron una parte del este y una parte del sur oriente. Pero en el este ya esas ciudades tenia documentación reportada sobre las altas tasas de intoxicación y de cáncer a las micro toxinas mientras que en el sur oriente no habían documentos de este. Entonces ellos que hicieron ellos se basaron principalmente en hacer estos estudios y las investigaciones en el sur oriente que no habían esas tasas de mortalidad o de documentación sobre esto. Entonces ellos ahí fue que cogieron, como lo venía diciendo el compañero agricultores, entonces tomaron una distancia de cinco kilómetros, entonces ellos venían y cogían
146T	No era de una
147SC3	De cinco de cinco kilómetros entonces ellos ahí cogieron el maíz principalmente el maíz todavía estando cultiva ósea xxx que viene siendo la máxima ... antes de ser antes de ser recolectado ósea que ya tiene su maíz su. Entonces ellos vinieron ahí y fue que hicieron el estudio y en uno de sus estudio será fue que principalmente para ver las proteínas que tenía y cuál era la causa sobre esto, entonces ellos se dieron cuenta que uno de los principales de esto podría ser el suelo
148T	Aja
149SC3	Entonces eee ellos vinieron en ese estudio también el de las proteínas y creo que también lo hicieron con la compañía xxx ... no es como una compañía
150SS	Es un método
151SC3	No es como una compañía si no un método
152T	Una prueba
153SC3	Una prueba epa de Eliza y también otra que bican que también viene siendo ósea la bican fue como la especifica que se trata en si en sí de las mico toxinas que son un tipo de estas entonces ellos aquí cogieron el estudio y demostraron entonces que finalmente que fue lo

	que hicieron en el estudio ellos vinieron y se dieron cuenta que en el que en el este Kenia una taza más o menos como del 63% porque ellos en sí tuvieron 416 pruebas y de esas 416
154T	¿Pruebas?, pruebas o muestras?
155SS	Muestras
156SC3	Muestras muestras y de esas 416 más o menos como 27° y pico más o menos el 66% dio que tenían la flatoxina estos alimentos. En cambio en el sur oriente donde no se habían echo estos que no habían reportes de estos también hubo una gran cantidad de esto que fue 373muestras que se hicieron y mas o menos como 233 como un 63% de estas reportaron que había índice de esto entonces hicieron ese estudio más o menos como para dar a entender que que no es tanto a nivel de Kenia si no xxx
157T	María patricia ¿vocabulario relacionado?
158SD3	Eee xxx
159T	¿Lo incluyeron en el trabajo? si no no me lo digan
160SS	...
161T	Ok entonces pueden salir ya voy ahora a hablar con todos
162T/S	Talking about the excuse for missing to a class and a quiz.

Appendix K. Narrative text used in the English reading class

Sally goes to the university

UNIT

2



Sally was nineteen years old. She had always lived with her parents, but now the time had come for her to go to university in another part of the country to study to be a doctor. Her mother was very sad about this, and she was also afraid, because she loved her daughter very much, and she thought, "My little girl will be alone for the first time in her life. She won't know anybody. There will be nobody to look after her, and perhaps she will have trouble, or she will be very sad because she isn't with us."

Sally said goodbye to her father and to her cat, and promised to telephone every week. Then her mother took her to the university by train. When they said goodbye, her mother cried, and on the way back home she cried again.

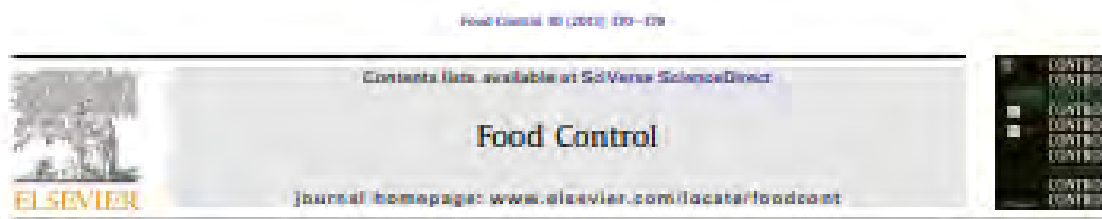
Then every week Sally kept her promise and telephoned. They talked for several minutes, and Sally was always very happy and never said that she missed her parents. Her mother was not glad about this. She thought, "Perhaps she's finding the university nicer than her home."

But then some holidays were getting near. That week, when Sally telephoned her parents, she said, "The students who live here were talking yesterday evening, and they said, 'We're very happy that we're going to return home again soon for a few days.'"

Sally's mother was very glad that the students had said this. "She must really miss us," she thought. Then she said, "And did you say that too?"

"Oh, yes!" Sally answered. "We all said that it's easy to speak to our parents on the telephone every week when we're away, but we really miss our pets!"

Appendix L. Research article used in the microbiology class



Combined analytical and microbiological tools to study the effect on *Aspergillus flavus* of cinnamon essential oil contained in food packaging

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ABSTRACT

Cinnamon essential oil has been used for centuries to protect food from microbiological infection, and in the last ten years cinnamon essential oil is also incorporated into food packaging materials as antimicrobial agent. However, very little is known about the real effect that it has on the microorganism cells. This study combines analytical and microbiological tools to elucidate cell damage produced on *Aspergillus flavus*. First, antifungal activity of cinnamon essential oil was evaluated at 10^2 , 10^3 , 10^4 and 10^5 CFU/ml. Minimal Inhibitory Concentration (MIC) and Minimal Fungicidal Concentration (MFC) were determined by macrodilution in direct contact with the mold. A strong activity was obtained, with a MIC of 0.05–0.1 mg/ml, and a MFC of 0.05–0.2 mg/ml, both ranges depending on the initial fungal suspension.

Polyethylene terephthalate films containing cinnamon essential oil were tested in vapor phase without direct contact with the mold. Active PET started showing activity at 2h CIN EO load and produced total inhibition at 4h CIN EO. SEM and FTIR were used to study the cell damage on the mold exposed to the cinnamon essential oil. Evident damage and a strong decrease in sporulation were found by SEM, while biochemical changes in conidia could be suggested from the FTIR spectra analysis. Two deposition techniques were used to prepare the samples for FTIR. The results obtained are shown and discussed.

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1. Introduction

In the last ten years many studies have been published about the development of active packaging materials, most of them focused on food applications (Becerra, Gomez-Lus, Cori, Lopez, & Nerin, 2007; Cori et al., 2000; Lopez, Sanchez, Batlle, & Nerin, 2005; Lopez, Sanchez, Batlle, & Nerin, 2007a; Nielsen & Rice, 2000). This is an area of great interest for both industry and academia, as the introduction of protective agents in the packaging materials can be used to protect the food without direct addition of new chemicals. The current trend of having more natural and ecologically produced foodstuffs, while simultaneously requiring longer shelf life, is a challenge the food industry has to face. One key point in this research is the selection of the active agents, i.e. the protective substances to be incorporated into the packaging materials (Coria, 2008). Natural extracts, such as essential oils (EO) and their constituents, are categorized as flavorings in Europe (European Decision 2002/111/EC of January 23rd, 2002, notified under

document number C(2002)88). In addition, essential oils and their constituents are categorized as GRAS (Generally Recognized as Safe) by the US Food and Drug Administration. For this reason, essential oils (EOs) have been often proposed and used as antimicrobial, antifungal and antioxidant agents, in general with good results (Gutiérrez, Batlle, Sanchez, & Nerin, 2010; Gutiérrez, Encarnera, Batlle, & Nerin, 2009; Gutiérrez, Sanchez, Batlle, & Nerin, 2005; Rodríguez, Batlle, & Nerin, 2007; Rodríguez-Lafuente, Nerin de la Puerta, & Batlle, 2009). Among them, cinnamon EO has demonstrated a strong antimicrobial activity, although most of the studies show the behavior versus bacteria and only few reports are dedicated to molds. It is not possible to compare antifungal and antibacterial activity (Gharbourn & Rice, 1999). Furthermore, antifungal activity is studied and reported using widely variable methodology, as there are no standard protocols to test EO on fungi (Holley & Patel, 2005; Tullio et al., 2007). Molds are difficult to inhibit due to their complex structure. They reproduce through spores, from which they grow in the form of multicellular filaments called hyphae. The interconnected network of hyphae forms the mycelium, and supports the fertile conidiophore containing the spores that can be propagated. There are thousands of known species of molds, some of which are

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opportunistic pathogens which can cause serious diseases, even with lethal effects (Fischer & Dett, 2003; Samson, Hoekstra, & Friess, 2004; Samson, Moubratou, Thame, Friess, & Anderson, 2000).

One of the most common mold genera is *Aspergillus*, which is a pathogen for plants, animals, and humans that produces aflatoxin, a potent carcinogen (Fischer & Dett, 2003) that can also cause acute or chronic intoxication upon ingestion of contaminated food (Riba et al., 2010). This highlights the importance of inhibiting this particular mold in foodstuffs.

It is generally accepted that the release of the active substance depends on the underlying substrate (plastic film, paper, cardboard...), as happens in most of the cases with bacteria. However, the metabolism of molds is very different and the influence of the substrate and formulation on the release kinetics should be studied.

Mold inhibition is mediated by the biochemical interaction between the antifungal substance and the microorganism. However, this interaction has not been studied in depth yet, and only macroscopic effects have been reported. Thus it is not clear whether the mycelium or the spores are affected, and whether this effect is concentrated in the membrane or inside the cell.

For the purpose of active packaging material design, it is not only necessary to demonstrate the antifungal activity, but also to establish which compounds are responsible for those properties, and what the optimal concentration is to obtain maximum inhibition. On the other hand, in order to study the mechanism of action of the essential oil, few analytical techniques can be applied as most of them are destructive for the cells. In the last decade, high resolution FTIR (HR-FTIR) has become a powerful technique to identify cell biochemical composition (Boire, Gough, Julian, & Karimsky, 2008). Although the spatial resolution is limited, the non-destructive character and the selectivity of the specific bands associated with selected functional groups, allow studying changes produced by the exposure of the microorganism to the active packaging materials. Cellular changes can also be studied with high spatial resolution by scanning electron microscopy (SEM). Although this technique does not provide the biochemical selectivity needed to detect subtle changes in the sample, it is a powerful complement to observe clearly the integrity loss of the cell wall.

The two main objectives of this work are: i) to analyze the influence of the substrate on the antifungal activity versus *Aspergillus flavus* of several packaging materials containing cinnamon EO as active agent and ii) to provide data to elucidate the mode of action of this substance. Microbiological performance of the mold is analyzed in the presence of the active agent in pure form and as released from the packaging materials (PET and paper). Cell damage is assessed in the presence of cinnamon EO released from the active packaging materials.

2. Materials and methods

2.1. Microorganism and culture media

Strain of *A. flavus* CECT 2549 (Colección Española de Cultivos Tipo) was provided by the Department of Microbiology of the University of Valencia (Spain). For the culture media, Czapek (CZF) as solid media and Yeast Extract Broth (YEB) as liquid media were employed, all supplied by Scharlau (Spain). As diluents, distilled water with 0.1% Tween 80 and physiological solution (NaCl 0.9%) were used, both provided by Panreac (Spain).

2.2. Reagents

Cinnamon essential oil (CIN EO) from the bark, fortified with cinnamaldehyde (cinnamon caryophyllene, CAS 8015-91-0) and with

a final concentration of cinnamaldehyde of 500 mg/g was supplied by Argofide (Spain). Cinnamon EO from the leaves usually contains eugenol as major component and little amount of cinnamaldehyde. The efficiency of this latter EO as antimicrobial agent has been demonstrated to be much lower than that coming from the bark. The CIN EO was fortified by the company Argofide, who certifies the final concentration of cinnamaldehyde. Minor components such as β -caryophyllene, linalool and safrol were also present but their influence was very low, according to the previous studies mentioned above. Ethanol without stabilizer, HPLC grade, was supplied by Scharlau (Spain). Appropriate dilutions of the pure CIN EO in ethanol were used for some experiments. Glutaraldehyde, sodium cacodylate and sucrose, all provided by Panreac (Spain) were used as dehydration reagents.

2.3. Active PET

Active PET containing CIN EO was provided by Artibal (Sabirubirga, Spain), and consisted of a 25 μ m thick layer of PET coated with an organic solvent base formulation containing the essential oil. The grammage of the coating was between 2.0 and 2.5 g/m². Active PET layers with 2, 4, 6 and 8% CIN EO amounts were tested, whose each percentage point amounted in 0.0355 g/m².

2.4. Minimal Inhibitory Concentration (MIC) and Minimal Fungicidal Concentration (MFC)

A. flavus inocula of 10³, 10⁴, 10⁵ and 10⁶ CFU/mL were prepared in NaCl 0.9% and confirmed by plate counting. MIC values were obtained by microdilution in Yeast Extract Broth (YEB) test tubes (Martín, Nolin, & Gómez-Liñ, 2010). Similar methodology has been employed by other authors in the antifungal determination of the EOs (Mitchell, Scarsford, de Sousa, Lima, & Curran, 2010; Rasooli & Droita, 2005; Rasooli, Rezaei, & Allahzadeh, 2006). Samples were prepared as follows: first, serial dilutions of CIN EO in ethanol were prepared in the range from 100 mg/mL to 2.5 mg/mL. Tubes containing 1.78 mL of YEB were inoculated with 200 μ L of fungal suspension and 20 μ L of CIN EO dilution, so that the final EO concentration in the sample tubes was diluted by a factor 100. Controls with 20 μ L of ethanol were added to the test. The same procedure was employed for the 4 fungal concentrations. The samples were incubated for 48 h at 25 °C under continuous shaking, except those with the lowest fungal concentration, which were incubated for 72 h to ensure complete mold growth. To assure no changes versus time and confirm final MIC concentrations, test tubes were kept in the incubator at 25 °C for a total of 5 days.

After incubation, the lowest EO concentration with non-growth was named the MIC. Evident development of a mycelium mass was observed in the glass tubes in the case of non inhibition. Below the MIC, subinhibitory concentration was determined as that with reduced growth compared to the control.

To determine the minimal fungicidal concentration, 100 μ L of the non-growth suspensions were seeded with a sterile Drigalsky spore onto Petri dishes containing 15 mL of CZP. After 5 days of incubation at 25 °C, the MFC was determined as the lowest concentration where no colony had developed.

The MIC and the MFC were both determined three times by duplicate.

2.5. Antifungal characterization of active PET

A. flavus was incubated on CZP for 7 days at 25 °C. Suspensions of 10⁴, 10⁵ and 10⁶ CFU/mL were prepared as in the previous assay, and 100 μ L of each population were seeded with a sterile Drigalsky spore onto CZP Petri dishes. PET films were evaluated in vapor

phase, i.e. without any contact with the microorganisms, by placing them over the top of the Petri dishes instead of the lid (Lopez et al., 2007a; Rodriguez et al., 2007; Rodriguez, Novin, & Bañilo, 2008). The active material was sealed to the Petri dish using a nylon cable tie. The distance between the plastic film and the culture medium in the Petri dish was between 0.8 and 1.0 cm.

As a first short-term experiment, incubation was carried out for 12 days at 25 °C with the agar at the bottom, following mold development with time for the different CIN EO loads.

After this test, the long-term antifungal performance of the material was studied with two parallel experiments:

- durability of the antifungal activity
- stability of the antifungal properties

In order to assess the durability, the Petri dishes were incubated for two months at 25 °C, to check for possible changes in fungal growth.

The stability of the antifungal properties was studied by storing new active materials at 4 °C for two months, and then using them to perform the same short-term experiment as above.

Finally, the fungistatic or fungicidal character of the films that caused total inhibition was determined in two different ways. Half of the samples from the previous experiments were released from the CIN EO exposure by replacing the active PET film with a new cover lid, which had been previously sterilized by UV light exposure for 20 min. The other half of the samples were washed with 9 mL of distilled water containing 0.1% Tween 80, seeded onto new CZP Petri dishes and incubated for 7 days at 25 °C. The CIN EO load of the film was then determined to be fungicidal if the mold did not develop, and fungistatic otherwise.

The whole antifungal performance assay was performed twice by triplicate.

2.6. Scanning electron microscopy

Morphological changes in the mold resulting from exposure to vapor of CIN EO were studied by SEM. Samples were prepared as follows. CZP Petri dishes were seeded with 100 μ L of 10^8 CFU/mL suspension using a sterile Drigalsky spatula. Whatman 9 mm paper discs containing 10, 20 and 30 μ L of cinnamon EO were placed over the top of the Petri dish. All the samples were closed with parafilm to simulate natural leakage of volatile compounds, and incubated at 25 °C with the agar at the bottom. After 6 days of incubation, a 1 mm² piece of agar close to the inhibition area was cut, detached and placed into a test tube containing 2.5% glutaraldehyde in sodium cacodylate buffer with sucrose, leaving it overnight at room temperature for fixation. The following day, the cacodylate buffer was removed from each tube and the sample was washed with 1 mL sterile distilled water for 20 min. The samples were then dehydrated following the same procedure described above and kept at 4 °C in the last dehydration step (100% ethanol) for a week until used (Sharma & Tripathi, 2008). At the moment of the study, dehydrated agar pieces were placed on a small slide cover and sputtered with gold. SEM images were acquired with an Inspec P scanning electron microscope (FEI), working at 5–30 kV and reaching a resolution of 15 nm.

2.7. FTIR microspectroscopy and data analysis

Biochemical changes in the spores resulting from the exposure to CIN EO were studied by FTIR microspectroscopy. The molds were cultured as follows. Petri dishes containing 15 mL of CZP were inoculated with 100 μ L of a 10^8 CFU/mL fungal suspension and seeded with a sterile Drigalsky loop. Whatman 9 mm paper discs containing 10 μ L of CIN EO were placed over the top of the Petri dish, in order to

induce an inhibition zone in the inoculated culture medium by vapor phase. The Petri dishes were closed with parafilm and cultured at 25 °C with the agar at the bottom. Control samples were prepared in the same way, but without adding CIN EO to the paper disc.

The spores were then collected and prepared following two different procedures. In the first one, spores from around the inhibition zone were harvested with a sterile loop, placed into a microtube containing 1 mL of sterilized distilled water, and subjected to two centrifugation steps of 7 min at 2892 g. Subsequently, 600 μ L from the final pellet were deposited onto IR supports (4 mm thick ZnSe discs with a diameter of 40 mm). FTIR spectra were collected in transmission geometry on a Bruker Vertex 70 interferometer coupled to a Bruker Hyperion 2000 Vis-IR microscope, mounting an MCT detector. Absorbance spectra were collected from at least 20 different points of each sample by co-adding 256 scans between 4000 and 850 cm^{-1} at a spectral resolution of 4 cm^{-1} . This experiment was repeated three times.

In the second procedure, two different regions were considered separately (Fig. 1), the narrow band of poor growth (zone 1), and the normal growth region far from the inhibition area (zone 2). The spores and their controls were harvested after 6, 11 and 24 days of culture and placed in a microtube containing 1 mL of 2.5% glutaraldehyde in sodium cacodylate buffer with sucrose. After a 2 h fixation period, the samples were dehydrated in graded ethanol solutions (30, 50, 70, 90 and 100%) repeating each 20 min step twice. Before the analysis, pellets were collected with a Pasteur pipette, deposited onto infrared cells and air-dried, trying to obtain a uniform layer. FTIR spectra were collected on a Bruker Vertex 70 interferometer coupled to a Bruker Hyperion 3000 Vis-IR microscope, mounting a Focal Plane Array detector with 64 \times 64 elements (Bruker Optics GmbH, Ettlingen, Germany). The absorbance spectra were collected in transmission geometry between 4000 and 850 cm^{-1} at a spectral resolution of 4 cm^{-1} with 128 co-added scans in 2 \times 2 binning mode, resulting in 32 \times 32 simultaneous spectra in a single acquisition, each covering a sample area of 5.3 \times 5.3 μm^2 . Several acquisitions were made for each sample, at locations chosen with the aid of the optical microscope.

Primary data processing of all data was carried out using the OPUS software (v. 6.5, Bruker Optics GmbH, Ettlingen, Germany). After correcting the spectra for atmospheric artifacts, first-order derivative spectra were computed using the Savitzky-Golay algorithm with 9 smoothing points. Subsequent data analysis was carried out using custom procedures within Igor Pro (v. 6, WaveMetrics, Portland, OR, USA).

3. Results and discussion

3.1. MIC and MFC

Table 1 summarizes the results for the minimal inhibitory and fungicidal concentrations of cinnamon essential oil in direct

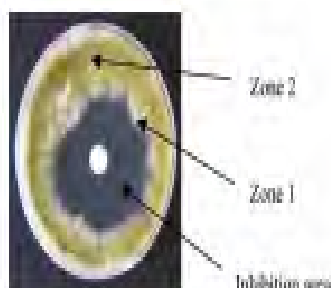


Fig. 1. Growth zones in the Petri dish used for FTIR analysis.

contact with *A. flavus*. After 48 (72) h of incubation under continuous shaking, non-growth was found at 0.1 mg/mL. This MIC was slightly dependent on the concentration of the fungal suspension, with a lower value for the 10^5 CFU/mL and 10^4 CFU/mL inocula. A similar trend was found for the MFC, where a higher EO dose was necessary to kill the fungus at 10^5 and 10^4 CFU/mL. This dependence of the activity on the initial fungal concentration has been pointed out by other authors as well (Rasooli et al., 2008).

In a previous work in our laboratory, the same MIC/MFC test was performed to evaluate the antifungal activity of CIN EO (Cinnamomum zeylanicum), organic EO (*Oreganum vulgare*) and Lauramide Arginate Ethylester (LAE) (Masco et al., 2010). Among them, CIN EO gave the lowest values against the same strain *A. flavus* at 10^5 CFU/mL. Rasooli et al. studied the antifungal activity of two varieties of Thyme EO against *Aspergillus niger* and *Aspergillus parasiticus* (Rasooli & Ovwia, 2005; Rasooli et al., 2008). In the first case, a MIC of 0.125–0.250 mg/mL (125–250 ppm) was found depending on the variety of thyme, with MFC values of 250–500 ppm. Our results show that cinnamon is a slightly stronger agent than the *Matricaria chamomilla* flower EO tested by Teixeira et al. (2010) and much more active than the *O. vulgare* EO evaluated by Mitchell et al. at 10^5 sp/mL (Mitchell et al., 2010), which yielded a MIC of 0.8 mg/mL and a MFC of 1.25 mg/mL. As a result, this work demonstrates that cinnamon EO is a strong antifungal agent compared to other substances.

3.2. Antifungal performance of active materials

Unlike bacteria, which grow quickly, mold growth is relatively slow, with controls of *A. flavus* needing 4 days to cover the surface of the Petri dish completely. In order to describe mold growth and the activity of the packaging materials, the surface of the Petri dish was used to build a qualitative scale (Table 2). In this scale, a low index indicates strong antimicrobial activity, i.e. impaired growth (Walstrom, Stromberg, & Karlsson, 2005).

The development of *A. flavus* exposed to active PET at 2% CIN EO load is reported in Fig. 2. The 10^5 CFU/mL suspension was totally inhibited by the 2% film, and higher content of essential oil (from 4% to 8% CIN EO films) caused total inhibition for all suspensions under study (10^5 , 10^4 and 10^3 CFU/mL). These data are not included in the Fig. 2.

As mentioned above for the MIC and MFC, the initial inoculum concentration plays an essential role in the degree of inhibition. The most diluted suspensions (10^3 CFU/mL) were completely inhibited even with the lowest CIN EO exposure, while intermediate suspensions (10^4 CFU/mL) were partially impaired, with no growth until the third day and only medium development after 12 days of observation. The most concentrated inoculum (10^5 CFU/mL) was slightly retarded, reaching full development one day later than the control. This behavior suggests that the active compounds released by the active packaging affect the initial development of the molds, producing a delay in the growth that may be attributed to a fungistatic effect at these concentrations.

Table 1
Minimal Inhibitory Concentration (MIC) and minimal Fungicidal Concentration (MFC) for CIN EO on *Aspergillus flavus*.

CFU/mL	MIC (mg/mL) ± SD	MFC (mg/mL) ± SD
10^5	0.1 ± 0.05	0.2 ± 0.05
10^4	0.1 ± 0.01	0.1 ± 0.05
10^3	0.05 ± 0.01	0.1 ± 0.05
10^2	0.05 ± 0.01	0.05 ± 0.05

Results expressed as mg/mL, ± standard deviation.

Table 2
Growth scale used to describe antimicrobial activity.

Level	Description
0	No growth.
1	Starting growth observed, usually the edge of the Petri dish.
2	Medium growth, reaching the middle of the Petri dish (50% of the test surface).
3	Strong growth developed (75% of the test surface).
4	Growth over the complete surface (100%).

In addition to the short-term antifungal activity of the PET films, these aspects were studied, the long-term durability and stability of the effect, and its strength. Concerning the durability of the antifungal effect, total inhibition was maintained after extending the incubation period for two months at 25 °C. This demonstrates the progressive release of the active substances, which is controlled by the coating formulation.

Identifying the compounds responsible for the antifungal effect and quantifying them in the atmosphere around the mold can be carried out by GC-MS. It is thus possible to determine the major and minor components of a given EO, and to identify synergies between compounds. In previous works from our laboratory analyzing the same EO employed in this work (Goni et al., 2009; Lopez et al., 2005, 2007a; Lopez, Sanchez, Balle, & Nerin, 2007b), we found that cinnamaldehyde is the major *A. flavus* inhibitor, and that the concentration of eugenol (another well-known antimicrobial) is also relevant. The ratio between these compounds depends on the origin of the EO, e.g. from the bark or from the leaves of the plant. We also found synergistic effect of cinnamaldehyde versus *A. flavus*, where fortifying the natural EO with this compound significantly increased the antimicrobial activity.

The stability of the active material was checked by carrying out the same experiment reported in Fig. 2 under the same conditions, but using material that had been stored at 4 °C for two months. The results of these experiments were the same as those with fresh substrates, demonstrating the stability of the films.

Finally, the long-term strength of the activity was evaluated (through the fungistatic or fungicidal character of the inhibition). Half of the samples that exhibited total inhibition were freed from the presence of the essential oil by replacing the film with a sterile cover lid, while the other half were harvested, re-seeded onto new Petri dishes and cultured as previously. No growth was observed in any case, confirming the long-term fungicidal effect of the active PET films.

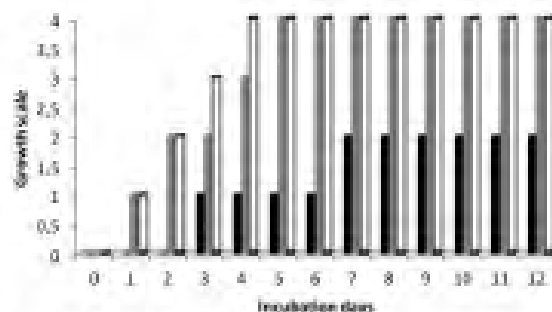


Fig. 2. Development of *A. flavus* under the effect of 2% CIN EO released from active PET for 12 days. The scale of the vertical axis is described in Table 2. Growth of the high and medium fungal suspensions (10^5 and 10^4 CFU/mL, respectively) was retarded in relation to control samples. Symbol legend: □ control, ■ PET 2% (10^5 CFU/mL), ■ PET 2% (10^4 CFU/mL).

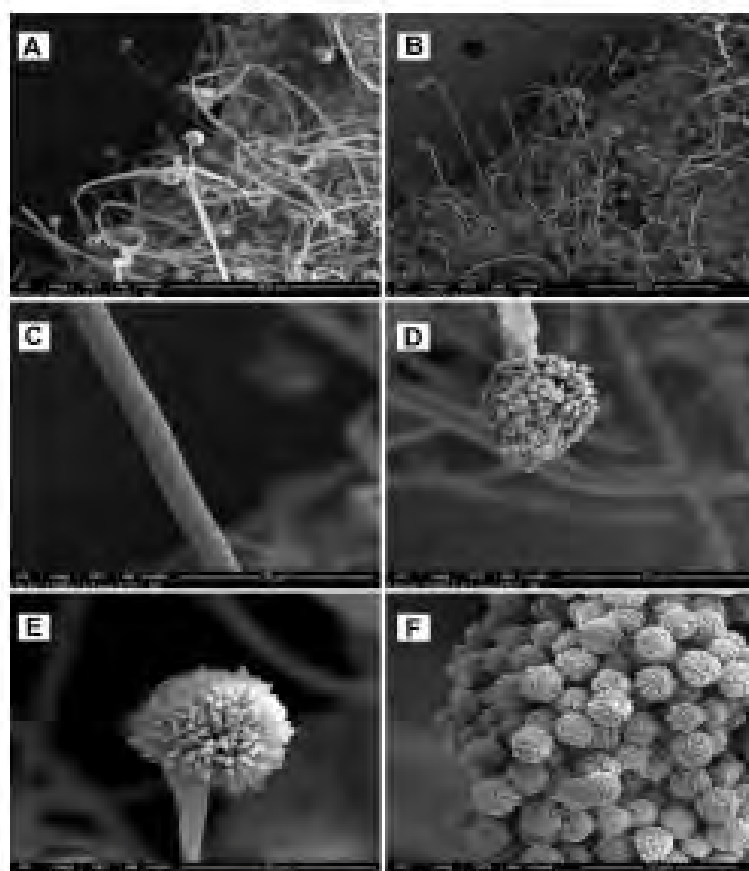


Fig. 1. SEM images of control samples. A, B: General view, showing normal growth of *Aspergillus* flower. Many hyphae are seen covering the whole surface. C, D, E: Details of a hypha and conidiophore. The hyphae feature a tubular shape and have spherical, fully-formed conidiophores at the tip. F: Detail of conidia covering the whole surface of the conidiophore and showing characteristic species on the surface.

3.3. Materials composition

Combining the results reported here with previous work from our laboratory (Gutiérrez, Sánchez, et al., 2009; López et al., 2007a, 2007b; Montero et al., 2009; Montero-Prado, Rodríguez-Lafuente, & Nerni, 2011; Rodríguez et al., 2007, 2008; Rodríguez-Lafuente, Neriá, & Batlle, 2010), dealing with other polymers and paper as active packaging, several interesting features can be highlighted. The common background is that all materials contained CIN EO as active agent incorporated with coating technology, but using a different formula depending on the substrate.

For very low concentrations of *Aspergillus stolonifer* (10^2 CFU/mL), active paper loaded with 0.15–0.9 g/m² of CIN EO were evaluated using similar methodology as here (Rodríguez et al., 2008). In that experiment, activity started at 0.3 g/m², and total inhibition was found at 0.9 g/m². Under this concentration, antifungal activity decreased strongly, with the mold covering 64% and 16% of the Petri dish area for 0.6 and 0.3 g/m² load, respectively (results have been recalculated from the original diameter reports, in order to be consistent with the present work). We have obtained similar results for higher inoculum concentrations (unpublished data).

The same trend regarding CIN EO load and initial inoculum concentration was found for other polymeric substrates (López et al., 2007a; Montero-Prado et al., 2011), leading to the general conclusion that the higher the nominal EO content in the active coating, the stronger the antifungal activity (Rodríguez et al., 2008), and the higher the initial fungal suspension, the higher the EO content necessary to obtain total inhibition.

A closer look at the data reveals that plastic films (PE, PP and PE/EVOH) display similar features, indicating that the release of the cinnamon essential oil from the polymer to the microorganism occurs in the same manner, without a strong dependence on the substrate. This demonstrates that the active compounds are integrated in the coating formulation, and that the interaction with the polymer surface (adsorption, degradation) is negligible.

On the other hand, a higher CIN EO load was needed for the active paper. This may be explained (a) by the porosity and higher thickness of the paper, which slows down EO release to the atmosphere, (b) by a slower release of the essential oil from paraffin coating than from the plastic coating, or (c) by a combination of both effects.

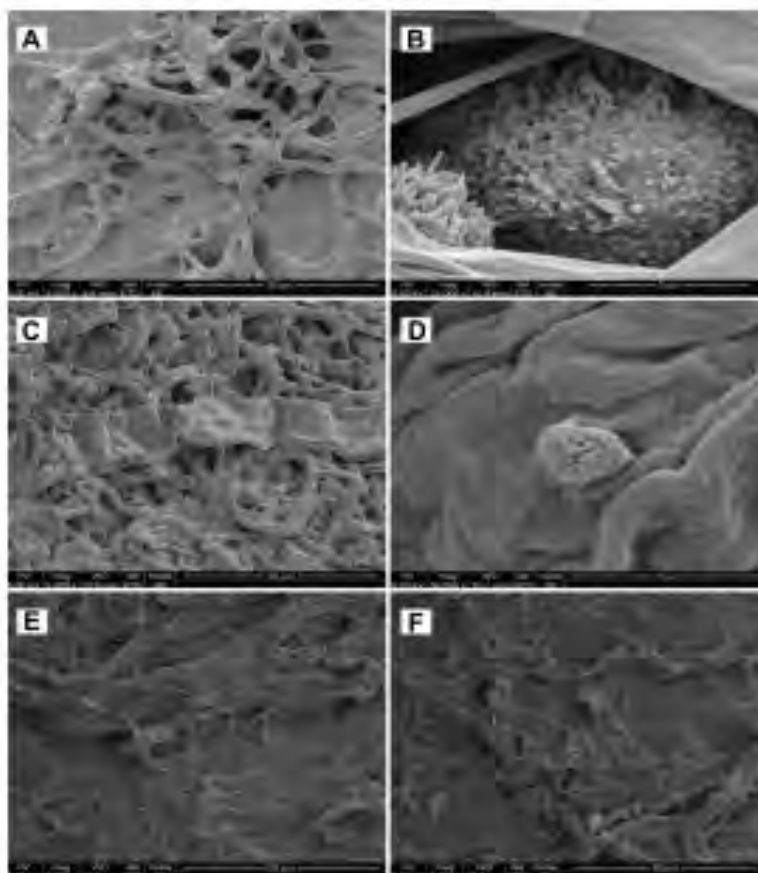


Fig. 4. SEM images of treated samples. A, B: Effect of 10 μ L CIN on hyphae (A) and conidiophores (B). C, D: at 20 μ L CIN, increased damage of the hyphae (C) and disrupted conidia (D) are appreciated. E, F: At 30 μ L CIN, individual hyphae are indistinguishable and conidial growth is completely inhibited.

3.4. Scanning electron microscopy

The active paper disc creates an inhibition area on the Petri dish where growth is inhibited, and a clear zone around where only white mycelium is present and a strong decrease in sporulation is noticed. This ring is considered as exposed to subinhibitory essential oil concentration, and evident morphological changes can be appreciated due to the exposure to the CIN EO vapor phase. SEM allows direct observation of these physical changes in the cell with high spatial resolution.

As reported in Fig. 3, individual ordered mycelia can be clearly distinguished in control samples, and a large quantity of well-formed conidiophores grow at the end of their tips (3a, 3b). Hyphae are filamentous, featuring a tubular shape and a regular structure (3c). All conidiophores are globular, forming spherical heads containing swollen conidia inside (3d, 3e). As shown in detail in (3f), the typical ultrastructure of conidia features spicules covering the whole surface.

On the other hand, images of the samples exposed to 10, 20 and 30 μ L of CIN EO show evident damage and a characteristic inhibition of sporulation (Fig. 4). At 10 μ L of cinnamon EO (4a, 4b), volatile compounds cause disruption of the hyphae, which appear mixed

and stuck together, forming an irregular cellular mass. Few conidiophores were found at this EO concentration, and they featured a large number of incomplete conidia. With 20 μ L of cinnamon (4c, 4d), only individual spores were found, and the typical regular and swollen appearance of the conidium had been lost. It was also found that the hyphae were more adhered, forming an increasingly homogeneous mass. At the highest CIN EO concentrations, individual hyphae were indistinguishable and total inhibition of sporulation was observed (Fig. 4e and f).

Two reasons might explain this effect. One hypothesis is that the growth delay caused by the CIN EO induces incomplete formation of the conidia, resulting in frustrated growth, what could be consistent as well with the results from FTIR study. Alternatively, it is also possible that the essential oil causes damage to the conidia after the conidiophore has been formed, resulting in an unstructured vesicle head.

These observations are consistent with those of other authors, who reported abnormalities in the cell wall structure, disrupted and aggregated hyphae, loss of cytoplasm, strong decrease in the number of conidia, and conidiophores with anomalous development (Helal, Saïhan, Abu Shabla, & Abou El-Khair, 2006; Lopez-Malo, Alzamora, & Palou, 2002; Tofoouee et al., 2010).

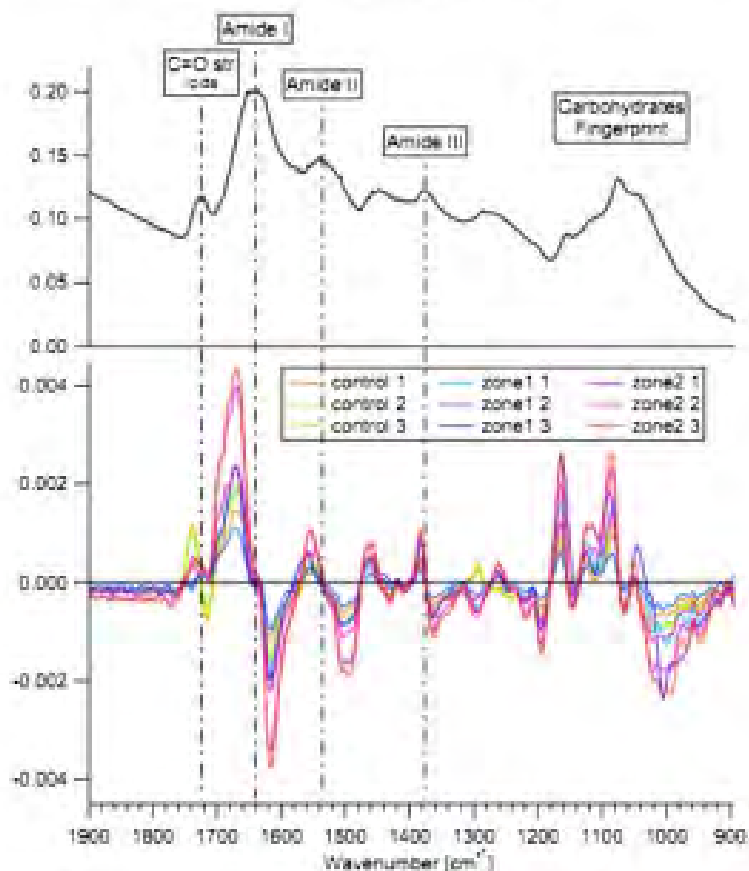


Fig. 5. Typical FTIR spectra of *A. flavus* (top) and first derivative for a sample and its control (3 measurements each) after 24 days of exposure to dissolved EO vapor.

3.5. FTIR analysis

The target of this analysis was only the spores, given their reproductive role and the fact that they produce mycotoxins. Additionally, the spores can be harvested from the Petri dish without contamination (Fischer, Braun, Thissen, & Dott, 2006). However, it is well known that cells may suffer changes when they are removed from their original media. For this reason, they are routinely fixed in order to avoid tension forces between the intracellular fluid and the external air, thereby ensuring the quality of the IR spectra (Gazi et al., 2005). However, cells may also be dehydrated by centrifugation, minimizing the negative effect of the air-drying process while avoiding possible interference of the solvents with the IR spectrum of the sample.

The paper disc with the essential oil produces an inhibition area on the Petri dish surface where growth is impaired (Fig. 1). Around this area, a clear zone is observed where only white mycelium is present and a strong decrease in sporulation is noticed. Far from the inhibition area, mold development is apparently normal.

Fig. 5 shows typical FTIR absorption spectra of *A. flavus* in the wavenumber range between 1900 and 900 cm^{-1} . The spectra have been normalized in order to allow for comparison between the curves, and the error bands represent the variability of the signal as the standard deviation. The band at 1725 cm^{-1} corresponds to C=O

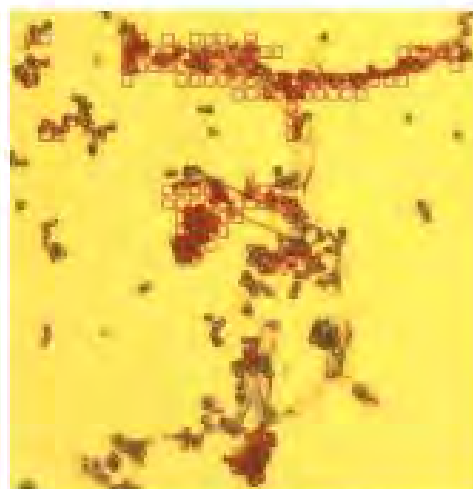


Fig. 6. Typical micrograph of a sample region under study. Each square represents an element of the detector (only those considered to contain sample have been drawn). Note how the filtering criterion discards regions with only hyphae or too little sample.

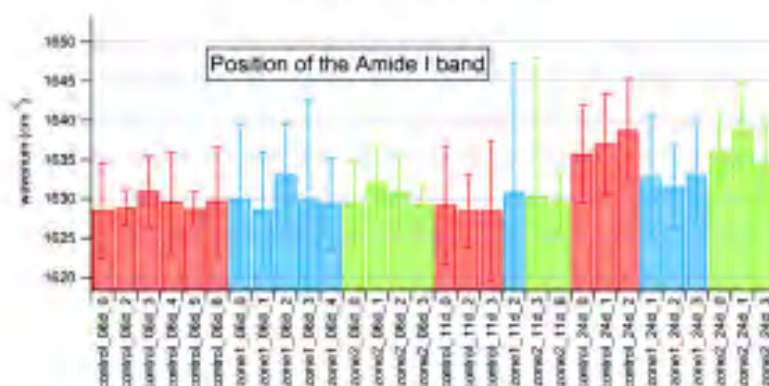


Fig. 2. Position of the Amide I band in the studied samples. Error bars are standard deviation. The poor statistics for the 11 day samples are due to the low spore count in those samples, caused by the sparse coverage of the infrared support.

stretching of lipids. The fingerprint region between 900 and 1050 cm^{-1} , characteristic of sugars, is known to be very variable due to the contribution of many overlapping bands (Szejtli, Kálmány, & Gough, 2007). Similarly, the region between 1300 and 1150 cm^{-1} , corresponding to nucleic acids, is also very variable due to the frequent mutations of the molds.

In order to cover the IR support homogeneously and have a sufficient amount of sample, the first preparation procedure considered all spores of the Petri dish. As a result, only a small percentage of the cells in each sample were actually affected by the CIN EO. This explains the lack of significant differences between exposed samples and their controls. Although cluster analysis accurately groups the spectra corresponding to each sample, it is unable to distinguish exposed samples from controls.

The second sample preparation procedure aimed at improving the signal corresponding to affected spores by harvesting from two distinct zones. In this case, the difficulties arose in the deposition process, as the IR support coverage was very sparse. As a consequence, processing the FTIR spectra became more involved, as only part of the area covered by the detector contained the sample. This was addressed by a custom filter, which used the spectrum information to discard detector elements without enough sample coverage, as shown in Fig. 6. The slight differences between marker and sample, which are most apparent near the top of the image, are due to the parallax between the detector and the microscope camera.

The biggest changes in the IR spectrum appear in the Amide I band. Fig. 7 reports the position of the Amide I peak in the sampled zones at 6, 11 and 24 days (error bars are standard deviation, and the poor statistics for the 11 day samples are due to the small number of spores in the analyzed region). The peak position stays unchanged at 1630 cm^{-1} for the first 11 days, and it is the same for the exposed samples and their controls. However, at 24 days the band shifts to $\sim 1637 \text{ cm}^{-1}$ in the case of the control and zone 2, while a significantly smaller change is seen in the case of zone 1 ($\sim 1632 \text{ cm}^{-1}$). The amide II and III peaks follow this trend as well, although the shift is smaller. Such changes in the Amide I band have been explained by conformational changes in the sample proteins (Saubou et al., 2010). Previous work in our laboratory analyzed the atmosphere created by the active packaging in the Petri dish (Lopez et al., 2007b), showing that the presence of *A. flavus* altered the composition with significant differences in the concentrations of eugenol, α and β -pinene, camphene and p -cymene. Furthermore,

the atmosphere of fortified cinnamon EO, which completely inhibited the mold, was not affected. These results strongly support our interpretation that the shift in the Amide I band is due to the effect of EO on the mold.

Although the FTIR results are not conclusive by themselves, they support the results of the SEM study that the cinnamon EO affects the growth process of *A. flavus*, but not the survival of the spore once it is fully developed, i.e. killing the mold is much more difficult than avoiding its growth.

4. Conclusions

In addition to the hurdles associated to working with live cells, such as the destructive character of most analytical techniques, dealing with molds presents the additional difficulties of frequent mutations and slow growth compared to bacteria. Studying the effect of antimicrobial agents requires a combination of methods such as that proposed in this work. We have presented a profound overview of the antifungal performance of cinnamon-based active packaging materials, including the minimal inhibitory and fungicidal essential oil concentrations, the effect of different EO load on mold growth, the cellular damage observed by SEM caused by the active substances and the most salient changes in the mid-infrared spectrum, providing new insight about the mode of action of cinnamon essential oil on *A. flavus*.

The combined results demonstrate the effectiveness of cinnamon essential oil as antifungal compound, independently of the substrate from which it is delivered. In general, plastic films require much less CIN EO load than active paper to inhibit the mold, which might be explained by the differences in the coating or by the material itself (e.g. porosity). However, both substrates feature excellent long-term effectiveness and stability. This opens a wide range of industrial applications, in particular for the field of food packaging where *A. flavus* contamination is a major issue. We have shown that it is possible to choose among very different substrates and to develop tailored solutions adapted to the particular situation and the food product, without compromising the effectiveness of the essential oil as antimicrobial agent.

Acknowledgments

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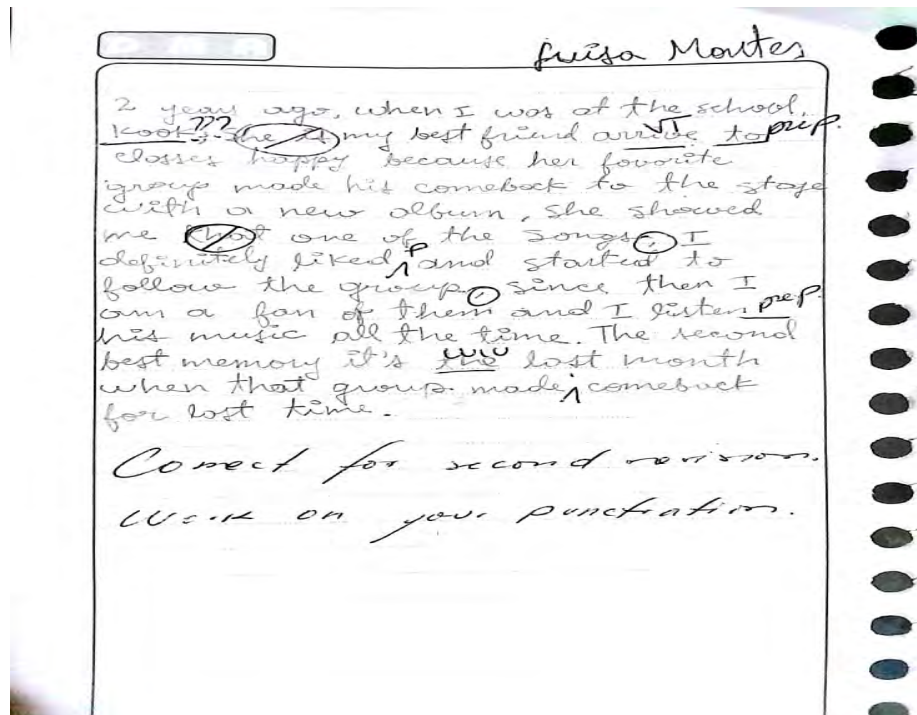
measurements, Iñigo Echaniz and Carlos Cuestas from the FTIR and the Electron Microscopy services, respectively, of the Aragón Institute of Nanoscience (INA) at the University of Zaragoza. S. Manso is supported by the grant/contract number BES-2009-022061. Financial support was generously provided by the Spanish Ministry of Science and Innovation and by FEDER funds, under project number AGL2008-04363.

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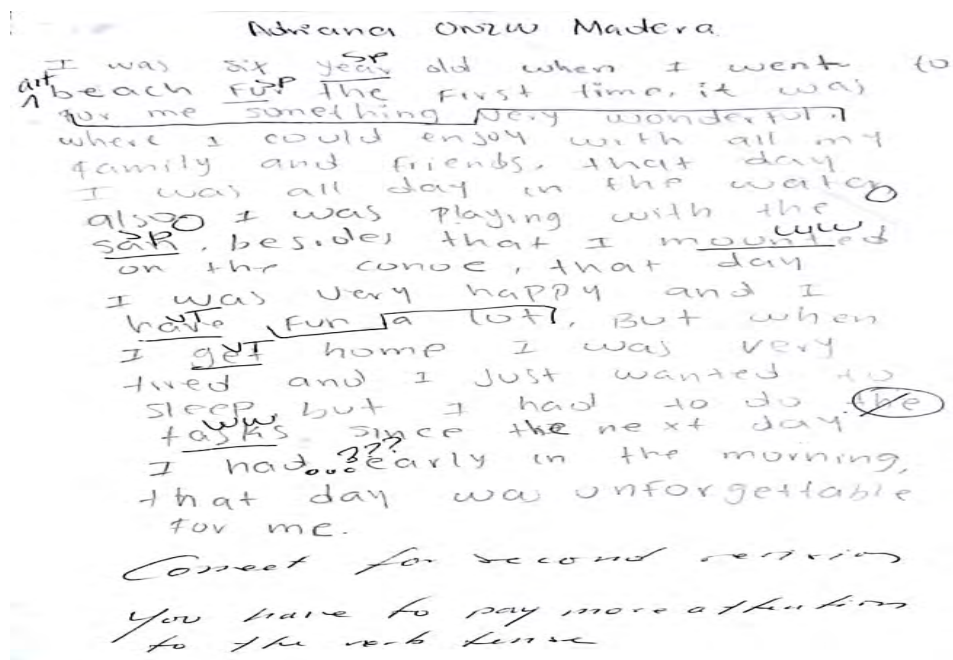
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Appendix M. Sample English students reading products

Sample # 1



Sample # 2



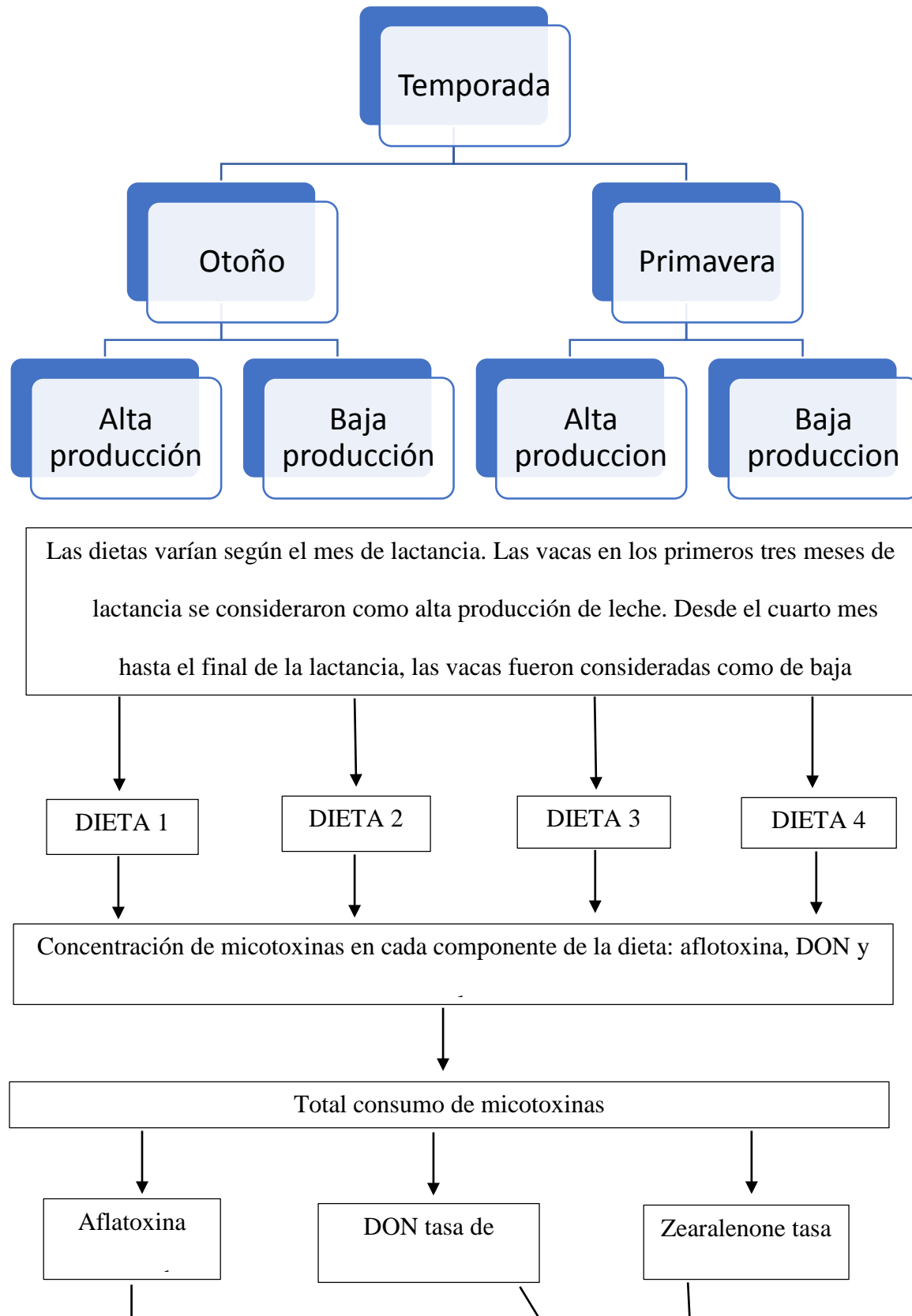
Appendix N. Sample of the microbiology reading products

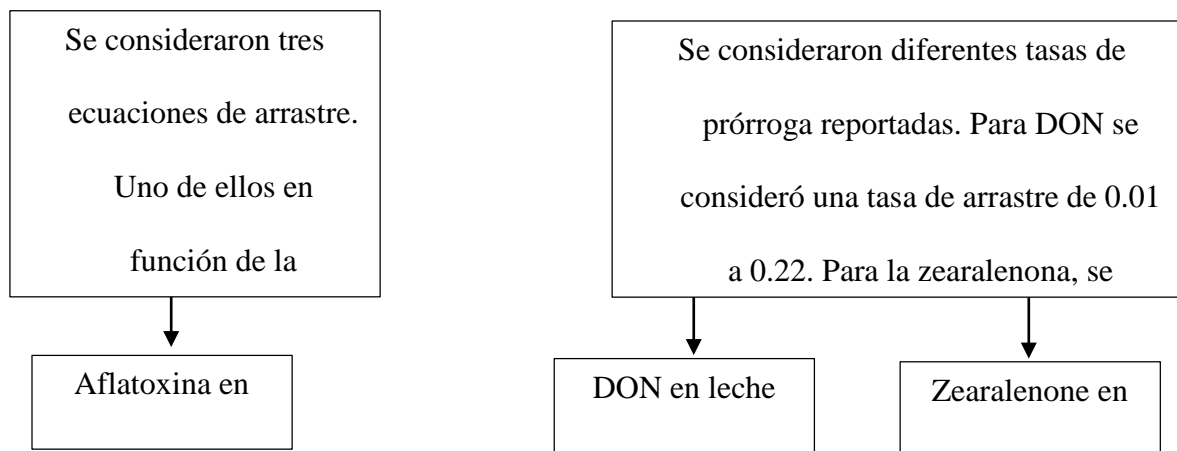
Research article summary (microbiology 4th semester)

RESUMEN

En Argentina a mediados del 2010 se realizó un análisis cuantitativo para determinar el nivel de micotoxinas de la leche de vaca producida en Argentina de 3 tipos distintos de toxinas las cuales son la aflatoxina deoxinivalenol y zearalenona esto se realizó a través de varias etapas del modelado de la leche que se realizan en Argentina en este se pudo estimar unos rangos de concentración de dichas micotoxinas en la leche la micotoxina aflatoxina se vio afectada en la leche por la ecuación de tasa de virulencia aplicadas en el modelo los niveles de micotoxinas en el ensilaje de maíz y los alimentos concentrados fueron los factores más correlacionados con las concentraciones de micotoxinas en la leche. Por lo tanto, las prácticas agrícolas la presencia de micotoxinas en los productos lácteos y sobre todo en la leche hace que sea un riesgo muy grande para nosotros los humanos debido a sus aportes negativos en los productos alimenticios para las personas mayores y especialmente a los jóvenes los más destacados efectos toxicológicos de las principales clases de micotoxinas son reconocidos pero casi no se sabe acerca de los efectos de estas las micotoxinas son metabolitos secundarios producidos por hongos filamentosos que son los contaminantes más comunes de los productos agrícolas estas son capaces de alterar las actividades inmunológicas o la producción de efectos tóxicos carcinogénicos mutagénicos teratogénicos y estrogénicos agudas en animales dependiendo del nivel de exposición en el ganado el consumo de micotoxinas se asocia con una disminución en la pérdida de peso en la disminución de la producción de leche y la falta de respuesta al cambio de dieta y terapias. Debido a que la contaminación por micotoxinas de los alimentos depende de las condiciones ambientales que conducen al crecimiento de moho y la producción de así como a múltiples posibilidades para producir dietas de los animales la variabilidad inter-anual hizo la estimación de la contaminación por micotoxinas una tarea muy compleja. El objetivo de este estudio fue desarrollar un modelo de evaluación cuantitativa de la exposición a las micotoxinas en la leche de vaca producida en Argentina para mejorar la base para decidir sobre la formulación de políticas y objetivos de la investigación, y para reducir los riesgos para la salud humana y animal debido a las micotoxinas. Las micotoxinas considerados en este estudio fueron un aflatoxina B1 (AFB1), deoxinivalenol (DON) y la zearalenona (ZEA). El modelo fue desarrollado utilizando las entradas de los datos recogidos en los sistemas lecheros argentinos, y la información de expertos y la opinión, siempre que sea posible. Sin embargo, cuando los datos argentinos específicos no estaban disponibles, los datos internacionales y la literatura científica fueron consultados para mejorar la base del modelo. Se utilizó la técnica de Monte Carlo modelo de simulación aplicaron 5000 iteraciones para crear las distribuciones de salida que reflejen la incertidumbre inherente y la variabilidad en cada variable de entrada. La cantidad de micotoxina ingerida por las vacas seleccionadas se calculó como la suma del nivel de micotoxinas de cada ingrediente en la dieta. En la base de datos utilizada para desarrollar este modelo, la aflatoxina B1 y ZEA fueron más frecuentemente detectados de DON. Incidencia de AFB1 fue particularmente alta en la alimentación de concentrado y de semilla de algodón, siendo la prevalencia general de AFB1 de 78,9%. ZEA se encontró en el 78,8% de las muestras de piensos analizados, especialmente en ensilaje de maíz, subproductos industriales y pastos. Por otra parte, DON fue particularmente importante en alimentos concentrados y subproductos industriales. Se observa con frecuencia co-ocurrencia de aflatoxinas B1 DON y ZEA. Presencia de AFB1 y ZEA era se observó el más prevalente co-ocurrencia y la presencia simultánea de AFB1 DON y ZEA en la misma alimentación en 39,2% de las muestras. Esta es la evaluación cuantitativa del riesgo para la primera micotoxinas en la leche de vaca hecho en condiciones de cultivo práctica argentinos. La Unión Europea determinaron Las regulaciones determinar un nivel máximo de 5 y 20 AFB1 ppb en la alimentación de ganado lechero, respectivamente. De acuerdo con las

estimaciones generadas por este modelo de riesgo, aproximadamente el 25,07% y el 3,76% de las dietas que se ofrecen al ganado lechero en la región central lechera de Argentina presentarían niveles más altos que los establecidos por las normas internacionales. El nivel máximo de 5000 y 500 ppb para DON y ZEA en la alimentación, respectivamente, se establecieron por la Unión Europea). Se estimó que ninguna de las dietas que se ofrecen al ganado lechero supere el nivel máximo para el DON, pero el 8,9% de las dietas mostraron niveles más altos de ZEA que las establecidas por la normativa internacional. Hay pruebas abrumadoras de la contaminación mundial de cereales y alimentos para animales con *Fusarium*. Alimentos concentrados y ensilaje de maíz eran dos ingredientes altamente correlacionados con el nivel de micotoxinas en la leche de vaca. La proporción AFB1 de estos dos ingredientes fue, en promedio, 57,13% de la dieta total. En el caso de DON y ZEA, la proporción proporcionada por el ensilaje de maíz y alimentos concentrados se estimó en 55,5% y 50,64% de la dieta total, respectivamente. Por estas razones, las condiciones de la cosecha, almacenamiento y producción de piensos derivados del maíz, se deben controlar cuidadosamente con el fin de reducir la exposición de ganado lechero a las micotoxinas y, posteriormente, reducir su concentración en la leche. Durante el tiempo de la cosecha, es importante evitar el exceso de daño a los granos, que pueden predisponer a ser infectados durante el almacenamiento. Post-cosecha prevención control de micotoxinas de condiciones que favorecen el crecimiento de hongos y la producción de toxina posterior tal como la actividad del agua de los productos almacenados, la temperatura, de roedores y daño por insectos, y las interacciones microbianas necesitan ser considerados la temporada fue otro factor asociado con la presencia de micotoxinas en la leche ya está mostró que la concentración de micotoxinas durante el otoño fue más alta que en la primavera. Esto puede deberse a la composición de la dieta en cada estación, con una mayor participación de alimentos concentrados y ensilaje de maíz (ingredientes muy susceptibles a los hongos micotoxigénicos durante el otoño. De acuerdo con los niveles de producción de leche de las vacas lecheras, en otoño, estos ingredientes significan 57,26% y 65,71% de la dieta total, mientras que durante la primavera, ambos componentes representaron 22,22 a 40,9% de la dieta. Dada esta composición diferencial de la dieta de acuerdo a la temporada, se estimó que el consumo de AFB1 de ensilaje de maíz y alimentos concentrados representaba 66% de AFB1 en la dieta durante el otoño, mientras que durante la primavera esta proporción se redujo a 48,18%. Este estudio demostró que en la dieta de las vacas lecheras argentinas, ensilaje de maíz y alimentos concentrados son la principal fuente de micotoxinas y, por lo tanto, se recomienda incluir estos ingredientes en los programas de vigilancia y de control. Más cierto conocimiento con respecto a la contaminación por micotoxinas indica la necesidad de inhibir el crecimiento de hongos (para mejorar las condiciones de la cosecha y post cosecha, almacenamiento y la producción de piensos), para rechazar alimentos contaminados (o mezcla de grano no contaminado), o para añadir aditivos en el las dietas que bloquean la acción de las micotoxinas. Sin embargo, ya que los requisitos de calidad son cada vez más estrictas, cualquier reducción de los límites regulatorios internacionales establecidos sería un grave impacto en la producción nacional. Por esa razón, la Argentina debería mejorar su programa de seguimiento de las micotoxinas en la alimentación animal y la leche

METODOLOGIA



VOCABULARIO TECNICO

Micotoxinas: son compuestos tóxicos producidos de forma natural por algunos tipos de mohos

Leche: Sustancia líquida y blanca que segregan las mamas de las hembras de los mamíferos para alimentar a sus crías y que está constituida por caseína, lactosa, sales inorgánicas, glóbulos de grasa suspendidos y otras sustancias

Mutagénicos: En biología, un mutágeno es un agente físico, químico o biológico que altera o cambia la información genética

Teratogénicos: Teratógeno es todo aquello capaz de alterar el desarrollo embrionario normal causando, en la mayor parte de los casos, malformaciones congénitas en el niño

Estrogénicos: Los estrógenos son **hormonas sexuales de tipo esteroideo** (derivadas del colesterol) producidas en los ovarios, en la placenta durante el embarazo y, en menor medida, en las glándulas suprarrenales. Son la estrona, el estradiol y el estriol.

Aflatoxina: Las aflatoxinas son micotoxinas producidas por cepas toxigénicas de los hongos *Aspergillus flavus* y *Aspergillus parasiticus*^{4, 13}. Estas sustancias son altamente cancerígenas

Deoxinivalenol: una de las principales micotoxinas de la familia de los tricotecenos, es producido por varias especies del género *Fusarium*

Zearalenona: También conocida como micotoxina F2, es una micotoxina producida por varias especies de hongos pertenecientes al género *Fusarium*, entre las que se encuentran *F. graminearum*

Appendix O. Analysis of the English narrative text

Analysis of the English narrative text

Title for the text	Sally goes to the university	
Genre	Story	
Social purpose	To describe a series of events that takes place in the lives of the main characters of the story, Sally and her mother.	
Topic: what is it about?	This is the story about a girl who travels away from home to start the university. And the mother of the characters that experiences a series of reactions directly related to her daughter's departure.	
Phases, stages and their purposes		
Stages (every stage and its purpose)	Phases (every phase and its purpose)	Text sample
<p>Orientation</p> <p>In this first stage of the text, the purpose is to explain the reader the main aspects in the story. Such as: character descriptions, time and settings. Sally the main character her age and the fact that she always had live with her parents. Besides, her mother also plays a really important role and has great participation being considered one of the main characters of the text. For example the orientation can be recognized in the text</p>	<p>Settings</p> <p>The introduction of the story is very clear. It talks in general about characters, locations and context. Providing the reader with a view about the situations taking place in the story.</p> <p>Descriptions</p> <p>It is in this instance where the writer makes a short description of the character and provides some useful background information that locates the reader into the topic</p>	<ul style="list-style-type: none"> - Sally was nineteen years old. She had always lived with her parents - Sally was nineteen years old. She had always lived with her parents but now the time had come for her to go to the university in another part of the county to study to be a doctor.

from the beginning with the initial descriptions that are provided.

Complication

In this subsequent section some explanations about different events are explained and the way how issues or problems come out. For example, in the case of the text being analyzed, the main character Sally is confronted with the problematic situation of her going to study in a university away from her home and parents apart from this, her mother has a negative reaction about this fact that can be also considered part of the complication. Thus, it can be concluded that there is a mixture of the orientation and complication stages since these two share the same information.

Events

Here the events are more specific and are related to the situations or issues that happen in the reading. These are also characterized by the use of sequencing linking words.

Problem

In these stage all the issues and problematic situations experienced by the characters of the story are displayed

For her to go to university to study in another part of the country

- **Then** every week sally kept her promised and telephoned.
- **Then** her mother took her to the university
- **They** talked for several minutes and sally was very happy
- **But then** some holydays were getting near.
- The time had *come for her to go to the university in another part of the country.*
- Sally **said good bye to her mother and to her cat**
- Her mother **was not glad about this.**

<p>Resolution</p> <p>Finally, in the last stage demonstrated how the main issues that take place in the body of the text are solved. It is important to mention that not in all the texts there is always a positive resolution of the issues like in this case, the main character finishes the story by expressing that she missed her pet but not her parents which can be considered as a negative resolution by the other main character that is her mother who was always worried about sally.</p>	<p>Reaction</p> <p>The reaction is related to the way how the characters response to the situation that occur during the development of the story, this could be behavioral and attitudinal. For example.</p>	<ul style="list-style-type: none"> - Her mother was very sad about this - Sally's mother was very glad that the students had said this.
<p>Detailed analysis of linguistic features of the text</p>	<p>In the story can be clearly identified two main characters which are the ones who have the most participation than any other character mentioned in the story. From the beginning of the text, in the description and setting phases sally the main character is identified with a relational process becoming the entity of the action.</p> <p>Example: Sally was nineteen years old. (sally the entity / was relational process).</p> <p>In this case, the information provided in one stage of the story can be found being part of the second stage called complication. This is a situation that may take place taking into account that just after the orientation; the complication tends to appear in a normal flow of ideas. Therefore, the information can be part of both the orientation and the complication like in this case.</p> <p>For example:</p> <p>Sally was nineteen years old. She had always lived with her parents, but now the time had come for her to go to the university in another part of the county to study to be a doctor. Her mother was very sad about this and she was also</p>	

afraid because she loved her daughter very much.

Also there is evidence of other materials processes or actions that are commonly seen in narrative texts that are performed by the main characters of the story. For instance, **she had lived** with her parents (**she** actor / **had lived** material). Besides, as another important character from the text, it appears sally's mother who is described in the story as the worried mother that feels bad because of her daughter's departure. For example.

She **loved** her daughter very much (mental)

Her mother **was** very sad about this (relational)

She thought then she **said** and did you say that too? (verbal).

29 different actions in past tense were used in the text some other predictions using simple future will such as:

Her mother **took** her to the university by train

My little girl **will be** alone for the first time

There **will be** nobody to look after her.

The use of quotations marks was also identified in different occasions in order to express other's characters ideas in the story. She thought. "Perhaps she is finding the university nicer than her home".

Another linguistic feature is the use of the direct and reported speech directly related with the use of verbal process that were the most used in the text. For example.

The students had said this "she must really miss us"

Sally answered "we all said that it's easy to speak to our parents on the telephone every week when we're away, but we really miss our pets!"

**Language difficulties
analysis of the text.**

Readers may find that the structures defined for the story genre can overlap among each other; this is something that is regularly seen in most reading materials. For example in this particular case, in the reading of Sally the orientation and the complication are somehow connected and shared the same information. This means that the information being contained in the initial stage of orientation where the main characters are described and the settings and places are presented are also part of the complication stage. This is a fact that needs the proper guidance and training in order not to get confused but to understand this overlap of information regarding the stages of the text.

The correct use of the quotation marks may be a topic that should be reinforced in the students in order to understand how this works and the way how this is implemented in the story.

Sally answered "we all said that it's easy to speak to our parents on the telephone every week when we're away, but we really miss our pets!"

At the same time the reported speech topic and its variations taking into account the direct and the reported speech which is a topic that is directly linked with the use of quotation marks.

She thought. "Perhaps she is finding the university nicer than her home"

Appendix P. Analysis of the microbiology research article

Analysis of the research article

Title for the text	Combined analytical and microbiological tools to study the effect on <i>Aspergillus flavus</i> of cinnamon essential oil contained in food packaging.	
Genre	Research article (expository)	
Social purpose	To describe real effect that cinnamon oil has when protecting food from microbiological agents or infections and the way how this is being used in food packaging materials.	
Topic: what is it about?	This is a research article based on the study of oil cinnamon that refers to the use of this substance and its antiseptic properties for the protection of food and food products from antifungal and microbiological activity.	
Phases, stages and their purposes		
Stages (every stage and its purpose)	Phases (every phase and its purpose)	Text sample
Abstract It is the abstract the key and opening paragraph that provides a summary for the reader to have a clear view about the topic objectives of the research article methodology and results obtained.	Contextualization General purpose Processes description	Cinnamon essential oil has been used for centuries to protect food from microbiological infection, and in the last ten years cinnamon essential oil is also incorporated into food packaging materials as antimicrobial agent. However, very little is known about the real effect that it has on the microorganism cells. This study combines analytical and microbiological tools to elucidate cell damage produced on <i>Aspergillus flavus</i> . First, antifungal activity of cinnamon essential oil was evaluated at 10 ³ , 10 ⁴ , 10 ⁵ and 10 ⁶ CFU/ mL. Minimal Inhibitory Concentration (MIC) and Minimal Fungicidal Concentration (MFC) were determined by macrodilution in direct contact with the mold. A strong activity was obtained, with a MIC of 0.05e0.1 mg/mL, and a MFC of 0.05e0.2 mg/mL, both ranges depending on the initial fungal suspensions. Polyethylene terephthalate films containing cinnamon essential oil were tested in vapor phase, Without direct contact with the mold. Active PET

Partial results exposure

started showing activity at 2% CIN EO load and produced total inhibition at 4% CIN EO. SEM and FTIR were used to study the cell damage on the mold exposed to the cinnamon essential oil. Evident damage and a strong decrease in sporulation were found by SEM, while biochemical changes in conidia could be suggested from the FTIR spectra analysis. Two deposition techniques were used to prepare the samples for FTIR. The results obtained are shown and discussed.

<p>Introduction</p> <p>In the initial part of the research article the reader is going to have the possibility to have a general view of the study. In this section of the material, the title of the investigation is presented as well as some other key aspects such as the problematic situation, objectives, methodology and conclusions.</p>	<p>Contextualization</p>	<p>Introduction</p> <p>In the last ten years many studies have been published about the development of active packaging materials, most of them focused on food applications (Becerril, Gomez-Lus, Goni, Lopez, & Nerin, 2007; Goni et al., 2009; Lopez, Sanchez, Batlle, & Nerin, 2005; Lopez, Sanchez, Batlle, & Nerin, 2007a; Nielsen & Rios, 2000). This is an area of great interest for both industry and academia, as the introduction of protective agents in the packaging materials can be used to protect the food without direct addition of new chemicals. The current trend of having more natural and ecologically produced foodstuffs, while simultaneously requiring longer shelf life, is a challenge the food industry has to face. One key point in this research is the selection of the active agents, i.e. the protective substances to be incorporated into the packaging materials (Coma,2008)</p> <p>The two main objectives of this work are: i) to analyze the influence of the substrate on the antifungal activity versus <i>Aspergillus flavus</i> of several packaging materials containing cinnamon EO as active agent and ii) to provide data to elucidate the mode of action of this substance. Microbiological performance of the mold is analyzed in the presence of the active agent in pure form and as released from the packaging materials (PET and paper). Cell damage is assessed in the presence of cinnamon EO released from the active packaging materials.</p>
	<p>Purpose of the study</p>	

		<p>Materials and methods</p> <p>Microorganism and culture media Strain of <i>A. flavus</i> CECT 2949 (Colección Española de Cultivos Tipo) was provided by the Department of Microbiology of the University of Valencia (Spain). For the culture media, Czapek (CZP) as solid media and Yeast Extract Broth (YEB) as liquid media were employed, all supplied by Scharlau (Spain). As diluents, distilled water with 0.1% Tween 80 and physiological solution (NaCl 0.9%) were used, both provided by Panreac (Spain).</p> <p>2.3. Active PET Active PET containing CIN EO was provided by Artibal (Sabiñánigo, Spain), and consisted of a 25 mmthick layer of PET coated with an organic solvent base formulation containing the essential oil. The grammage of the coating was between 2.0 and 2.5 g/m². Active PET layers with 2, 4, 6 and 8% CIN EO amounts were tested, where each percentual point amounted to 0.0355 g/m². 2.4. Minimal Inhibitory Concentration (MIC) and Minimal Fungicidal Concentration (MFC)</p> <p>2.4. Minimal Inhibitory Concentration (MIC) and Minimal Fungicidal Concentration (MFC) <i>A. flavus</i> inocula of 10³, 10⁴, 10⁵ and 10⁶ CFU/mL were prepared in NaCl 0.9% and confirmed by plate counting. MIC values were obtained by macrodilution in Yeast Extract Broth (YEB) test tubes (Manso, Nerín, & Gómez-Lus, 2010). Similar methodology has been employed by other authors in the antifungal determination of the EOs (Mitchell, Stamford, de Souza, Lima, & Carmo, 2010; Rasooli &</p>
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<p>Materials</p> <p>In some situations, the materials stage can be part or simple be combined with the methodology. The materials used in the investigations are exposed and explained taking into account the process and the manner how this are implemented in the study.</p> <p>.</p>	<p>Materials identification and methodology and procedures explanation.</p>	<p>Owlia, 2005; Rasooli, Rezaei, & Allameh, 2006)</p> <p>Samples were Prepared as follows: first, serial dilutions of CIN EO in ethanol were prepared in the range from 160 mg/mL to 2.5 mg/mL. Tubes containing 1.78 mL of YEB were inoculated with 200 mL of fungal suspension and 20 mL of CIN EO dilution, so that the final EO concentration in the sample tubes was diluted by a factor 100. Controls with 20 mL of ethanol were added to the test. The same procedure was employed for the 4 fungal concentrations. The samples were incubated for 48 h at 25 _C under continuous shaking, except those with the lowest fungal concentration, which were incubated for 72 h to ensure complete mold growth</p>
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<p>Method</p> <p>It is in this stage where the methodology implemented for the development of the study is explained. In this case, this is a research article. Therefore, the scientific method is expected to be used. With the methodology being explained, the main characteristics that were considered for the research are defined following a specific line of investigation. These are generally known as qualitative and quantitative.</p>		
<p>Results</p> <p>In this part of the study, the results obtained from, interviews, observation and other data collection techniques are analyzed with the purpose of presenting some conclusions and even in some cases recommendations that may</p>	<p>Results presentation</p>	<p>3. Results and discussion 3.1. MIC and MFC Table 1 summarizes the results for the minimal inhibitory and fungicidal concentrations of cinnamon essential oil in direct phase, i.e. without any contact with the microorganism, by placing them over the top of the Petri dishes instead of the lid (Lopez et al., 2007a; Rodriguez et al., 2007; Rodriguez, Nerin, & Batlle, 2008). The active material was sealed to the Petri dish using a nylon cable tie. The distance between the plastic film and the</p>

<p>be applied in future research projects.</p>		<p>culture medium in the Petri dish was between 0.8 and 1.0 cm. As a first short-term experiment, incubation was carried out for 12 days at 25 °C with the agar at the bottom, following mold development with time for the different CIN EO loads. After this test, the long-term antifungal performance of the material was studied with two parallel experiments:</p> <ul style="list-style-type: none">- durability of the antifungal activity- stability of the antifungal properties <p>In order to assess the durability, the Petri dishes were incubated for two months at 25 °C, to check for possible changes in fungal growth.</p> <p>In a previous work in our laboratory, the same MIC/MFC test was performed to evaluate the antifungal activity of CIN EO (Cinnamomun zeylanicum), oregano EO (Origanum vulgare) and Lauramide Arginate Ethyl ester (LAE) (Manso et al., 2010). Among them, CIN EO gave the lowest values against the same strain <i>A. flavus</i> at 10⁶ CFU/ mL. Rasooli et al. studied the antifungal activity of two varieties of Thyme EO against <i>Aspergillus niger</i> and <i>Aspergillus parasiticus</i> (Rasooli & Owlia, 2005; Rasooli et al., 2006). In the first case, a MIC of</p>
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Results presentation of similar studies

0.125e0.250 mg/mL (125e250 ppm) was found depending on the variety of thyme, with MFC values of 250e500 ppm. Our results show that cinnamon is a slightly stronger agent than the *Matricaria chamomilla* flower EO tested by Tolouee et al. (2010) and much more active than the *O. vulgare* EO evaluated by Mitchell et al.

In addition to the hurdles associated to working with live cells, such as the destructive character of most analytical techniques, dealing with molds presents the additional difficulties of frequent mutations and slow growth compared to bacteria. Studying the effect of antimicrobial agents requires a combination of methods such as that proposed in this work. We have presented a profound overview of the antifungal performance of cinnamon-based active packaging materials, including the minimal inhibitory and fungicidal essential oil concentrations, the effect of different EO load on mold growth, the cellular damage observed by SEM caused by the active substances and the most salient changes in the mid-infrared spectrum, providing new insight about the mode of action of cinnamon essential oil on *A. flavus*.

The combined results demonstrate the effectiveness of cinnamon essential oil as antifungal compound, independently of the substrate from which it is delivered. In general, plastic films require much less CIN EO load than active paper to inhibit the mold, which might be explained by the differences in the coating or by the material itself (e.g. porosity). However, both substrates feature excellent long-term effectiveness and stability. This opens a wide

<p>Conclusions</p>	<p>Explanatory recount of important facts for the study</p> <p>Experiment results explanation</p>	<p>range of industrial applications, in particular for the field of food packaging where <i>A. flavus</i> contamination is a major issue.</p>
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	<p>Future expectations for the applications of the results</p>	
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<p>Detailed analysis of linguistic features of the text</p>	<p>Taking into account that in this case the reading material used in the microbiology class was a research article, it can be concluded that the text structure for this type of genre has some defined stages that are commonly found in the structure of this type of articles. For instance, according to Moyano (2001) research articles are made of some common stages or chapters and these are defined in the following order, <i>introduction, material and methods, results, discussions and conclusions</i>. An initial stage called introduction where it can be easily identified the abstract phase which is basically a summary containing the purpose of the research and some other key aspects of the project.</p> <p>abstract</p> <p>Cinnamon essential oil has been used for centuries to protect food from microbiological infection, and in the last ten years cinnamon essential oil is also incorporated into food packaging materials as antimicrobial agent. However, very little is known about the real effect that it has on the microorganism cells. This study combines analytical and microbiological tools to elucidate cell damage produced on <i>Aspergillus flavus</i>. First, antifungal activity of cinnamon essential oil was evaluated at 103,104, 105 and 106 CFU/ mL. Minimal Inhibitory Concentration (MIC) and Minimal Fungicidal Concentration (MFC) were determined by macrodilution in direct contact with the mold...</p> <p>Apart from the text structure, some other characteristic linguistic features seen in this type of genre is the use of linking words and connectors that provide the text with a more organized and technical structure. This can be seen in all of different phases and fragments of the article. For example,</p> <p>In addition, essential oils and their constituents are categorized as GRAS (Generally Recognized as Safe) by the US Food and Drug Administration.</p> <p>For this reason, essential oils (EOs) have been often proposed and used as antimicrobial, antifungal and antioxidant agents, in general with good results.</p> <p>Furthermore, antifungal activity is studied and reported using widely variable methodology, as there are no standard protocols to test EO on fungi.</p> <p>Mold inhibition is mediated by the biochemical interaction between the antifungal substance and the microorganism. However, this interaction has not been studied in depth yet.</p> <p>Most of the grammatical structures implemented in the article were the use of the passive voice. Especially in past tenses such as simple past, present perfect and past perfect in order to report the different research activities that have been carried out for the development of the project.</p> <ul style="list-style-type: none"> • Cinnamon essential oil has been used for centuries to protect food from microbiological infection. • The CIN EO was fortified by the company Argolide, who certifies the final concentration of cinnamaldehyde.
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- **It is generally accepted** that the release of the active substance depends on the underlying substrate.

As another outstanding linguistic characteristic found in this text, it is presented the use of a lot technical and complex vocabulary that is directly related with the main topic of the field of the study. Moreover, it can be also concluded that this type of words belong to the research gene category which is a very common linguistic feature in this type of text. As one of the most representative words that can be observed in the research article and that are part of the keywords research list are defined like this.

Aspergillus flavus

Active packaging

Antifungal activity

Cinnamon essential oil

SEM

FTIR

Fungicidal concentration

Conidia

Among other technical words and expression that can be identified in all the different sections of the material.

There is another relevant and common characteristic that can be easily identified in this type of text. This is the implementation of graphics, tables, images and different type of illustrations that are visible in specific sections or stages of the research material but more specifically in the results stage. For example, in this case, these types of graphics are identified in the in the results and discussion stage where the conclusions are better explained and supported with the use of this graphical resource.

language difficulties analysis of the text.

This type of text based on the presentation of research topics has a defined text structure that is commonly seen in investigation and research projects. Nevertheless, there may exist some variations in the presentation of the information but mostly the structure is defined by a Therefore, the students or reader of this kind of materials need to be familiar with the investigation field and the form how researches are carried out and presented. Therefore, the proper preparation and experiences about this type of readings may become a requiem tent in order to successfully read this type of documents.

Another aspect to take into account as a possible issue related to the reading process and the reading comprehension, is the variable type of technical vocabulary that can be seen in the text and that are going to influence the quality of the reading and consequently will have a lot to do in relation to the difficulty of the research article.

Aspergillus flavus, Active packaging, Antifungal activity, Cinnamon essential oil, SEM, FTIR, Fungicidal concentration, Conidia.

The passive voice at the same time might be considered as another topic to be reviewed since the wide possibilities of using this structure in relation to the different grammar tenses that can be used with this structure.

- conidiophore containing the spores that **can be propagated**
- The efficiency of this latter EO as antimicrobial agent **has been demonstrated** to be much lower than that coming from the bark
- Active PET layers with 2, 4, 6 and 8% CIN EO amounts **were tested**, where each percentual point amounted to 0.0355 g/m².
- A. flavus inocula of 10³, 10⁴, 10⁵ and 10⁶ CFU/mL **were prepared** in NaCl 0.9% and **confirmed by** plate counting. MIC values **were obtained by** macrodilution in Yeast Extract Broth (YEB) test tubes.