# Exploring Strategies to Foster Critical Thinking in Students of the School of Languages

**Benemérita Universidad Autónoma de Puebla**

**Facultad de Lenguas**

**A Thesis Submitted to the School of Languages for the degree of Licenciatura en la Enseñanza del Inglés**

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# CHAPTER 1. INTRODUCTION

## 1.1 **Introduction to the Problem.**

In this era of post-modernism, using or creating our own ideas results a difficult work. Particularly, when giving a different opinion or talking in a different way can be problematic. An example from ancient times is Socrates, who was seen as a criminal because of sharing his thoughts. Thinking is the most essential of all human characteristics. We use it to understand and control the world around us. It guides us in formulating problems and seeking solutions (Levy, 1997). But we can solve any kind of problems by thinking but deeply, with the help of critical thinking.

Critical thinking can be seen from different perspectives. From one perspective, critical thinking is viewed as synonymous with logic or the hypothetico-deductive method (King and Kitchener, 1994; Salmon, 1989 cited in King, P.M. & Strohm K.). From another perspective, it is seen as a process of inquiry or problem solving (Ennis, 1985a; Glaser, 1985; King and Kitchener, 1994; Lipman, 1988 cited in King, P.M. & Strohm, K., 1994). Both approaches are limited to a set of skills or general principles that can be applied to solve problems. According to Lipman (1988; King and Kitchener, 1994) critical thinking is skillful, responsible thinking that facilitates good judgment because it (1) relies upon criteria, (2) is self- correcting and (3) is sensitive to context. But, in the area of education all advantages from this kind of thinking take a more important place when teachers have to cover very general objectives with their students.

According to Aburto (2008) in recent years, in the pedagogic world, scholars have started to talk about teaching students to think and meaningful learning. In order to achieve this, the best tool is critical thinking. In university levels this has to be important because the word university carries a concept of universality which means that students have to have knowledge or to be close to other kinds of knowledge. But this becomes critical when languages are being learned and studied, language students have to be open to different kinds

of thinking and cultures. In addition, by thinking critically, students can realize about the things that surround them and to create their own ideas, but the most important thing is that critical thinking may protect them. So, the main focus of this particular research is collecting and showing strategies to teach students to think and to defend their ideas not refusing other people opinions. Keeping our minds open to new explanations and ways of thinking requires tolerating uncertainly, which ironically is precisely the mental vexation we try to relieve by thinking (Levy, 1997).

The purpose of this paper is to compare critical thinking skills in participants' mother tongue (L1) and in English as a foreign language (L2) and to show different strategies promoting critical thinking. A student who thinks critically assumes a critical attitude in solving problems, applies reasoning and logic and has many other advantages (Delmastro & Balada, 2012) over others.

## 1.2 **Purpose of the Study**

This project intends to explore students' critical thinking skills based on a free critical thinking test from the web page Assessment Day (2013) as an adapted instrument (See Appendix C). Based on the results contrasting the levels of critical thinking (CT) in participants' L1 and L2, suggestions will be made in order to promote strategies to improve students' critical thinking.

## 1.3 **Research Questions**

This project addresses the following research questions.

1) What is the students' level of critical thinking according to the instrument used?
2) What are the differences presented in L1 and L2 related to critical thinking?
3) What are the most common critical thinking skills developed by these participants?

## **1.4 Significance of the Study**

This work intends to show how critical thinking skills are used by students of the Language Faculty at Benemerita Universidad Autónoma de Puebla (BUAP) of the Teaching Area both in their L1 and L2. This may not only be applicable to teaching English, it can be used for

any kind of subject to encourage students to practice their analytical, discovering and critical skills in school or their life in general.

The following chapter deals with the literature review of the topic under analysis. Chapter 3 presents the methodology used in this research study. Chapter 4 offers a discussion of the results obtained after analysis. Finally, Chapter 5 presents the conclusions drawn from this study, its limitations and directions for further research.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Defining Critical Thinking (CT)

First of all, a definition needs to be provided. CT has many interpretations and has acquired certain modifications through the years. Dewey (1906; cited in Gonzalez, 2007) refers to Critical Thinking as an active, persistent and careful consideration of a belief or knowledge taking into account the foundations that support it. Similarly, Halpern (1984; cited in King and Kitchener, 1994) considers CT as a rational and purposeful attempt to use thought in moving toward a future goal. These two definitions have something in common which is the achievement and defense of a goal or belief. On the other hand, Elder and Paul (2008) are limited to the analysis and evaluation of the thinking to improve it. According to these definitions it can be concluded that CT can help to think deeply in order to support a belief or achieve a goal considering their advantages or disadvantages.

Critical thinking involves a number of abilities such as identifying a problem and the assumptions on which it is based, analyzing, understanding and making use of inference, deductive and inductive logic (Hosseini et al. 2012, pp 1356).

Also identifying specific skills, Ennis (1991, cited in Turuk, 2010) lists twelve skills categorized into four groups of critical thinking abilities:

(A) Clarification skills

1. Identify the focus: the issue, question, or conclusion

2. Analyze arguments

3. Ask and answer questions of clarification and/or challenge

4. Define terms, judge definitions, and deal with equivocation

5. Identify unstated assumptions

(B) Basic skills for decision making

6. Judge the credibility of a source

7. Observe, and judge observations and reports

(C) Inference skills

8. Deduce, and judge deductions

9. Induce, and judge inductions

a- to generalizations

b- to explanatory conclusions (including hypotheses)

10. Make and judge value judgments

(D) Supposition and integration

11. Consider and reason from premises, reasons, assumptions, and other propositions with which they disagree or about which they are in doubt, without letting the disagreement or doubt interfere with thinking (suppositional thinking)

12. Integrate the other abilities and dispositions in making and defending a decision (p.25)

### 2.1.1 Critical thinking in English as a Foreign Language (EFL)

Some authors such Paul and Elder (2007) have considered many advantages to CT. They establish five results of the development of Critical Thinking. "A critical thinker is able to reach problems or questions establishing them in a precise and clear way; assesses relevant information, using abstract ideas to interpret it effectively; comes to well- reasoning conclusions; thinks open mindedly within alternative systems of thought and communicates effectively with others in figuring out solutions to complex problems" (p.5). Also in the magazine El *Educador* (2007), an anonymous author mentions that the learners are able to defend and to justify their intellectual and personal values, offer and criticize arguments and appreciate others' points of view. This definition is more similar to that of Diestler's (1998) when he argues that critical thinkers think through their choices and make conscious decisions. They also understand the basics by both creating and presenting credible arguments. As can be seen, the advantages considered can show that developing critical

thinking helps an individual to create solid ideas, solutions or opinions analyzing situations according to the advantages and disadvantages but having the ability to reinforce with others' opinions.

In the case of reading texts, students need to have a critical view to evaluate information by looking into similarities and differences, to achieve meaning in texts (Afiza 2013, pp. 1)

In the ELT context, fostering CT holds many advantages such as

> The learners may become proficient language users if they are motivated and taught the ways of displaying critical thinking in foreign language usage, which signifies that the learners must have reflection on their production of ideas, and they may critically support those ideas with logical details (Rafi, cited in Shirkhani and Fahim 2011, pp.1091).

Mahyuddin et al. (2004 cited in Shirkhani and Fahim 2011, pp.1092) argues that learners with critical thinking ability are capable of thinking critically and creatively in order to achieve the goals of the curriculum. They are also capable of making decisions and solving problem, of using their thinking skills, and of understanding language or its contents. These learners are capable of treating thinking skills as lifelong learning. Finally, they are intellectually, physically, emotionally and spiritually well-balanced.

### 2.1.2 Teachers' work in College in teaching a second language.

Some authors have maintained that it is the responsibility of teachers creating critical thinkers in the technology era (King, 1994; Aburto, 2008). Delmastro and Balada (2012) mention that the development of autonomy and CT constitutes an obligation in college because it is manifested in the learner's autonomy to think, evaluate contents and information sources, design solutions, face problems and to apply knowledge. In the role of the meaning of college, which means "universality", actual students should learn to create their own beliefs and to have an open mind to accept other ideas in order to solve problems. So, teachers need to give more importance to CT to make their students more independent, tolerant and active participants in society.

## 2.2 Inferences: Deductive and Inductive Reasoning

Human beings are naturally thinkers which make them different from animals, this characteristic is made by two types of reasoning. One is deductive reasoning, which uses logic that moves from the general to the specific statements originated from a general idea, theory or model. An example is the statement of saying that *all men are mortal, Socrates is a man, so Socrates is mortal.*

On the other hand, Inductive reasoning reflects the reverse type of logic; uses the logic that is launched from a specific case or occurrence and moves to inferences about the general (Clifford & Hardman, 2008; Bensley, 1998). These kinds of forms to think are used when students write essays or another written work to prove their hypotheses or statements; they choose the way of their work structure.

## 2.3 Constructivism

The constructivist theory is the basis of teaching in the 21st. century and establishes that human beings are responsible of their own knowledge about the quantity and the way they acquire and see it from their perspective according to the experience they have. In this way, the learner changes or keeps beliefs or even incorporate new knowledge (Larochelle, Bednard &Garrison, 1998). This theory has to do with Critical Thinking in the way that students have to interpret different assumptions making judgments about a situation, and making decisions on what they believe.

## 2.4 Well and ill Structured Problems

The structure of a problem has to do with the solutions that can be obtained or if that problem can be solved. According to Churchman (1971; cited in King and Strohm, 1994) well-structured problems can be solved by deductive logic (all men are mortal; Plato was a man; therefore Plato was mortal). They may be considered puzzles. Puzzles can be described

with a high degree of completeness, certainty and correctness. With this premise, it can be seen that this kind of problems can be solved by deductive logic which is not a deep way to analyze a problem and then a solution would not be one hundred percent certain.

On the contrary, Churchman (ibid.) considers ill-structured problems as those that cannot be described with a high degree of certainty. In fact, it is sometimes difficult to determine when a solution has been reached. Additionally, Wood (1983; cited in King and Strohm, 1994) considers that either the acts open to the decision maker, states of nature, possible outcomes, or the ability of the outcome is unknown or not known with a high degree of certainty. Churchman (1971) and Wood (1983) agree with the fact that in this type of problems there does not exist a high degree of certainty to reach a solution. On the other hand, Paul (1990; cited in King, 1994), considers that these would be multilogical problems since whole frames of reference compete for their solution. This premise says that there is a solution but it has to be taken from multiple possible solutions.

As can be seen, with critical thinking many solutions have to be analyzed to achieve one solution, but that possible solution could not be the correct one but it has to be the most advantageous for the people implicated or to the situation giving valid arguments.

### 2.4.1 Errors in Reasoning.

As has been said, errors are common but even more when there could not be a totally correct solution. This may be due to different causes called *fallacies***.** They can be seen as reasons that seem to be logical but do not support the conclusion at all or as statements that distract listeners from the real issue (Diestler, 1998). But fallacies are not the only cause to achieve an insufficient reason. Diestler (ibid.) enlists some more that are:

**Faulty analogies: "**the key to an accurate analogy establish that *the two things being compared are alike in all significant aspects.* But when there are significant differences between the items being compared, then we have faulty analogy" (pp.224)

**False cause: "**one event followed another; the first event caused the second event. The fallacy occurs when there is no real proof that one event caused another event; there is only

evidence that one event came after another event" (p.224) One example is superstition, which is not critical thinking where people become their beliefs real because of this cause.

**Ad hominem:** it means "to the man" or attacking the person. The person is attacked on a personal quality that is irrelevant to the issue under discussion. For example, people cannot be judged by their professional affiliations to say that is not able to do another thing that has nothing to do with what they commonly do.

**Slippery Slope:** it refers to the domino effect, which is at when pushing a domino in a pattern, others will fall too. This happens but with events, if one occurs then others will follow in an uncontrollable way. This occurs when the consequences of a single act are predicted and not substantiated by evidence.

**Hasty conclusions:** Conclusions drawn on the basis of insufficient information.

### 2.5 Decisions

In critical thinking, making decisions plays an important part. Ennis (1987; cited in King and Kitchener, 1994) defines critical thinking as "reasonable, reflective thinking focused on **deciding** what to believe or do" (p.87). Thus stressing the decision-making factor. Medin & Ross (1992, cited in Bensley, 1998) defined decision making as generating, evaluating, and selecting among a set of relevant choices. This definition does not mention anything about consequences it implies choosing one option and nothing to do after. On the other hand, in more general terms Yates (1990, cited in Bensley, 1998) defines decisions as an action taken with the intention to obtain a favorable result. In general, to make a decision a person has to select from other options even if the option chosen is not totally certain and to consider if there will be consequences good or bad, but keeping in mind to get the best of the decision. Making decisions involves a process.

#### 2.5.1 Decision- Making Process

Beyth-Marom, Novik & Sloan (1987; cited in King and Kitchener, 1994); Halpern (1996; cited in King and Kitchener, 1994); and Zechmeister and Johnson (1992; cited in King and Kitchener, 1994) found six components of this process and enlist them as follows:

1. Recognizing the need to make a decision
2. Thinking about objectives and what a good decision would look like- defining problem
3. Generating alternative courses
4. Listing relevant for evaluating alternatives
5. Evaluating alternatives
6. Selecting and option or deciding

Consequently, decision making brings consequences depending on the situation that is taken. The biggest decisions as the future of a person can bring consequences as where he or she will live, where she will work on, money that will be earned, friends and many others.

### 2.6 Models of Cognitive Development

Over the years, researchers have proposed models explaining how our thinking is developed to achieve an optimal level through life and experiences taking into account some external factors to make decisions or solve problems.

#### 2.6.1 Fischer's Model of Cognitive Development

Fischer and his associates (Fischer, 1980; Fischer and Canfield, 1986; Fischer, Hand and Raussell, 1984; cited in King and Kitchener, 1994) argue that at "micro-developmental level, the complexity of information that a person can process affects the level of differentiation and integration of assumptions the person uses when achieving a problem" (p.28). The changes in skill structure provide the foundation not only for the changes observed in the

ability to think reflectively but also for changes that are associated with more mature moral judgment, more complex conceptions of the self, and more sophisticated concepts of relationship (Kitchener, 1982; cited in King and Kitchener, 1994).So, according to Fischer and Pipp (1984; cited in King and Kitchener, 1994) there are two important characteristics in individuals' change to take into account. One is the *optimal level* and the other *skill acquisition.*

Optimal Level

"Upper limit of the person's general information- processing capacity" (Kitchener and Fischer, 1990 p.28; cited in King and Kitchener, 1994). This stage increases with a person's age and is marked by periods of relative abrupt or fast growth followed by periods of relative stability (Fischer and Pipp, 1984 p.29; cited in King and Kitchener, 1994). In this way, during childhood the skills that emerge involve concrete representations of people, objects or occasions; this characterize the representational tier.

Skill Acquisition.

The individual acquiring or generalizing a skill proceeds through many small steps specified by a set of rules before the spurt in performance that marks the emergence of a new level can be observed.

### 2.6.2 Perry´s Scheme of Intellectual and Ethical Development

William Perry (1968, 1981; cited in King and Kitchener, 1994) was the first who observed the reasoning differences in college students. He observed that students in his sample initially used discrete, absolute, and authority-based categories to understand people, knowledge and values, without perception of conflicts about knowledge. Here, evaluation of ideas were then evaluated as "wrong" or "right" within a particular context or setting, making decisions about ill-structured problems such as religion, marriage and so on.

### 2.6.3 John Broughton´s Model

Broughton's (1975; cited in King and Kitchener, 1994) work is parallel to Perry´s establishing that each person constructs a view of self, reality, and knowledge agreeing that in early stages (childhood) knowledge is acquired by what is real and solution too. The same in the adolescence stage where an objective reality is denied and values and choices are relative. However, Broughton argued that relativism is superseded by what he called a new objective epistemology, where the self creates rational knowledge through an active, social process. Epistemological development after relativism.

## 2.7 Strategies to Foster Critical Thinking

Brookfield (1987) enlists what he considers are the most effective strategies to develop critical thinking.

1. Affirm Critical Thinkers Self-Worth

When trying to develop critical thinking it has to be considered that when trying to do so is important to show thinkers respect and value for their own selves. Many times thinkers become afraid of expressing opinions or making decisions actively in a situation because when they are asked to do it they feel they are being attacked by others.

2. Listening Attentively to Critical Thinkers

Listening actively implies attention and intellectual efforts to understand what is being said, taking into account verbal and nonverbal behaviors. After listening carefully we can know how to help. Questions have to be framed and developed by exercises that refer to past experiences.

3. Show That You Support Critical Thinkers' Efforts

"Helper has to simultaneous challenge students' old modes of thinking and to provide structure and provide structure and support for the development of new ones". (Meyers, 1986; cited in Brookfield, 1987, p. 54))

4. Reflect and Mirror Critical Tinkers Ideas and Actions

Reflecting back to their attitudes, rationalizations and habitual ways of thinking and acting as a result helpers function as mirrors allowing individuals to view their own motivations, actions and justifications as if they were those of others.

5. Motivate People to Think Critically

Any professional or person need to be listened even if the ideas are in the fantasy or dreams. People look for changes and needed to show their ideas to get self- confidence sharing ideas.

6. Regularly Evaluate Progress

With simple exercises or activities a teacher can evaluate what students have already learn in any skill and students are engaged in studying and to go to class. This will help to identify lacks and what a teachers needs to do next.

7. Be Critical Teachers

Gamson and Associates (1984; cited in Brookfield, 1987) establish that teachers have to foster creativity, student self-direction and the openness of different interpretations of any particular area. According to Freire (1986, cited in Brookfield, 1987) critical teachers need to possess certain characteristics such as competence, courage, risk taking, humility and political clarity.

When exercising critical reading skills, reading strategies have to be applied and promoted as the general strategies mentioned above. This applies to both teachers and students. We can conclude that if the teacher does not know how to read critically s/he won't be able to foster this skill on his/her students.

In the ELT context activities which require learners to become more active and questioning are necessary. Activities such as group work, project-based work, and presentation skills which reflect the overall instructional goal (Kusaka & Robertson, n.d. cited in Shirkhani and Fahim 2011, pp.1093) can be considered appropriate for this purpose.

Also The Qualifications and Curriculum Authority (2001-2002; cited in Shirkhani and Fahim 2011, pp.1093), a non-departmental organization sponsored by the Department of Education and Skills in the U.K, outlines activities to include: (1) identifying and

understanding the relations between the foreign language and first language in terms of lexis, syntax, and grammar; (2) drawing inferences from unfamiliar language and unexpected responses; (3) using their grammatical knowledge to guess the meaning of new words and structures; (4) using language creatively to express ideas, attitudes and opinions; (5) adapting and revising language for their own purposes; (6) identifying and using language patterns; and (7) managing their own use of language-learning strategies.

After outlining the theoretical foundations for this study, I will now proceed to discuss the methodology employed.

# CHAPTER 3. METHODOLOGY

The present chapter provides specific information about the participants, setting and the characteristics of the instrument used to carry out this research and the procedures in which this study was developed. The instrument was not piloted because it was about the personal interpretations of the participants to measure their level of critical thinking. At the end, the results were qualified according to the criteria of the instrument applied in order to get more reliability and validity.

## 3.1 Participants

The instrument was applied with students of the School of Languages with university level in Puebla City, México. Participants were 6 women and 6 men from the Seminar 1 course in different groups; they were chosen due to the accessibility and their level of English to express themselves and the contact with information from different surveys by reading.

## 3.2 Setting

The instrument was applied to 12 persons. The level mentioned is needed because in that level students are able to read, understand and express by themselves. The School of Languages has all de resources to have an adequate learning development, this resources are computers, library and access to the Internet. The most important point is that at the point of taking the Seminar 1 course, critical thinking is used to interpret information, making deductions and inferences in order to write a thesis.

## 3.3 Instrument

Data was collected by an existing free questionnaire of multiple choice called Practice Aptitude Tests from the web page called Assessment Day uploaded in 2013 (See appendiz C). This instrument is divided into 5 sections with the topics of inferences section which contains 3 statements; assumptions section which contains 4 statements; deductions sections

which contains 7 statements. Another section is interpreting information with 4 statements and the analysis of arguments section which contains 7 statements. The questionnaire contains instructions and examples for each section, so participants cannot get lost at the moment of answering.

The instrument was adapted and applied in English and Spanish due to the kind of information participants are in contact with and for the purpose of contrasting. The original format was taken but changes were made in regards to the kind of information contained. The information included for the purposes of this research project was related to education and language learning selected from the ELT Journal. Also, 3 sections were selected making the instrument shorter and with more focus.

### 3.4 Procedure

First, the instrument was adapted according to participants' background as mentioned above. Second, it was administrated to all 12 participants in English and Spanish at the same time. After, data was collected in Excel for analysis. The total of correct or incorrect answers was quantified and illustrated in graphs to show findings. Finally, results were analyzed to determine the level of critical thinking the School of Language students have at this level of adulthood.

## CHAPTER 4: RESULTS

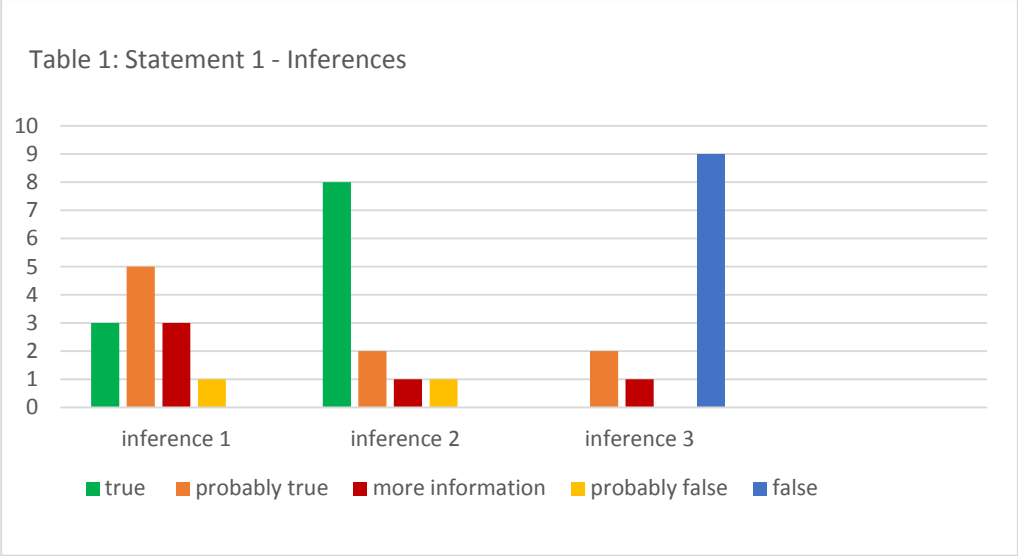
In this chapter, I present the analysis of the data obtained from the students' participation. As mentioned in the previous chapter, the two instruments applied to get the data were one in Spanish and another in English (see appendixes A and B).

The purpose of those questionnaires was to find out the differences between reading in Spanish and English and what would be the reasons of these differences. The objective was to know if critical thinking is developed in the same level in the L1 and L2 and if participants have acquired the abilities to make inferences.

Time was an important factor. Because of the difference of time between the applications of 2 different instruments it was possible to get real and precise results. The interval of time was from 1 to 2 weeks for some participants.

### 4.1 Student´s Questionnaire Results in English

The following tables show the results obtained in the applied questionnaires. The results are mentioned in the same order as they appeared in the instrument (See Appendix A).

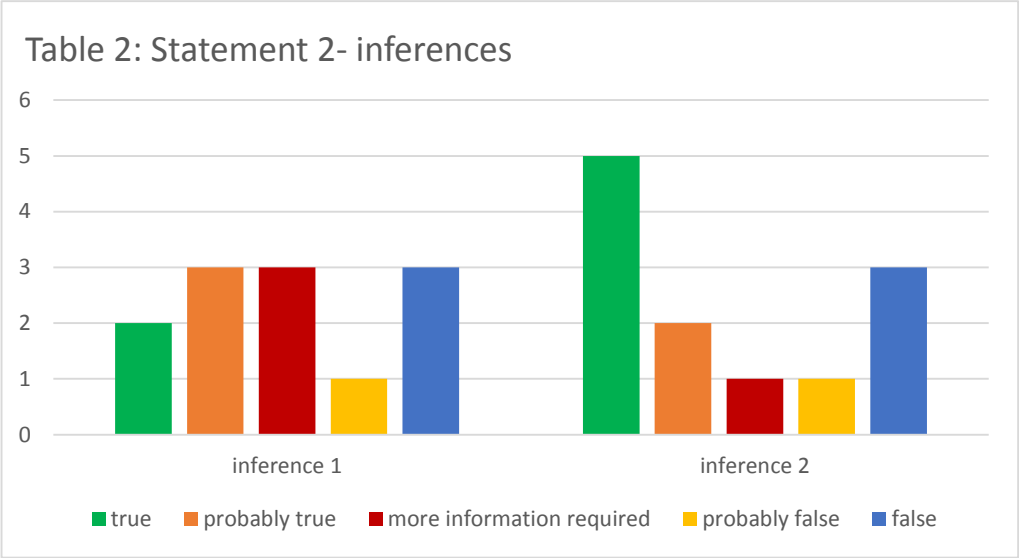



As can be seen above in table 1, in inference 1 out of 12 participants, 5 answered correctly with ***probably true***. It is worth mentioning that one participant answered 'false', which was

totally wrong. I consider that the participants that answered 'more information required' is not correct because the text clearly mentions the correct answer.

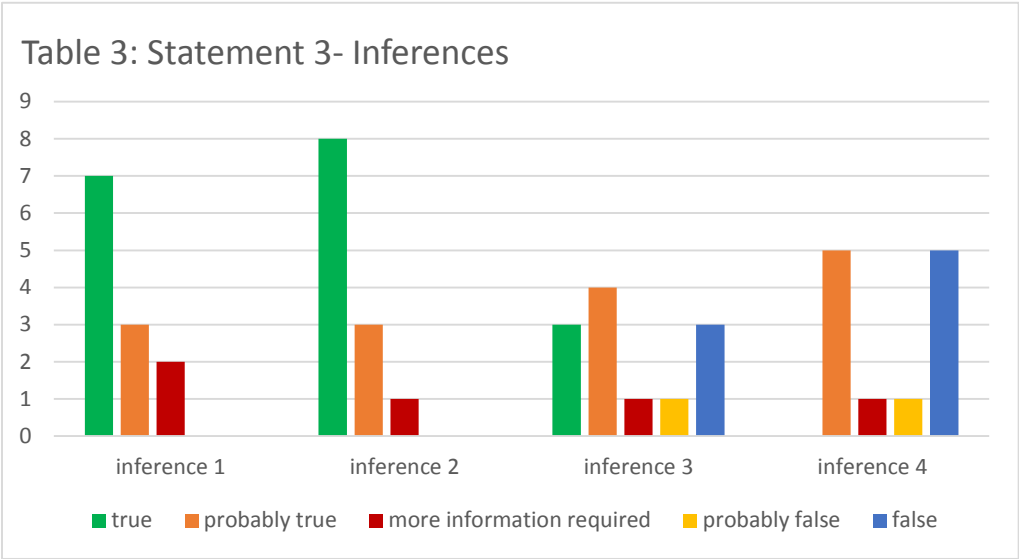
In relation to Inference 2, 8 answered correctly with ***'true'*** but 4 were totally wrong.

In inference 3, out of 3 participants, 9 answered correctly with ***false***, the others were wrong.




Inference 1. In this case the correct answer is ***false.*** It is worth noticing that despite the fact that 3 answered correctly, the same number answered with 'probably true' and with 'more information required'. This shows the thin difference between the answers which can confuse the participant at the moment of deciding the correct one.

Inference 2. The answer is ***totally false*** with 3 answers, but 5 participants answered 'true' which is totally wrong and is majority. 2 answered 'probably true', 1 with 'more information required' and 1 with probably 'false'.

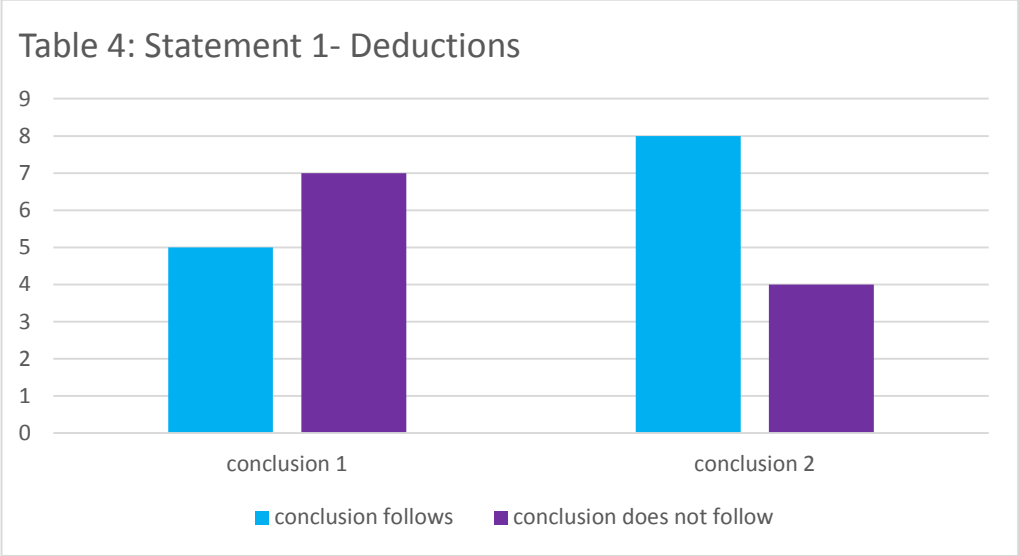



Inference 1. ***True*** is the answer of this inference and as can be seen 7 of the participants were correct. But 3 answered 'probably true' and 2 answered 'more information required'.

Inference 2. In this case most of the participants, 8 were wrong and 3 answered correctly with ***probably true***.

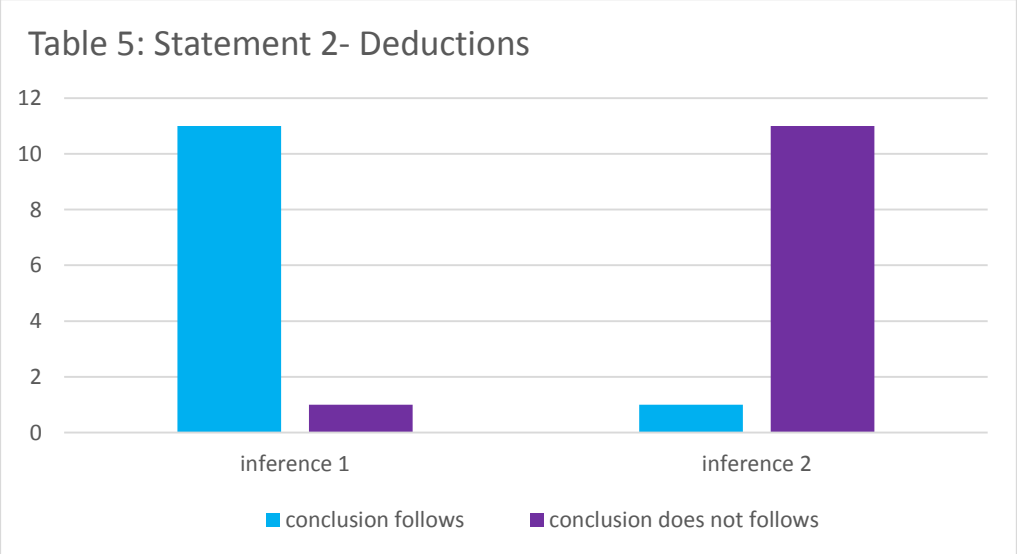
Inference 3. The correct answer is completely ***true***. But only 3 of the participants answered correctly, 4 answered probably true, 1 with 'more information required', 1 answered 'probably' false. It is worth pointing out that 3 participants answered 'false', the same number of 'true'.

Inference 4. It is interesting to point out that in this particular statement we obtained the same percentages for the correct answers with '***false***' and wrong answers with 'probably true' with 5 each one. 2 participants answered wrong with ´more information required' and 'probably false'.

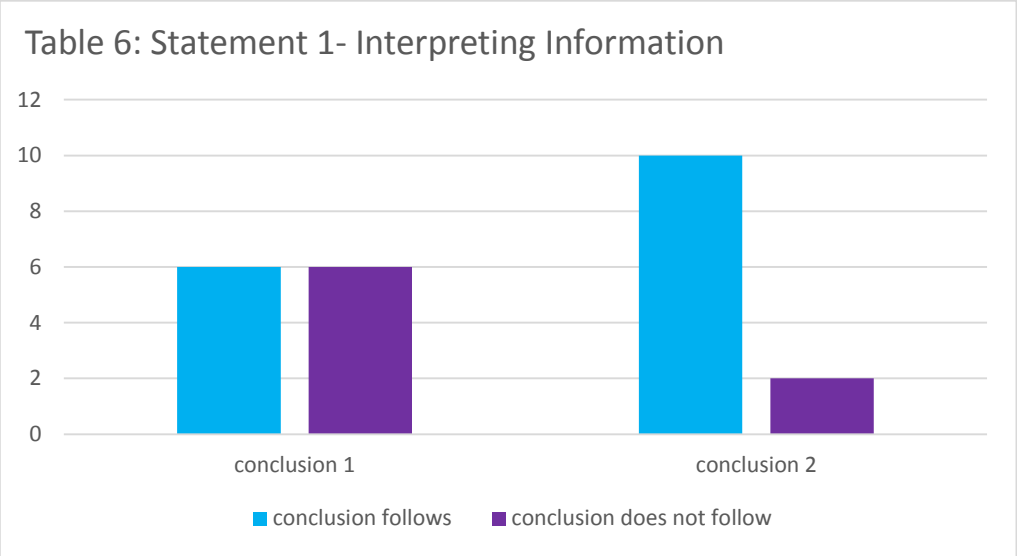



Conclusion 1. The results did not show favorable results because 7 of 12 participants answered incorrectly with 'conclusion does not follow', while the correct answer was ***conclusion follows***

Conclusion 2. The correct answer is ***conclusion does not follow*** but 8 participants answered incorrectly.

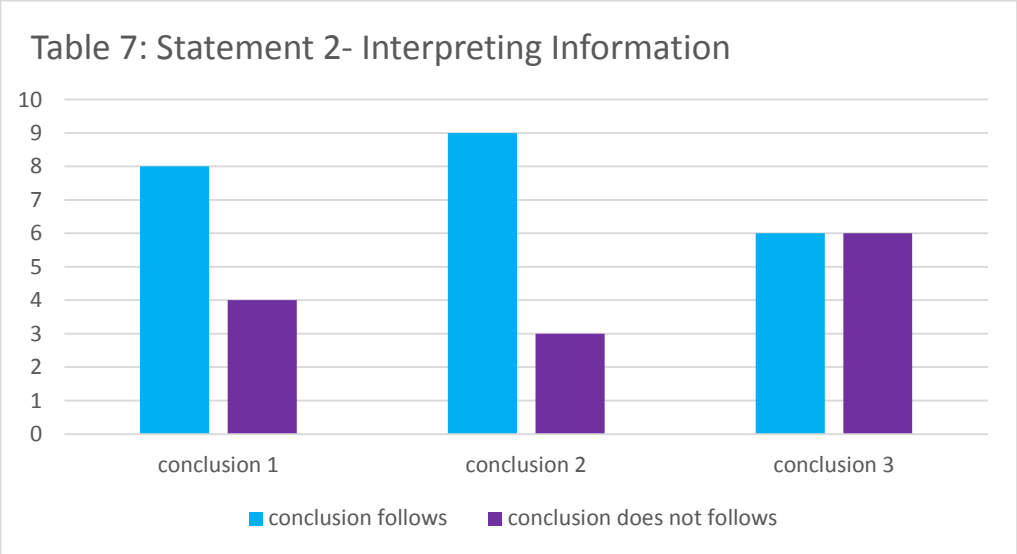



In this statement, in both inferences 11 of the participants were correct in showing their total comprehension of the statement. Except from 1 participant whose inference was incorrect.




Conclusion 1. It is interesting to point out that in this statement we obtained the same percentages for 'conclusion follows' and 'conclusion does not follow' with 6 in both options respectively but the correct answer is ***conclusion follows.***

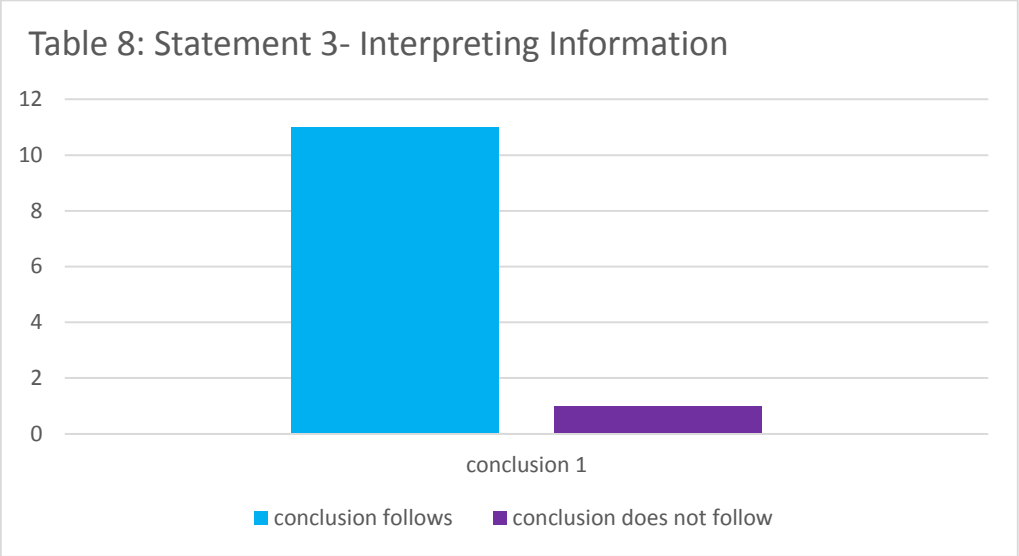
Conclusion 2. This answer is conclusion ***follows*** and 10 of the participants were correct.




In conclusion 1 the answer is that the '***conclusion does not follow'*** and it is worth noticing that 8 answered incorrectly and only 4 answered correctly.

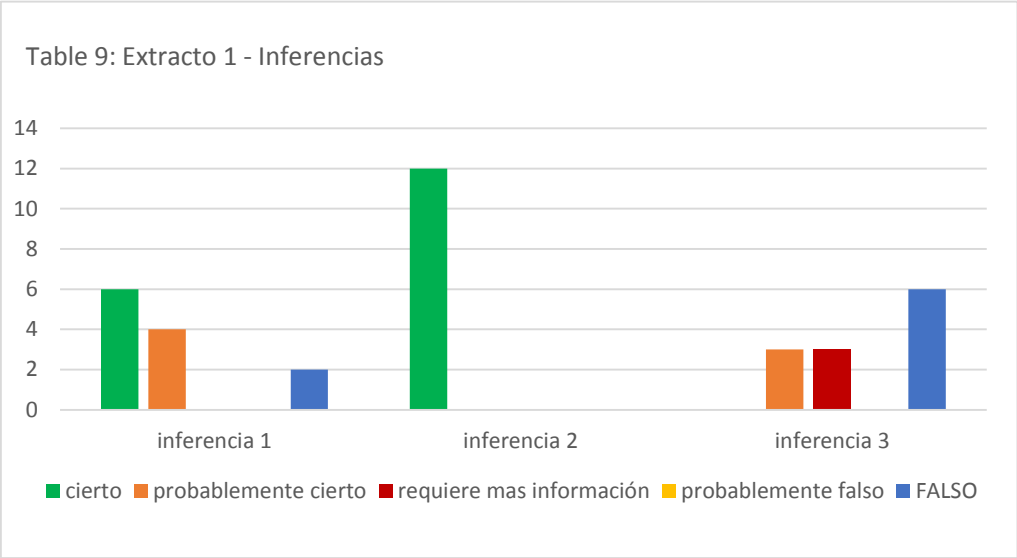
Conclusion 2 was comprehended better with 9 of 12 who answered correctly with ***conclusion follows.***

Conclusion 3. The answer for this was '***conclusion follows'*** where 6 participants answered correctly but as can be seen, it is interesting to point out that in this particular statement we obtained the same number for 'conclusion does not follow'




In this last statement I considered only 1 conclusion. 11 participants answered correctly, that shows a good interpretation of the statement.

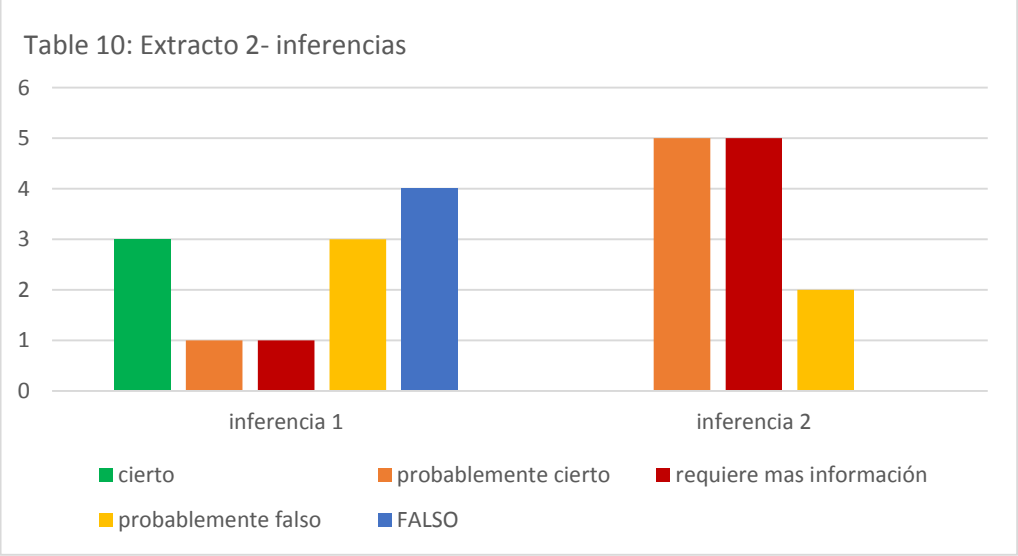
### 4.2 Students' Spanish Questionnaire Results




As can be seen in table 9 above in 'inferencia 1' (inference 1), 4 participants answered correctly with '**probablemente cierto' (probably true)**. 6 participants answered 'cierto' (true) and 2 considered 'falso' (false) which is wrong.

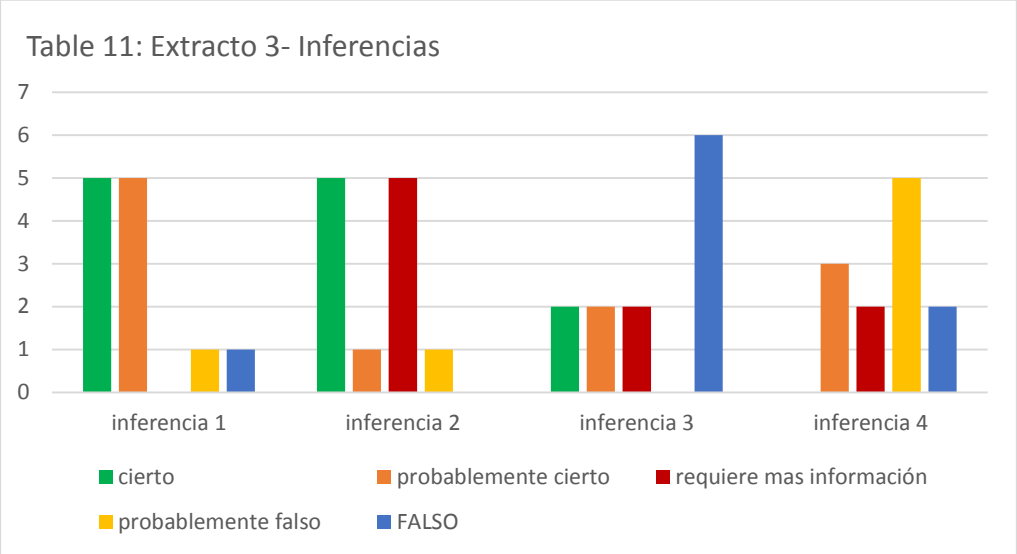
In 'inferencia 2' (inference 2) the 12 participants answered correctly with 'cierto' (true).

With 'inferencia 3' (inference 3) something interesting came up. 3 participants answered 'probablemente cierto' (probably true) the same as 'requiere mas información' (more information required) which were wrong because the correct answer was '**falso**' (false) where 6 participants answered correctly.



In table 10 above we can see that in 'inferencia 1' (inference 1) the participants who answered correctly where the ones that answered **'falso' (false)** with 4. The other ones were wrong, 3 with 'cierto' (true) and 'probablemente falso' (probably false), 1 for 'probablemente cierto' (probably true) and the same for 'requiere más información' (more information required).

In 'inferencia 2' (inference 2) there were no participants who answered correctly with '**falso**' (false). 5 participants answered 'probablemente cierto' (probably true) the same for 'requiere mas información' (more information required) and 2 answered 'probablemente falso' (probably false)



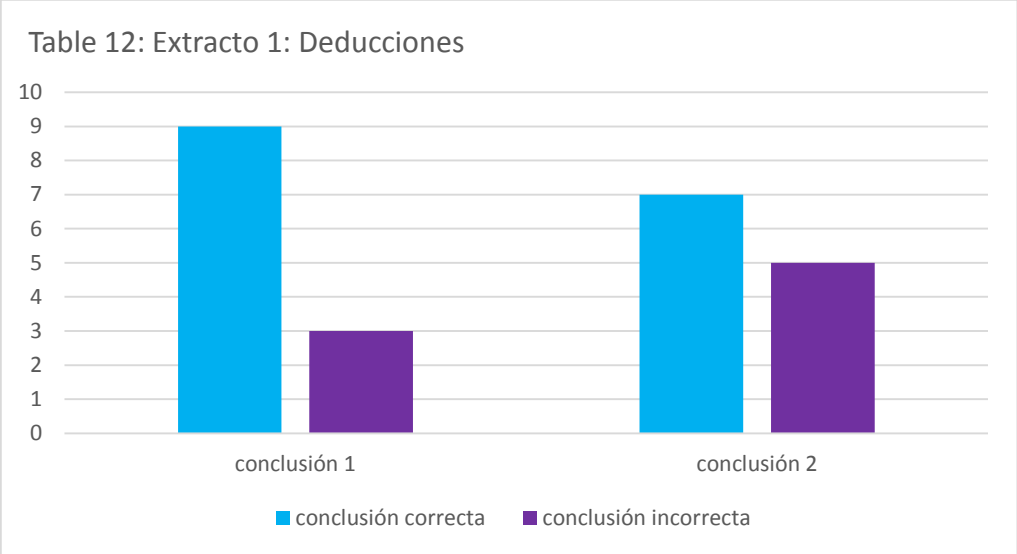

In table 11 in 'inferencia 1' (inference1) we have 5 of the participants who answered correctly with '**cierto**' (true) the same number but wrong with 'probablemente cierto' (probably true) then 1 participant for 'probablemente falso' (probably false) and four 'falso'(false).

Next, in 'inferencia 2' (inference 2) it is worth mentioning that only 1 participant answered correctly in '**probablemente cierto'** (probably true). There were 5 who answered 'cierto' (true) and 'requiere más información' (more information required). Finally 1 who answered 'probablemente falso' (probably false)

The results of 'Inferencia 3' (inference 3) are rather contradictory because there are 2 participants for three options 'cierto' (true) 'probablemente cierto' (probably true) and 'requiere mas información'(more information required) being correct the ones that answered

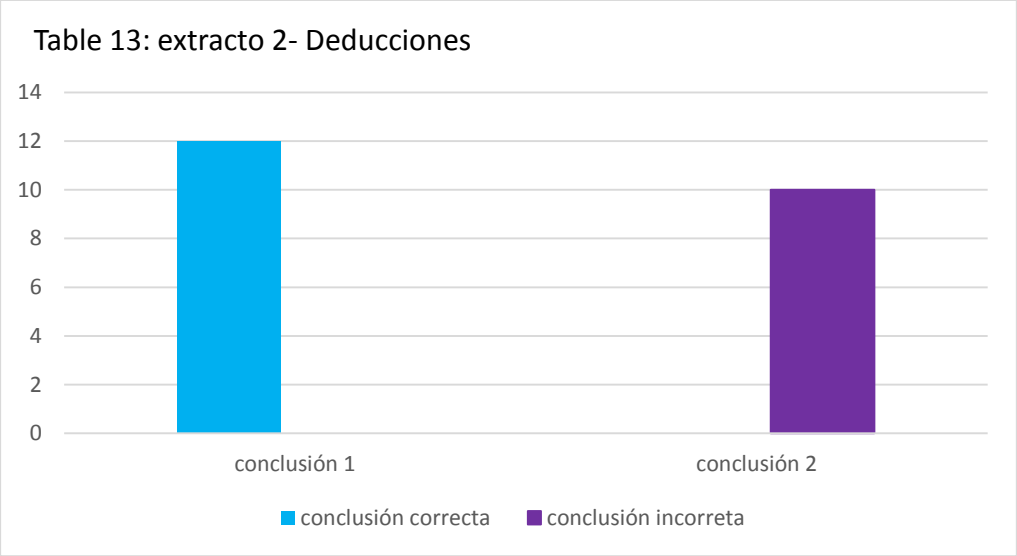
***'cierto'(true)*** with 2 correct answers. The majority were 6 who answered wrong with 'falso' (false)

The correct answer for 'inferencia 4' (inference 4) was **'falso' (false)** and 2 participants were correct. The majority which were 5 participants answered 'probablemente falso' (probably false), 2 answered 'requiere más información' (more information required) and 3 answered 'probablemente cierto' (probably true)

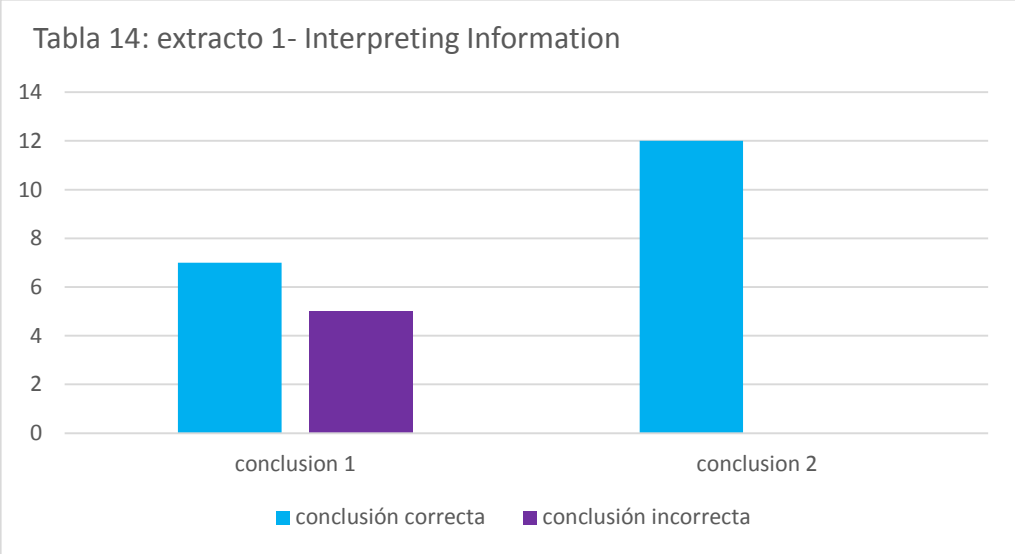



In table 12 above for 'conclusión 1' (conclusion 1) 9 of the participants answered correctly with '**conclusion correcta' (conclusion follows)** and only 3 answered incorrectly.

In 'conclusión 2' (conclusion 2) happened the contrary 7 answered wrong with 'conclusión correcta' (conclusion follows) when the correct answer was '**conclusión incorrecta' (conclusion does not follow)** with 5 of the participants.

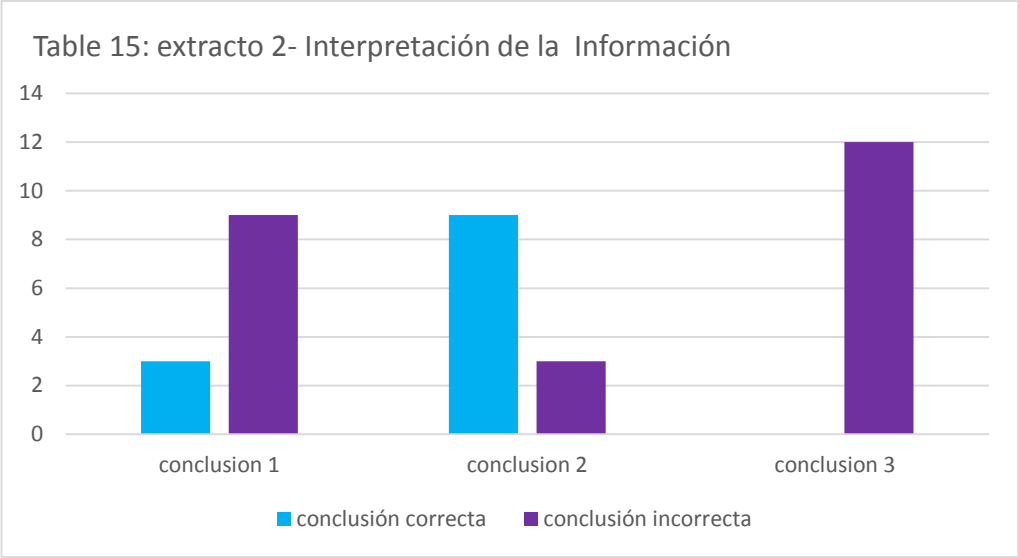



In table 13 in both conclusions we can see that all the participants answered correctly with '**conclusión correcta' (conclusion follows)** in conclusion 1 and with 'conclusión incorrecta' (conclusion does not follow) in the second conclusion.




In table 14 above can be seen in 'conclusión 1' (conclusion 1) 7 of the participants answered correctly in '**conclusión correcta'** (conclusion follows) and 5 answered wrong with 'conclusion incorrecta' (conclusion does not follow)

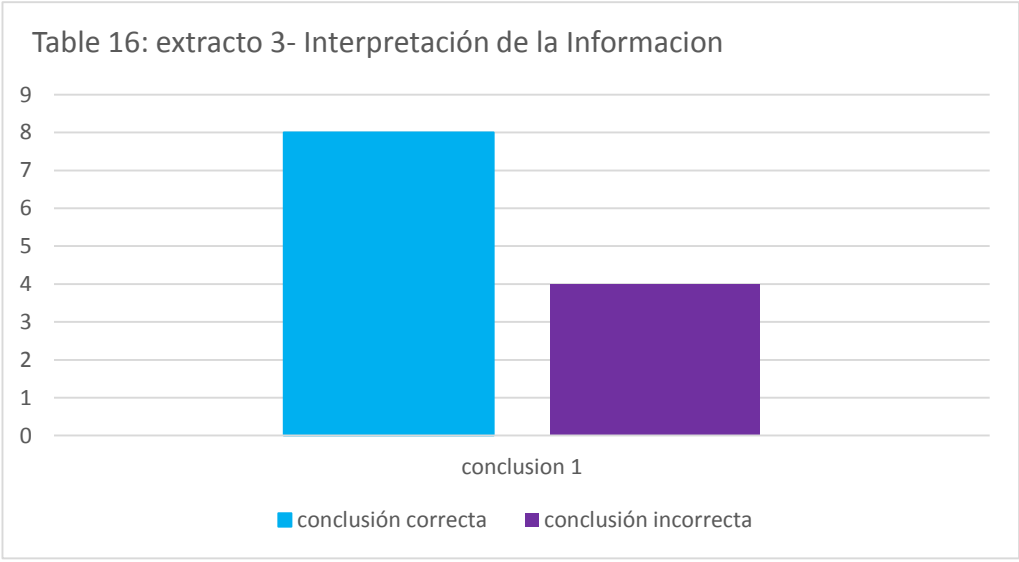
In 'conclusión 2' (conclusion 2) it is important to mention that all participants answered correctly choosing '**conclusión correcta**' (conclusion follows)




As can be seen above in 'conclusión 1' (conclusion 1) 9 of the participants answered correctly with '**conclusión incorrecta' (conclusion follows)** and only 3 answered wrong.

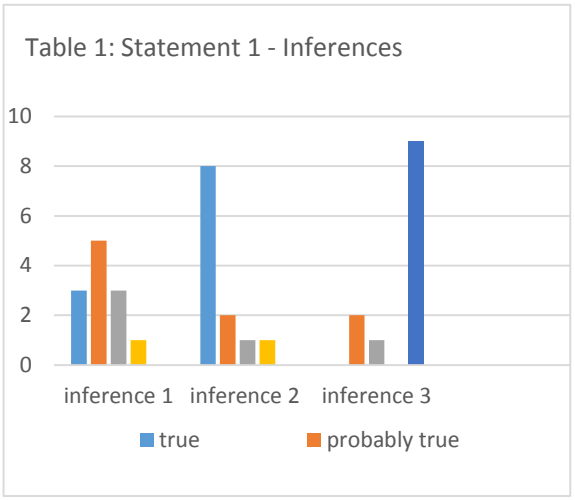
Again in "conclusión 2" (conclusion2) 9 answered correctly with '**conclusión correcta' (conclusion follows)** and 3 answered wrong.

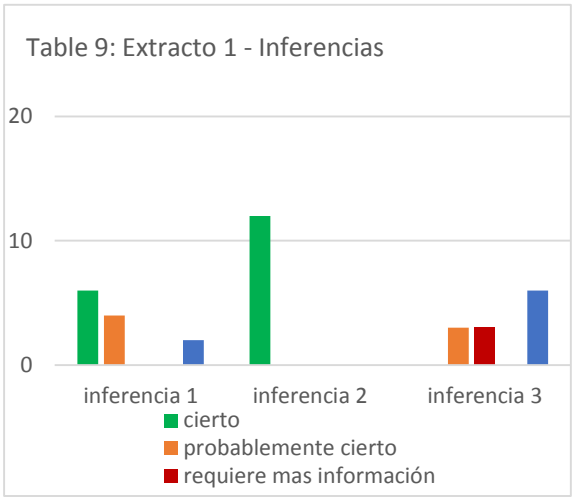
In 'conclusion 3' (conclusion 3) all participants answered correctly with '**conclusión correcta' (conclusion follows).**




As can be seen, out of 4 of the participants that answered wrong, 8 answered correctly with '**conclusión correcta' (conclusion follows**

## 4.3 Comparison of results

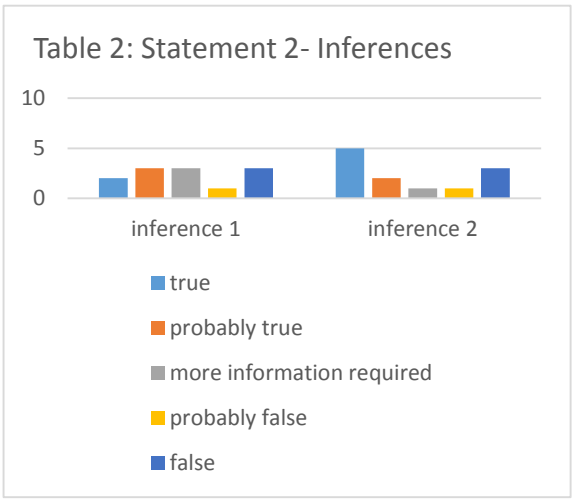


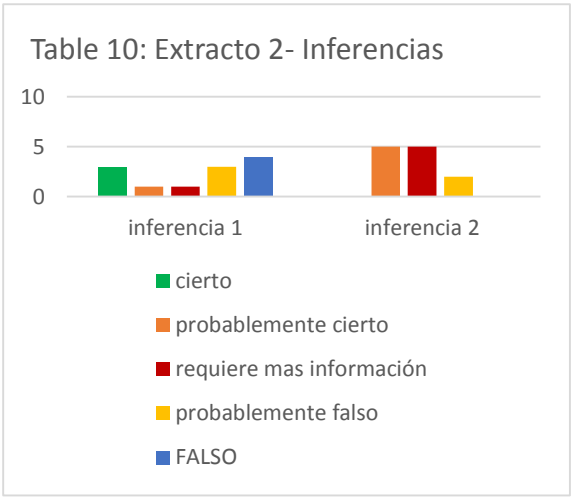




In inference 1 the correct answer is ***probably true or 'probablemente cierto'*** and the difference in both English and Spanish results as can be seen is that in English 5 participants answered correctly but in Spanish 6 answered with true which can be taken as correct due to the light line between true and probably true and 4 for the correct answer.

In inference 2 the correct answer is ***true or 'cierto'*** in both tables most of the participants answered correct, in English were 8 and in Spanish were 12.

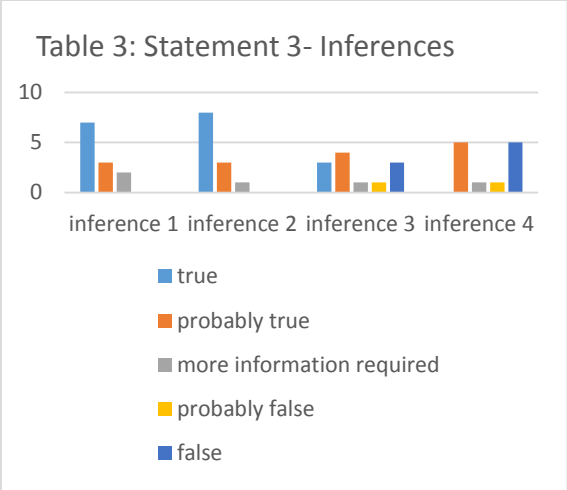
In inference 3 most of participants answered correctly with ***false or 'falso'*** in both versions, 9 in English and 6 in Spanish.

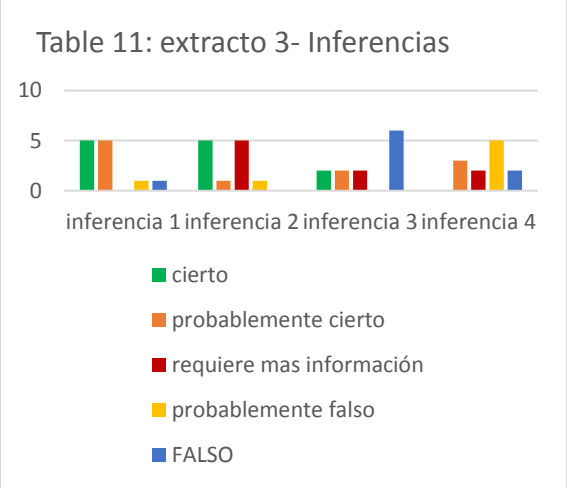


In table 2 above or ‘tabla 2´ it is worth to mention that in inference 1 the correct answer is ***false or ‘falso’*** but in the English version there are 3 participants for the answers in probably true, more information required and the 3 that answered correctly with false which can be interpreted as a misunderstanding of the inference established and a lack of analysis. This is different from the Spanish version with 4 participants who answered correctly.

In inference 2 the correct answer was the same ***false or ‘falso’*** but notice that in both tables the majority of the participants answered incorrect. In English only 3 answered correctly and in Spanish nobody. But in Spanish there are 4 answers for ‘probablemente cierto’ (probably true) and ‘requiere mas información’ (more information required)



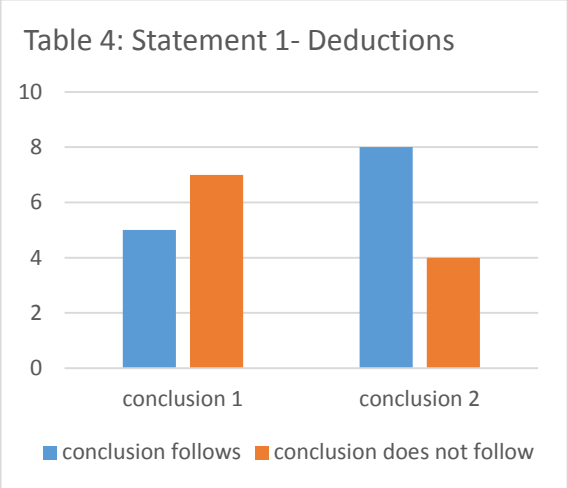

In inference 1 the correct answer is ***true or ‘cierto’*** and in the English version 7 participants answered correctly which is the majority but an interesting case in the Spanish table which shows the same answers for ‘cierto’(true) and ‘probablemente cierto´ (probably true) . In this case, both can be considered correct and this could represent the decision- making process to choose between a little light line.

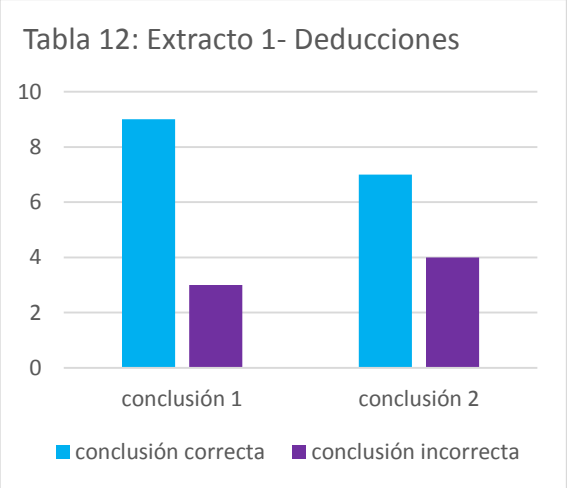
***Probably true or ‘probablemente cierto’*** is the correct answer for the inference 2 which in English version 8 participants answered correct but in Spanish version there are the same 5 participants for ‘cierto’ (true) and ‘requiere más información’ (more information required)

which is a bigger difference between the answers and both answers cannot be considered correct.

The correct answer for inference 3 is ***true or 'cierto'*** but in the English version 4 of the participants answered with probably true and only 3 who answered correctly but both answers could be considered correct due to the little difference between the answers. Contrary, in Spanish 6 participants answered false which is totally wrong taking into account that the questionnaire was in the participants' mother tongue.

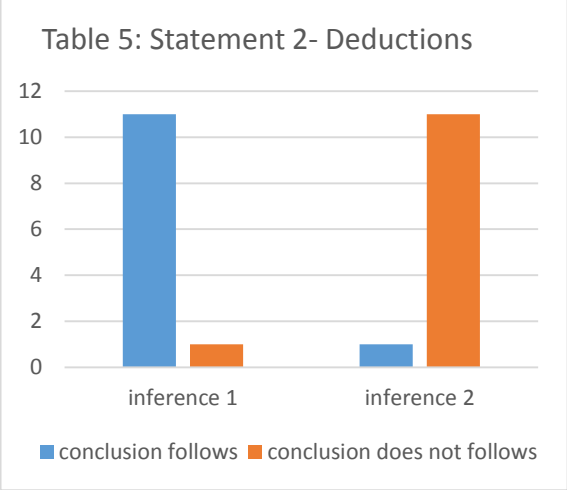
Finally, the answer for inference 4 is ***false*** and it is worth to notice that there are the same 5 participants for the correct answer with ***false or 'falso'*** and the same for true so this can be interpreted as a lack of analysis of the statement and the inference. On the other hand the Spanish results show that 5 participants answered with 'probablemente falso´ (probably false) and 2 for ´falso´ (false) and these answers can be considered correct because there is not a big difference between probably false and false.

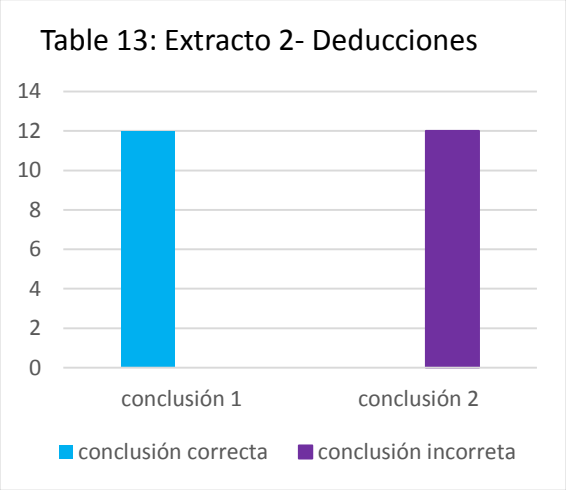


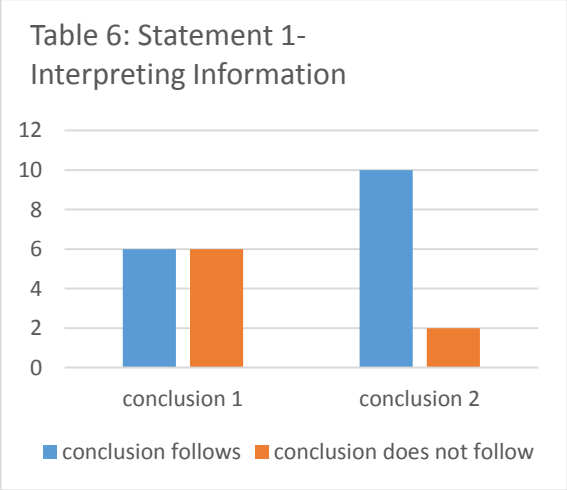

***Conclusion follows or 'conclusión correcta'*** is the correct answer for inference 1, in English version most of the participants answered wrong with 7. This did not happen with Spanish results that shows 9 participants with the correct answer.

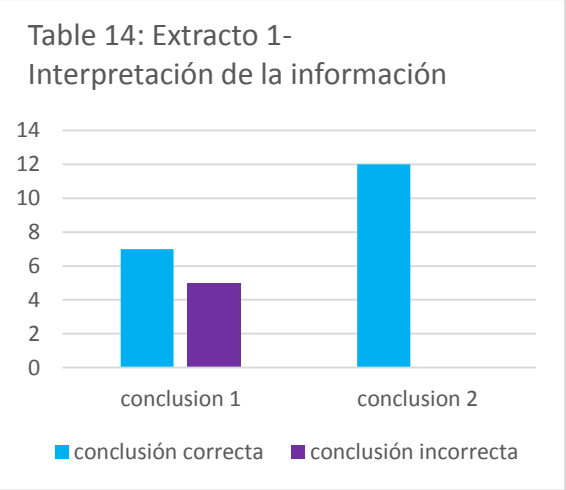
In conclusion 2 the answer is ***conclusion does not follow or 'conclusión incorrecta'*** and can be seen that in both versions most of the participants answered wrongly.



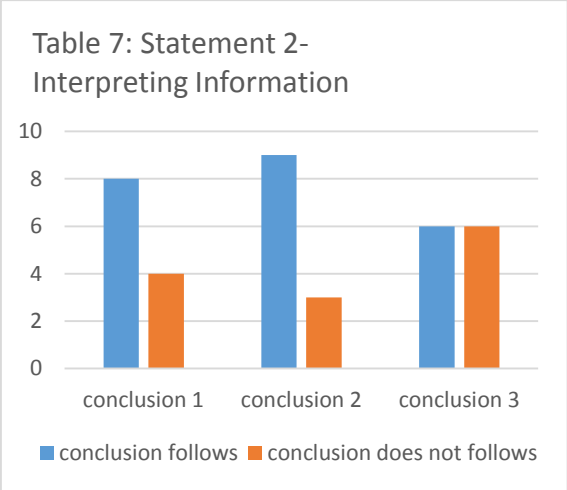

In both versions and both inferences most of the participants answered correctly which means that the inferences and the statements were comprehended and analyzed in a correct way.

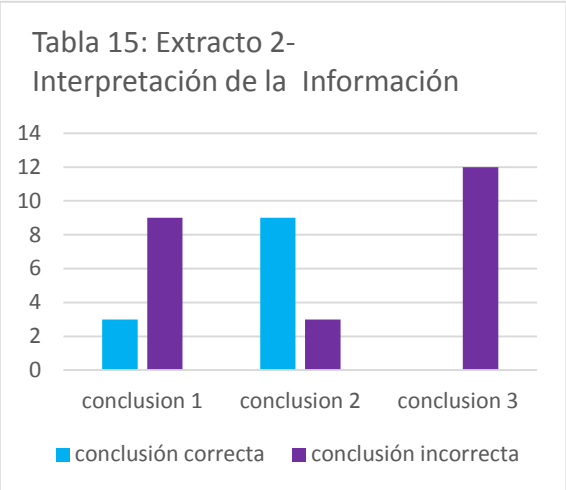



In conclusion 1, while in the English version there are the same 6 participants who answered 'conclusion follows' and 'conclusion does not follow' in the Spanish version 7 participants answered correctly with '***conclusion correcta'or conclusion follows*** which shows a better comprehension in the mother tongue as hoped.

Conclusion 2 did not have problems because in both versions most of the participants answered correctly with ***'conclusión correcta' or 'conclusion follows'***

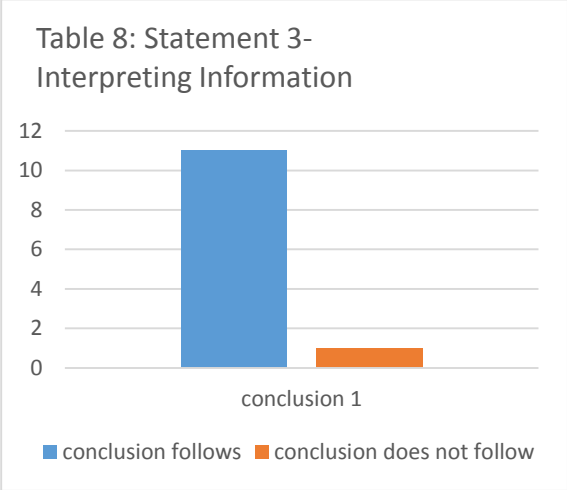


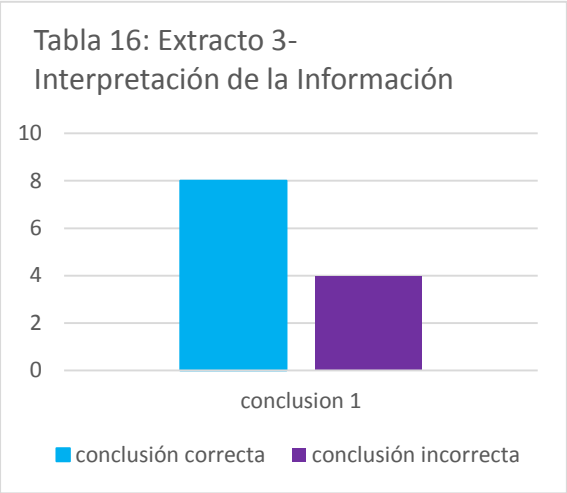




The correct answer for conclusion 1 is ***conclusion does not follow or 'conclusión incorrecta'*** and can be seen that in English results most of participants answered wrong with 8 of them but in Spanish 9 answered correctly which was hoped being Spanish the mother tongue so there was a better comprehension.

For conclusion 2 the correct answer is ***conclusion follows or 'conclusión correcta'*** and can be seen that in both tables most of the participants answered correctly which does not represent a problem.

In inference 3 can be noticed that there are the same number of participants who answered conclusion follows and conclusion does not follow, 6 for each option. But in Spanish the 12 participants answered wrong because the correct answer was ***'conclusion correcta' or conclusion follows***. So this means that there were a misinterpretation of the statement and of the inference. The most important think to mention is that all participants were wrong when the questionnaire was in their mother tongue.




In both versions there is only 1 conclusion and were answered correctly by most of the participants in each case.

# CHAPTER 5: CONCLUSIONS

In this chapter a summary of the results and their main highlights are presented. Also implications, limitations and some directions for further research will be provided.

## 5.1 Summary

The purpose from the beginning was to compare the critical thinking skills used in English as second language with those in Spanish as mother tongue. The same instrument was used, first modified, and rewritten, translated and applied with one and two weeks of difference.

After graphing the results it was found that in the inference section, having five options with a little difference (probably true and true) some participants were confused when choosing the correct option, resulting in the same number of answers for 'probably true' and 'true' (see table 11). This may reflect that the options were too close, and therefore, made no difference to participants. Separately, in the English version results, we can note that participants considered the statement in the conclusion part, either "conclusion follows" or "conclusion does not follow", showing the same numbers (See table 6). In the Spanish version, though the instrument was in the participants' mother tongue, we can also note that the numbers are equally distributed when five options were given to participants (see table

11). But in general, most of the answers in Spanish were correct. This may be due to the fact that participants' critical thinking skills may be more developed in their mother tongue.

What may be concluded is that participants did not dedicate enough time to read and analyze the statements provided in English. Another reason may be that participants did not have the adequate level of English language. Therefore, a difference between the English and the Spanish results was found. This may affect their process of writing a thesis because they have to read, select, and interpret and make decisions about useful information in English.

### 5.2 Implications

The analysis and results suggest that more reading and thinking strategies in English need to be developed in order to increase participants' critical thinking skills which will allow students to think in English. In this way, students will start exploring new vocabulary and new kind of knowledge. In the same vein, this study may help prepare students better when writing academic projects and foster the need to exercise their critical thinking skills when formulating ideas in English and probably show more creativity in their written work. For teachers, these results may help them foster more critical thinking skills in their students.

### 5.3 Limitations of the study

Firstly, the instrument had to be modified and translated to give more focus to the objectives of the investigation and a more suitable kind of information for the participants to get a better comprehension in the statements. After, translating and applying took more time than established.

The number of participants was limited, and applying this instrument to a larger number of students will help us increase the validity and reliability of results. The limited number of participants in this research project may be due to the fact that some of them were rather reluctant to take part in this study. Others did not turn back the questionnaire or take the second part because of time constraints.

## 5.4 Directions for further research

Although the results of this study may be significant for both teachers and students of English, this may be the basis for more research to be carried out in the same field. This may be done using different and more complete instruments. Additionally, research may be carried out with different groups of participants in relation to age, academic studies, level of English and students with different backgrounds.

This study shed some light into students' critical thinking skills and teachers might want to motivate students to exercise these skills in their everyday practice.

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## Appendix A

Instructions: Please read the following statements and select the best answer. This instrument will be used anonymously for my thesis, please use a nickname instead of your real name. Thank you very much for your help.

Nickname: _____

SECTION 1. INFERENCES

Statement 1

Aimed primarily at teachers whose first language is not English, and in response to a perceived need for affordable training opportunities in a wide range of contexts, the TKT was originally 'designed to assess English language teachers' knowledge about teaching, including concepts related to language, language use and the background to and practice of English language teaching and learning' (Harrison 2007: 30).

Inference 1. The TKT only assesses teachers whose first language is not English.

True
Probably true
More information required
Probably false
False

Inference 2. One way to measure English Teaching knowledge is through the language use.

True
Probably true
More information required
Probably false
False

Inference 3. Context has nothing to do in learning and acquiring the language.

True
Probably true
More information required
Probably false
False

Statement 2

Curiously, one reason that teaching without materials may not be a good idea, according to Harmer, is that ‘some learning is individual. We think things through in our own heads. When we read a book, listen to a lecture or study we often do this by ourselves’

Inference 1. Hamer establishes that materials may not be needed when learning is individual.

True
Probably true
More information required
Probably false
False

Inference 2. Everything we learn is individual, we make it by ourselves.

True
Probably true
More information required
Probably false
False

Statement 3.

Originally conceived purely as a test of knowledge, the TKT did not at first include an assessment of teaching ability in the classroom. Yet there was evidence to suggest that, for some teachers at least, the TKT was perceived as being as much a test of ability as of knowledge. An impact study on the TKT in Uruguay, for instance, found that ‘even though TKT is a test of knowledge, 61% of respondents seemed to expect the test to have an impact on their teaching practice’ (Valazza 2008: 22). This expectation may well derive from the widely held belief that knowledge does in fact equate with ability and that the more you know, the better you teach.

Inference 1. The TKT was designed to assess English knowledge.

True
Probably true
More information required
Probably false
False

Inference 2. Vocabulary knowledge helps to teach better.

True
Probably true
More information required

Probably false
False

Inference 3. 39% of respondents claimed that the tests did not have an impact in teaching practice.

True
Probably true
More information required
Probably false
False

Inference 4. The TKT assesses teaching ability more than knowledge.

True
Probably true
More information required
Probably false
False

SECTION 2. DEDUCTIONS

Statement 1.

From research in EFL contexts, Nakashima (2006) reported that 2,000 to 5,000 hours are necessary to achieve a basic proficiency in a second language. Unfortunately, studies in EFL contexts, such as Hato (2005), show that students in Japan typically receive only 920 hours of classroom instruction before senior high school graduation.

Conclusion 1. Japanese students can achieve a basic proficiency in a second language.

CONCLUSION FOLLOWS
CONCLUSION DOES NOT FOLLOW

Conclusion 2. All students receive less than the hours needed according to Nakashima to achieve the basic proficiency.

CONCLUSION FOLLOWS
CONCLUSION DOES NOT FOLLOW

Statement 2.
Terauchi, Koike, and Takada (2008) surveyed 7,354 business persons and concluded that using English in the workplace meant the skills of (1) delivering presentations in English, (2) participating in business negotiations, and (3) having a proficiency level of at least 800 points on the TOEIC (Test of English for International Communication). Interestingly, it is estimated that an EFL learner would need 1,350 hours of study to attain 800 points on the TOEIC1 (Prolingua 2000).

Conclusion 1. Using English in workplace help to improve some skills and to pass the TOEIC.

CONCLUSION FOLLOWS
CONCLUSION DOES NOT FOLLOW

Conclusion 2. 1, 350 hours of study help to pass any kind of test with any kind of students.

CONCLUSION FOLLOWS
CONCLUSION DOES NOT FOLLOW

SECTION 3. INTERPRETING INFORMATION

STATEMENT 1.

Britton et al.'s analysis of over 2000 texts from British secondary schools revealed that student writing across the curriculum was more than 60% transactional (expository and persuasive) and less than 6% expressive. Recommendations that followed in Britain and internationally were successful in increasing the amount of personal, expressive writing produced in schools, in the belief that this would lead to improvement in the quality of students' writing in general.

Conclusion 1. Transactional writing does not lead to improvement of students writing in general.

CONCLUSION FOLLOWS

CONCLUSION DOES NOT FOLLOW

Conclusion 2. Expressive writing should increase in Britain.

CONSLUSION FOLLOWS

CONCLUSION DOES NOT FOLLOW

STATEMENT 2.

Recent research has shown that infants as young as three days of age cry in the intonation pattern of their language (Mampe et al. 2009) and infants of six to nine months understand the meaning of words (Bergelson and Swingley 2012). This suggests that perhaps a better name for the period before infants utter their first word is *preverba*l as they already demonstrate some knowledge of language.

Conclusion 1. The language is innate because everybody is born knowing it.

CONCLUSION FOLLOWS

CONCLUSION DOES NOT FOLLOW

Conclusion 2. From 6 to 9 months people receive the input of the language.

CONCLUSION FOLLOWS

CONCLUSION DOES NOT FOLLOW

Conclusion 3. Since people are born they are able to produce words.

CONCLUSION FOLLOWS

CONCLUSION DOES NOT FOLLOW

STATEMENT 3.

Marion Tellier provides evidence of the positive effect gesture has on the memorization and recall of English words by French children with a mean age of 5, who had no prior exposure to English.

Conclusion 1. All children can acquire English words by gestures.

CONCLUSION FOLLOWS
CONCLUSION DOES NOT FOLLOW

Conclusion 2. More than age of five gestures can help to acquire a second language.

CONCLUSION FOLLOWS
CONCLUSION DOES NOT FOLLOW

**Appendix B**

SECCIÓN 1. INFERENCIAS

EXTRACTO 1.

Dirigido principalmente para maestros cuya primera lengua no es inglés, y en respuesta a una necesidad percibida por oportunidades asequibles de formación en una amplia gama de contextos, el TKT fue originalmente "diseñado para evaluar el conocimiento de los maestros de inglés sobre la enseñanza, incluyendo conceptos relacionados al lenguaje, uso del lenguaje y los antecedentes para su uso y la práctica de la enseñanza y aprendizaje del inglés" (Harrison 2007:30)

Inferencia 1. El TKT solo evalúa a maestros cuya primera lengua no es inglés.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Inferencia 2. Una manera de medir el conocimiento en la enseñanza del inglés es mediante el uso del lenguaje.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Inferencia 3. El contexto no tiene nada que ver en aprender y adquirir el lenguaje.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Extracto 2

Curiosamente, una razón por la que enseñar sin materiales puede no ser una buena idea, de acuerdo a Hamer, es que "parte del aprendizaje es individual. Procesamos las cosas en nuestras propias mentes. Cuando leemos un libro, escuchamos una clase o estudiamos, a menudo hacemos esto por nosotros mismos"

Inferencia 1. Harmer establece que los materiales pueden no ser necesitados cuando el aprendizaje es individual.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Inferencia 2. Todo lo que aprendemos es individual, lo hacemos por nosotros mismos.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Extracto 3.

Concebido originalmente como una prueba de conocimiento, el TKT al principio no incluyó una evaluación de habilidad de enseñanza en el salón de clases. Sin embargo, había evidencia para sugerir que, por lo menos para algunos maestros, el TKT era percibido como una prueba tanto de capacidad como de conocimiento. Un estudio impactante en el TKT en Uruguay, por ejemplo, encontró que "aunque el TKT es un test de conocimiento, 61 % de los encuestados parecía esperar una prueba que tuviera un impacto en su práctica docente" (Valazza 2008:22). Esta expectativa bien puede derivar de la ampliamente sostenida creencia que el conocimiento de hecho equipara con habilidad y que mientras más se sabe, mejor se enseña.

Inferencia 1. El TKT fue diseñado para evaluar conocimiento de inglés.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Inferencia 2. Conocimiento de vocabulario ayuda a enseñar mejor.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Inferencia 3. 39% de los encuestados afirmaron que la prueba no tuvo un impacto en su práctica docente.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Inferencia 4. El TKT evalúa habilidad docente más que conocimiento.

Cierto

Probablemente cierto

Requiere más información

Probablemente falso

Falso

Sección 2. Deducciones

Extracto 1.

Según investigaciones en el contexto inglés como lengua extranjera, Nakashima (2006) reportó que 2,000 a 5,000 horas son necesarias para alcanzar una competencia básica en un segundo idioma. Desafortunadamente, otros estudios como Hato (2005), demuestra, que los estudiantes en Japón típicamente reciben solo 920 horas de instrucción de clase antes de la graduación del bachillerato.

Conclusión 1. Los estudiantes japoneses no pueden alcanzar una competencia básica en un segundo lenguaje antes de la universidad.

Conclusión Correcta

Conclusión Incorrecta

Conclusión 2. Todos los estudiantes reciben menos de las horas necesarias de acuerdo a Nakashima para alcanzar una competencia básica.

Conclusión Correcta

Conclusión Incorrecta

Extracto 2.

Terauchi, Koike, and Takada (2008) encuestaron a 7, 354 personas en el área de negocios y concluyeron que para ellos utilizar el inglés en el trabajo significaba poseer las habilidades de (1) realizar presentaciones en inglés, (2) participar en asuntos de negociaciones y (3) tener un nivel de competencia de por lo menos 800 puntos en el TOEIC (Test of English for International Communication). Interesantemente, está estimado que un aprendiz de EFL necesitaría 1, 350 horas de estudio para alcanzar 800 puntos en el TOEIC1 (Prolingua 2000).

Conclusión 1. Usar inglés en el trabajo ayuda a mejorar algunas habilidades y para aprobar el TOEIC

Conclusión Correcta

Conclusión Incorrecta

Conclusión 2. 1,350 horas de estudio ayudan a aprobar cualquier tipo de prueba con cualquier tipo de estudiantes.

Conclusión Correcta

Conclusión Incorrecta

Sección 3. Interpretar información.

Extracto 1

El análisis de Britton et al. De alrededor de 2000 textos de escuelas secundarias británicas revelaron que la escritura del estudiante a través del plan de estudios fue más del 60% transaccional (de exposición y persuasivo) y menos del 6% expresivo. Las recomendaciones siguientes en Gran Bretaña e internacionalmente fueron exitosas en el aumento de la cantidad de la escritura personal y expresiva producida en las escuelas, según la creencia de que esto conduciría al mejoramiento en la calidad de la escritura de los estudiantes en general.

Conclusión 1. La escritura transaccional no dirige a una mejora de la escritura de los estudiantes en general.

Conclusión Correcta

Conclusión Incorrecta

Conclusión 2. La escritura expresiva debería incrementar en gran Bretaña.

Conclusión Correcta

Conclusión Incorrecta

Extracto 2.

Terauchi, Koike, and Takada (2008) encuestaron a 7, 354 personas en el área de negocios y concluyeron que para ellos utilizar el inglés en el trabajo significaba poseer las habilidades de (1) realizar presentaciones en inglés, (2) participar en asuntos de negociaciones y (3) tener un nivel de competencia de por lo menos 800 puntos en el TOEIC (Test of English for International Communication). Interesantemente, está estimado que un aprendiz de EFL necesitaría 1, 350 horas de estudio para alcanzar 800 puntos en el TOEIC1 (Prolingua 2000).

Conclusión 1. Usar inglés en el trabajo ayuda a mejorar algunas habilidades y para aprobar el TOEIC.

Conclusión Correcta

Conclusión Incorrecta

Conclusión 2. 1,350 horas de estudio ayudan a aprobar cualquier tipo de prueba con cualquier tipo de estudiantes.

Conclusión Correcta

Conclusión Incorrecta

Extracto 2.

Investigaciones recientes han demostrado que los bebés desde los tres días de edad lloran en el patrón de entonación de su lengua materna (Mampe et al. 2009) y los bebés de seis a nueve meses entienden el significado de las palabras (Bergelson y Swingley 2012). Esto sugiere que tal vez se debería utilizar un mejor nombre para el periodo antes de que los bebés pronuncien su primera palabra, o sea *pre verbal* ya que demuestran cierto conocimiento del lenguaje.

Conclusión 1. El lenguaje es innato porque todos nacen sabiéndolo.

Conclusión Correcta

Conclusión Incorrecta

Conclusión 2. De 6 a 9 meses los humanos reciben estímulos lingüísticos.

Conclusión Correcta

Conclusión Incorrecta

Conclusión 3. Desde que los humanos nacen son capaces de producir palabras

Conclusión Correcta

Conclusión Incorrecta

Extracto 3

Marion Tellier proporciona evidencia del efecto positivo que los gestos tienen en la memorización y el recuerdo de palabras en inglés por niños franceses de 5 años de edad, quienes no tuvieron exposición anterior al inglés.

Conclusión 1. Los gestos ayudan a la adquisición de palabras en inglés en niños de 5 años.

Conclusión Correcta

Conclusión Incorrecta

## Appendix C

Available upon request.