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MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC  
RESEARCH**

**MENTOURI UNIVERSITY - CONSTANTINE  
FACULTY OF LETTERS AND LANGUAGES  
DEPARTMENT OF LANGUAGES / ENGLISH**

**USING DEDUCTION AS A MODE OF  
REASONING TO ENHANCE THE LEARNING  
OF WRITING: A CASE STUDY OF SECOND  
YEAR LMD STUDENTS OF ENGLISH AT THE  
UNIVERSITY OF CONSTANTINE.**

*Dissertation Submitted to the Institute of Foreign Languages in Partial  
Fulfillment of the Requirement for the Degree of MASTER in Language Sciences*

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*"Curiosity is the wick in the candle of learning"*

*William A. Ward*

*Professor and Egyptologist*

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## *DEDICATION*

*To my parents, the most precious persons to my heart.*

*To my second mother and sister, Sara.*

*To the twins of my soul, Ismahen and Nassima.*

*To Nassim, my friend of childhood.*

*To my lovely small brother, Mohamed Naïm.*

*To my precious aunt, Fatima, and all my relatives.*

*To the group of 7wings fly and all the dear friends.*

*To all those who know me, I dedicate this work..*

*IMENE*

## **ABSTRACT**

*Our dissertation reports a study about the extent to which students employ their thinking abilities of deducing (inferring) in their writing products, and it illustrates the positive role of this mode of reasoning in providing a generation of creative writers of EFL. To give consistency to the study, two questionnaires plus a test have been submitted to a sample composed of a group of second year LMD students of English, and a group of teachers from the teachers of the department. The study aimed at realizing the hypothesis that the students will develop their writing if they put into practice their mental capacities of deduction. The results obtained reveal that despite the fact that students use their deductive cognitive abilities while writing, such use is not really effective; this is mainly due to - as the teachers assert – the fact that educational programs do not take into consideration sustaining and improving the students' mental capacities. Thus, we reached the conclusion that teaching deducing, and thinking in general, through the program is crucial to enhance the students' level in writing as a basic skill in language learning.*

## ملخص

إن هذه المذكرة تقدم دراسة حول مدى استخدام الطلبة الجامعيين لقدراتهم التفكيرية الإستنتاجية في إنتاجهم الفكري و تبين الدور الإيجابي لهذا الشكل من أشكال التفكير في تكوين جيل مبدع من كتاب اللغة الإنجليزية. لتدعيم هذه الدراسة إتمدنا على استمارتي استبيان و قسيمة إختبار وزعت على عينة مكونة من مجموعة من طلبة السنة الثانية بقسم الإنجليزية و مجموعة من الأساتذة بنقس القسم. كانت الدراسة تهدف إلى التحقق من فرضية أنه بإمكان الطلبة تطوير قدراتهم في الكتابة إذا استفادوا من تطبيق قدراتهم في الإستنتاج. أظهرت النتائج المحصل عليها أنه رغم أن الطلبة يستخدمون هذه القدرات في كتاباتهم إلا أن هذا الإستخدام قليل الفعالية و ذلك راجع بنسبة كبيرة - كما أكده الأساتذة- إلى أن البرامج الدراسية لا تأخذ بعين الإعتبار تدعيم قدرات الطالب الفكرية و تطويرها. لذا فقد خلصنا إلى أن تدريس الإستنتاج، و التفكير بصفة عامة، أساسي لتطوير قدرات الطالب في الكتابة كمهارة أساسية في تعلم اللغة.

## **RESUMÉ**

*Ce mémoire a pour but d'étudier la possibilité chez les étudiants universitaires d'utiliser leurs capacités de raisonnement déductif (inférence), et nous montre aussi le rôle positif de ce genre de réflexion dans la formation d'une génération d'étudiants qui maîtrisent l'Anglais écrit. Pour ce faire, nous nous sommes basés sur deux questionnaires et un test distribués aux échantillons d'étudiants d'Anglais en deuxième année, system L.M.D.; et d'enseignants du département. L'hypothèse de travail suggère que les étudiants développeront leurs capacités dans l'Anglais écrit s'ils/ elles appliquent leurs compétences de raisonnement déductif. Les résultats obtenus nous ont montré que, bien que les étudiants utilisent ces capacités, chose qui est dû en grande partie - comme l'ont confirmé les enseignants - au programme éducatif qui ni ne soutient, ni ne développe les capacités de réflexion chez l'étudiant. La conclusion est que l'éducation de la réflexion déductive, et la réflexion en général, est fondamentale pour accroître les capacités de l'étudiant en Anglais écrit comme compétence essentiel pour l'apprentissage de la langue.*

## ***LIST OF ABBREVIATIONS***

- ***A.L.:*** *Applied Linguistics*
- ***B.L.:*** *British Literature*
- ***EFL:*** *English as a Foreign Language*
- ***E.S.P:*** *English for Specific Purposes*
- ***FLT:*** *Foreign Language Teachers*
- ***LMD:*** *License Master Doctorate*
- ***MCQ:*** *Multiple Choice Question*
- ***N:*** *Number of Wrong Answers*
- ***PACQ:*** *Process of Acquisition*
- ***PET:*** *Professional Editing Table*
- ***TEFL:*** *Teaching English as a Foreign Language*
- ***W.E.:*** *Written Expression*



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## ***GENERAL CONCLUSION***

- This dissertation is an attempt to assess the students' mental capacities of deductive reasoning, and the usefulness of this skill in improving the students' writing performance.

On the basis of the data collected and the analysis throughout this research, we conclude that:

1. Deductive reasoning as a process of thinking, important in reading comprehension, is useful in providing meaningful writing.
2. Despite the fact that students possess deductive thinking abilities of reasoning, it is not completely satisfactory (there exists a lack of this skill of thinking).
3. Conclusively, teaching such skill (deductive reasoning) through the program is required to develop students' writing.



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## ***APPENDIXES***

*-Teachers' Questionnaire*

*-Students' Questionnaire and Test*

**Teachers'**  
**Questionnaire**

***Using Deduction as a Mode of  
Reasoning to Enhance the Learning  
of Writing***

*A Case Study of Second Year LMD Students of English  
at the University of CONSTANTINE*

*Dear teachers,*

*This questionnaire serves as a data collection tool for a research project. We would be very grateful if you could answer to the questions below. Your input will be of much help and importance for reaching the aim behind the study.*

*Thank you, in advance, for your time and collaboration.*

*Miss. **LAMRI Imane**  
Department of Languages  
English Section  
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University of CONSTANTINE*

**Section One**

1. Your graduation: Graduated  Post-graduated  Doctor  Professor

2. How long have you been teaching?.....years .

3. The modules taught:.....

**Section Two**

4. How do you estimate the students' level in writing?

good  average  weak

5. Do you think of the program of Written Expression as sufficient to enhance the learners' writing competency?

YES  NO

6. Why?

.....  
.....  
.....  
.....

7. How does reading contribute to the enhancement of the learning of writing?

.....  
.....  
.....  
.....

8. Generally, during the course or in the exams, do students get out of the question?

usually  frequently  rarely



**Section Three**

9. Do you think that deduction, as a form of reasoning, is useful in learning?

YES  NO

10. Do you think that students put into practice their deduction abilities (inference) in writing?

YES  NO

11. If yes, is the extent of such application:

effective  less effective  not at all

12. Does this, in your opinion, contribute in developing the students' writing abilities?

YES  NO

13. If yes, how?

.....  
.....  
.....  
.....

**Section Four**

14. Do you think that teaching reasoning (deduction) through the curriculum is a good idea?

YES  NO

15. What, in your opinion, are the techniques that can be used to teach deduction through the Curriculum?

.....  
.....  
.....  
.....

*Thank you.*

**Students'**  
**Questionnaire and Test**

***Using Deduction as a Mode of  
Reasoning to Enhance the Learning  
of Writing***

*A Case Study of Second Year LMD Students of English  
at the University of CONSTANTINE*

*Dear students,*

*This questionnaire and test serve as data collection tools for a research project. You are kindly requested to answer honestly to the questions to help reaching the aim behind the study.*

*Thank you, in advance, for your collaboration.*

*Miss. LAMRI Imane  
Department of Languages  
English Section  
Faculty of Letters and Languages  
University of CONSTANTINE*

**Section One: "The Questionnaire"**

**-TICK (×) THE APPROPRIATE BOX OR GIVE FULL ANSWERS.**

1. **SEX:** F  M

2. **AGE:** .....years old.

3. **DO YOU READ?**

always  sometimes  never

4. **DOES WRITING INTEREST YOU/ DO YOU WRITE?**

YES  NO

5. **YOUR LEVEL IN WRITING (ACCORDING TO YOUR MARKS) IS:**

good  moderate  weak

6. **DECODING (INTERPRETING) THE EXAMS' QUESTIONS IS GENERALLY:**

difficult  not difficult  very easy

7. **WHAT DO YOU GENERALLY DO AFTER READING THE TOPIC (OF WRITTEN EXPRESSION)?**

highlight the key words  plan  start directly

8. **DO YOU FIND CLOZE PROCEDURE (FILL IN BLANKS) EXERCISES?**

difficult  not difficult  very easy

**Section Two: "The Test"**

**DIRECTIONS: IN THE FOLLOWING PASSAGE, SOME WORDS HAVE BEEN  
CROSSED OUT. FIRST, READ THE PASSAGE, THEN FILL IN THE BLANKS WITH  
THE WORDS YOU FIND MOSTLY APPROPRIATE.**

*Before I came to the United States to study, I was afraid. I heard from friends about*

(1).....

*widespread crime in the United States and about the unfriendliness of Americans. Since my*

*arrival here six months ago, I can say I have been pleasantly surprised. I have not found*

(2) .....

*crime everywhere, and, while not all Americans have been friendly, many of them have.*

(3).....

*In fact, I have found this country to be as safe and almost as friendly as the one I left.*

*Let me give you an example. One night two weeks ago, I had to walk back to the dorm from*

(4) .....

(5) .....

*a friend's house. It was quite late and the streets were lonely and deserted. As I was walking*

*along, I saw a man walking toward me. I said to myself "Oh no, this is it." But when the*

(6) .....

(7) .....

*stranger finally got close to me, he just said "hey man" and kept walking. I realized then that*

(8) .....

*America is not as dangerous as I expected (L Smally, k. Ruetten, & rishel kozyrev, 2000:367).*

(9) ..... ☺

## ***INTRODUCTION***

- 1. General Overview*
- 2. Aims of the Study*
- 2. Statement of the Problem*
- 3. Hypothesis*
- 4. Tools of Research*
- 5. Structure of the Dissertation*

## *I. General Overview*

The brain is thought over as the most complicated device ever seen. Researchers assume that the mechanisms (acquiring, storing, and retrieving) that rule thinking are far more intricate than what we, as human beings, can ever imagine. Consequently, interest in thinking is gaining more weight and increasingly draws the attention of many researchers in the field.

And because learning and thinking are tightly connected, students have to learn to activate their thinking, develop their thinking skills, and employ the maximum of such skills in order to be academically successful and professionally productive.

As for learners of English as a foreign language, the exposure to the four skills: listening, speaking, reading, and writing play a vital role in learning and mastering this language. Among those skills, writing is considered as the last and most complicated skill students may learn. This communicative skill and reading, as a receptive skill, are strongly related as reading provides with knowledge and ideas, develops grammar, enrich vocabulary, etc. However, in order for reading to be highly beneficial, students should learn to comprehend the writing material. This thinking process, comprehension, is a challenging task that requires developing sufficient skills; as the meaning of individual items might not be enough to understand the intended meaning.

One of the thinking skills and reasoning modes that help reaching appropriate comprehension that leads to good and/ or creative writing is deductive reasoning or inferential thinking. This research investigates the contribution of deductive thinking in writing, and the extent to which learners use such form of thinking to develop their writing products.

### ***I. Aims of the Study***

The main objectives in the study are:

- To evaluate the ability of second year LMD students of English at Mentouri University of Constantine to use deduction (inference), as a mode of reasoning, for producing meaningful writing.
- To raise the FLT consciousness about the importance of teaching deduction (and thinking in general) through the curriculum to improve the learners' level in writing.

### ***II. Statement of the Problem***

The problem we are confronted with in this research turns around establishing a possible relationship between thinking (deducing) and the enhancement of writing ability in English. The precise question we would ask is:

- To what extent do students of English employ their deducing abilities to develop their writing skill and ultimately become competent writers?

### ***III. Hypothesis***

We start from the hypothesis that second year LMD students of English would develop their writing if they put into practice their mental capacities of deducing.

### ***IV. Tools of Research***

Data collection would be carried out through two questionnaires and a test. It includes a questionnaire designed to teachers who have been teaching for a considerable time. This will guarantee that the responses they will provide us with are due to long time of (critical) observation of the students' ability to write. The teachers involved are mainly those whose



the answers to their exams' questions require deducing and writing, like teachers of W.E., Grammar (as they regularly provide the students with fill in blanks activities), Linguistics, Psycho pedagogy, and TEFL teachers.

The second questionnaire besides the test is targeted to undergraduate students of English at the University of Constantine. Students will be tested through cloze procedure format; they will be given a text with gaps where they have to use their deducing capacities in order to fill them in with the appropriate items. We would have, also, liked to administer them MCQ format and a set of questions (yes/ no, true / false, how / why / when / where / who / what), but because of the constraints of time that seems to be impossible.

Guided by their answers, we would find out whether the students apply, in an effective way, their thinking abilities of deducing while writing. We have chosen second year LMD students of English because we think that, after they experienced writing small paragraphs (as first year students), they would not accept to continue in English (they would change the stream) if they did not feel predisposed to develop their writing skill (and to learn English in general). In addition, at this stage of learning English, students would develop to a certain extent a capacity to comprehend the language.

#### ***V. Structure of the Dissertation***

Our research is divided into three main chapters. The two first chapters are concerned with the review of the related literature. Chapter three covers the analysis of the results obtained from both questionnaires and the test. The first chapter, which entails two sections, comes under the title: "Learning the writing Skill". The first section deals with learning; it provides a description of learning, sets up a connection between learning and thinking, and asserts the importance of knowledge in learning. The second section traced writing as an output skill including writing defined and the process stages of development: planning,

drafting, revising and editing. The section ends up by investigating the need of reading to reinforce the learning of writing.

The second chapter comes under the title: "Deductive Reasoning as a Process to Enhance Good Writing". We will shed some light on thinking in general, including: thinking defined, reasoning defined, and induction and deduction as modes of reasoning. And as prior knowledge is basic for an appropriate use of this form of reasoning, schema theory and the role it plays as an aid for deduction (inference) takes part of this chapter in addition to reading comprehension, as using deductive reasoning is fundamental in the process of understanding the reading materials. Besides that, a room in this chapter is devoted to tackle the most important factors involved in developing thinking skills (as Piaget put them).

Finally, Chapter three provides the research with a description of the means of research and the aim behind its use (in the introduction). This was followed by a description of the sample as well as the analysis of the results obtained. The chapter then joins those latter with both the hypothesis that instructed our research and the theoretical part (conclusion).

## **CHAPTER ONE**

### ***Learning the Writing Skill***

*Introduction*

***Section One***

*1.1 Learning Defined*

*1.2 Learning and Thinking*

*1.3 The Importance of Knowledge in Learning*

## ***Introduction:***

It is generally agreed that writing is among the most valued abilities and crucial foundations that ease other learning forms and guarantee productive and successful adults. One may write to remember, to save time, to get a job, as well as to transfer knowledge or express bright ideas (for solving problems or shaping good citizens). This skill is thought over as the most challenging in language learning; where large amount of time and effort is basic.

And because, all over the world, academic studies require writing essays and assignments to assess the students abilities in thinking, learning this language skill is an international academic necessity; indispensable especially for post-graduated university students to reach the position they set themselves as a goal to attain. Laccocca wrote: *"You can have brilliant ideas, but if you can't get them across, your ideas won't get you anywhere."* (Quoted in Kranz, 2007: 01).

In this second section of chapter one; the first part provides a definition of learning, investigates the relationship between learning and thinking, and tackles the importance of prior knowledge in the process of learning. The second part traces writing as an output skill, including: writing defined, the process stages of development (planning, drafting, revising and editing), and it ends up by stressing the need of reading to reinforce writing.

### ***1.1 Learning Defined***

From a behavioral learning theory, learning is an adaptation of the individual's conduct through experience. For Hill (2002):

*"...learning occurs when experience causes a relatively permanent change in an individual's knowledge or behavior. The change may be deliberate or unintentional, for better or for worse, correct or incorrect and conscious or unconscious."* (Quoted in Woolfolk, 2004: 198)

Similarly, Hewstone, Fricharm, & Foster define learning as: "...the process whereby an organism interacts with its environment and becomes changed by the experience so that its subsequent behavior is modified." (2005: 73). Accordingly, the outside world plays a vital role in changing the individual's behavior. In this sense, Greene wrote: "Learning consists of direct links between stimulus and inputs and behavioral responses..." (1987: 128). That Change, as Sternberg (1995) pointed out, occurs also at the level of the individual's thoughts and feelings. For him, learning is a: "permanent change in the behavior, thoughts, or feelings of an organism (...) that results from experience." (Quoted in Labeled, 2007: 18).

After the cognitive revolution (late 1960s and early 1970s), behavioral explanations have been retreated and attention shifted to mental operations (storing, retrieving, and information-processing). Accordingly, Salkind considers learning as: "...a cognitive activity, it can be defined as the acquisition of knowledge and the ability to use knowledge to solve problems." (2008: 574). In other words, and according to a collection of lecturers: " Learning is regarded as the acquisition of information; memory, its recovery [retrieval] "everything we can remember we must have been learned." (1992:38); and thinking, its manipulation." (1992: 12).

In the 1990s, another background about human learning came out. It emphasizes the way people act and learn in social backgrounds. So, learning as Salkind stated becomes "...participation in meaningful social practices (...)" (2008: 574). As people get involved in social functions, they build up new skills that are related to those functions. Hence, people acquire uniqueness as they become authentic doers.

Academically speaking, Hedge (2001) sees that learning is about using policies as definite techniques to potentially understand, acquire, preserve, and put knowledge into practice at requirement (Cited in Labeled, 2007) .

In general, learning is a cognitive process where an interrelation with the external world

is crucial; a feature (besides attention) that allows the information to be taken in, retained, recuperated, manipulated; and transformed into an enduring alteration in the data, conduct, thoughts, or sensations of an individual.

### ***1.2 Learning and Thinking***

Learning and thinking are tightly linked, the former can not take place without the interference of the latter. Making inferences, conclusions, decisions, problem solutions, and learning are undividable. The collection of lecturers pointed out that: "*We do not draw an inference and then learn; we learn as we draw the inference.*" (1992: 42). Therefore, learning to infer happens while inferring.

Those latter (the lecturers) mentioned that learning and thinking are not conducted in sequence or at the same time "*they are not like rubbing our stomach with one hand and patting our head with other*" (1992: 43); "*We learn in the course of thinking*" (1992: 43). As the student listens to the teacher who explains the lesson, s/he thinks; and learning takes place alongside.

Sometimes, the process of thinking happens to be hard; even in such a case, learning takes place. If some conditions are confounding, we learn that such conditions are confounding. Emotional reactions are learned and always remembered too. From discouraging occasions, we learn to be discouraged while confronted with such occasions. In addition, if the loss of a dear person makes us feel sad, we learn to be sad in similar situations (Collection of Lecturers, 1992).

Learning is not a guarantee endorsement that specific thoughts and feelings are engraved, but rather, the feature of thinking that holds us to the future (where a room is devoted to changes that might take place). Considering only the past and the present in the process of thinking is senseless. Thinking is always directed to the future \_ whether to expected circumstances that we desire or undesirable ones. And even if we are exclusively

involved in what is to come in the upcoming instants of our lives, our thoughts are [projected] to the future. Learning is not to make a store of information and skills that might be helpful in the future; it is an insinuation about the future through present thought, i.e. learning plays a crucial role in directing our thoughts about the future (Collection of Lecturers, 1992).

### ***1.3 The Importance of Knowledge in Learning***

Knowledge from a cognitive perception is two types: [domain specific] which encompasses disciplines precise comprehending (math, history, soccer, etc) and [general knowledge] represented in mental capacities like planning, problem-solving, and understanding language (Woolfolk, 2004). However, there is no clear cut between the two. Before learning to read, a one of us learn first the sounds (of letters) which are specific in the field of reading.

Another classification includes declarative, procedural, or conditional knowledge. Declarative knowledge can be declared through graphic forms language or sign systems (Braille, sign language, dance or musical notation, and mathematical symbols). This kind of knowledge is immense (as it includes all the facts and data). Procedural knowledge is about the way to do things. For instance, the students might know the rules of translation (declarative knowledge) but should apply them to convert a passage to English. Conditional knowledge, on the other hand, is about where and why to apply declarative and procedural knowledge. It is used to know when to read the whole passage or skim. The table below joins both classifications of knowledge (Woolfolk, 2004).

<b>Table 01</b>		<b>Kinds of Knowledge</b>	
	<b>General Knowledge</b>	<b>Domain-Specific Knowledge</b>	
<b>Declarative</b>	Hours the library is open Rules of grammar	The definition of [osteoporose] [The defects of thinking]	
<b>Procedural</b>	How to use your word Processor How to drive	How to solve an oxidation reduction equation How to throw a pot on a potter's wheel	
<b>Conditional</b>	When to give up and try another approach When to skim and when To read carefully	When to use the formula for calculating volume When to rush the net in tennis	

(Woolfolk, 2004: 238)

But, whatever the classification is, knowledge is the product of learning. When we learn about cognitive psychology or the regulations of tennis, it is something new that we know. However, knowledge is not the last outcome of preceding learning; it conducts new learning too (Woolfolk, 2004).

As it is suggested by the cognitive approach, one of the crucial features in the learning process is the person's already existing knowledge. Our prior knowledge, as Alexander (1996: 89) suggested, *"is a scaffold [stage] that supports the construction of all future learning"* (Quoted in Woolfolk, 2004: 237) \_ Knowledge exceedingly control our concentration to observe, learn, recall or not recall (Woolfolk, 2004: 237). For example students with considerable amount of knowledge about the psychology of adolescents are the mostly motivated to have a lecture about such a topic.



Recht and Leslie (1988) have carried out a study which reveals the significance of knowledge in comprehending and recalling new information. The psychologists classified minor high school students (very competent and not very competent readers). They examined the students' knowledge on baseball and the results have shown that such knowledge and the reading ability are disconnected. Therefore, they distinguished four categories: good readers / high baseball knowledge, good readers / low baseball knowledge, poor readers / high baseball knowledge, and poor readers / low baseball knowledge. After that, students from the four categories read an extract portraying a baseball game and were tested using various means to check their comprehension and recalling of what was read (Cited in Woolfolk, 2004).

The findings showed the [power of knowledge]. Readers who are not competent but knowledgeable in baseball recalled more than competent readers with few baseball knowledge and approximate competent readers who are knowledgeable in baseball. Readers who are not competent with a few knowledge about baseball recalled the littlest of their reading. Hence, (a good basis of knowledge can be more important than good reading skills in understanding and remembering) \_ However, massive knowledge besides good reading skills is much better (Woolfolk, 2004).

**CHAPTER ONE**  
***Learning the Writing Skill***

***Section Two***

*1.4 Writing Defined*

*1.5 Stages of Development of Writing*

*1.5.1 Planning (Prewriting)*

*1.5.1.1 Understanding the Assignment*

*1.5.1.2 Brainstorming (Gathering Idea)*

*1.5.1.2.1 Free Writing (Flow Writing)*

*1.5.1.2.2 Listing*

*1.5.1.2.3 Webbing*

*1.5.1.3 Choosing a Topic and Developing a Thesis*

*1.5.1.4 Outlining and Organizational Strategies*

*1.5.2 Drafting (Sloppy Copy)*

*1.5.2.1 The Introduction*

*- Thesis Statement*

*1.5.2.2 Paragraphs and Topic Sentences*

*- Providing Support*

*1.5.2.3 Conclusion*

*1.5.3 Revising*

*1.5.4 Editing*

*1.6 The Need of Reading to Reinforce Writing*

*1.7 Conclusion*

## ***1.4 Writing Defined***

In **The Shorter Oxford English Dictionary (on Historical Principles)**, Little, Fowler, & Coulson defines the term to write as: "*...to score, outline, or draw the figure of (something)...*" (1992: 2581). More precisely, Encarta Dictionary defines writing as putting words on papers in graphic forms: "*...words in symbols written down as a means of communication.*" (Quoted in Ouskourt, 2008:13). However, writing is far more complex than transforming words into symbols; it is an activity that requires a mental effort. Moxley, Mitchell, & Lee wrote: "*Writing is a process not a product*" (2007, Home page). Moreover, White and Arnolt (1991) state: "*...it is a thinking process in its own right. It demands conscious intellectual effort which usually has to be sustained over a considerable effort of time.*" (Quoted in Ouskourt, 2008: 14).

From what has been said previously; writing, as a communication skill, is a highly complex operation that requires mental, linguistic, and physical effort, i.e. it is a mental process by means of which the brain powers thoughts into words which are transformed on papers in graphic representations.

## ***1.5 Stages of Development of Writing***

Writing is a whole process that involves paraphrasing and summarizing skills and other stages of development, that differ from one writer to another. In our research, we have chosen among those stages the ones we find most useful in the writing process: planning, drafting, revising, and editing. The application of those principles, in writing, is critical for the brain to produce well organized and useful drafts. As Jim Canterucci says:

*"If we were to ask the brain how it would like to be treated, whether shaken at a random irregular rate, or in a rhythmic, harmonious fashion, we can be sure that the brain, or for that matter the whole body, would prefer the latter." (Quoted in Bentov, 2005: 123)*

And as second year LMD students of English , our case study, are mainly required to acquire the technical skills to write effective essays, and because of the constraints of time; the writing stages of development were restricted to: planning, drafting, revising, and editing.

### ***1.5.1 Planning (Prewriting)***

Planning is of the same importance of the writing process (Johnson, 2008), it aims at generating ideas or elucidating the already existing ones (Starkey, 2004). It includes:

#### ***1.5.1.1 Understanding the Assignment***

To accomplish the assignment, it is essential that the student understand the aim behind that latter. This could be done by making a division through underlying the key words that determine the scope of the assignment, and enclosing those which direct the way of answering (direction words) (Chesla, 2006).

#### ***1.5.1.2 Brainstorming (Gathering Ideas)***

To start writing directly relying on inspiration, or to get involved in the draft thinking ideas will come in the meantime, are time consuming and frustrating techniques. More advantageous means that results in extra ideas and high-quality essays are brainstorming techniques. No matter if the topic is already designed, selected by the student, or writing is timed; having a time to note the existing ideas and generate new ones will have a good impact on the writing process (Chesla, 2006).

Brainstorming is a fast writing of whatever comes up from someone's thinking, even if some terms (words) or clustering (phrases) are later rejected. This step is helpful for promoting thinking to get new ideas and for arranging those latter into a well organized structure (Crème & R.Lea, 2008). Brainstorming is more efficient if done in group as learning about the others' ideas help bringing one's own. In a recent **Dictionary of Psychology**

Coleman defines brainstorming as: "*a method of generating ideas and solving problems through the encouragement of intensive spontaneous group discussion*" (2003: 101).

In brainstorming, it is fundamental to: tolerate every idea (even strange ideas for the sake of extending thinking), tolerate alternative solutions as the aim is the amount of ideas, and accept [hitchhiking]: stretching an existing idea or joining one idea to two or more other ideas (Johnson, 2008).

This activity involves dozens of efficient techniques among which free writing, listing, and webbing are the most used ones (Starkey, 2006).

#### ***1.5.1.2.1 Free Writing "Flow Writing"***

The most common prewriting technique where a part time is devoted to pour thoughts about the topic into phrases and preferably full sentences. In order for that strategy to be profitable, the writer should not limit himself or review his/her writing (Starkey, 2004). He, also, should ignore grammar, spelling, and the appropriateness of ideas (Chesla, 2006). Moreover, free writing helps improving the writer's fluency (as he rapidly notes his/her ideas) (E.Zemach & A. Rumisek, 2003). Here is an example:

Adrienne Rich wrote: "Lying is done with words and also with silence." Do you agree? Use your personal experience and/or your observation to support your answer. Here is the result of a short free writing session:

Do I agree? I think so. Is it a lie if you don't say something when you know something? Not technically, but it has the same effect, doesn't it? I remember when I saw Jay with someone else but I didn't tell Karen. She never came out and asked me if Jay was cheating on her, but I knew. But that's not really a lie is it so what do you call it?

But there are more important cases where not telling the truth can be deadly. Like if you know someone is planning to commit a crime, and you don't tell anyone. Didn't someone

go to jail for not telling the police she knew about the Oklahoma City bombing before it happened? But that's not a lie, it's just not telling, so not telling is not the same as lying. But it can have equally terrible consequences. I guess the point is that you know a truth

But you don't reveal it. So they're not the same but they do the same thing. People can get hurt. Unless you believe what you don't know won't hurt you. But that probably falls into the same category as a white lie. It's the other lies and other silences that are the problem (Chesla, 2006: 32)

While free writing, this student used a pair of examples. She also come out with involving the definition of a lie and whether people morally required to reveal certain sort of knowledge; a crucial part to argument. Notice, also, the degree of informality and that there are repeated sentences. That is a piece of the free writing technique. (Chesla, 2006).

#### ***1.5.1.2 Listing***

As for free writing, the listing technique (mainly effective for timed writing) is about writing freely for a predetermined time. However, it requires making a list of significant ideas in a specific arrangement and relating those which could be related (Chesla, 2006). Here is an example:

In your opinion, what is the greatest challenge your generation will face? What ideas do you have for dealing with this issue?

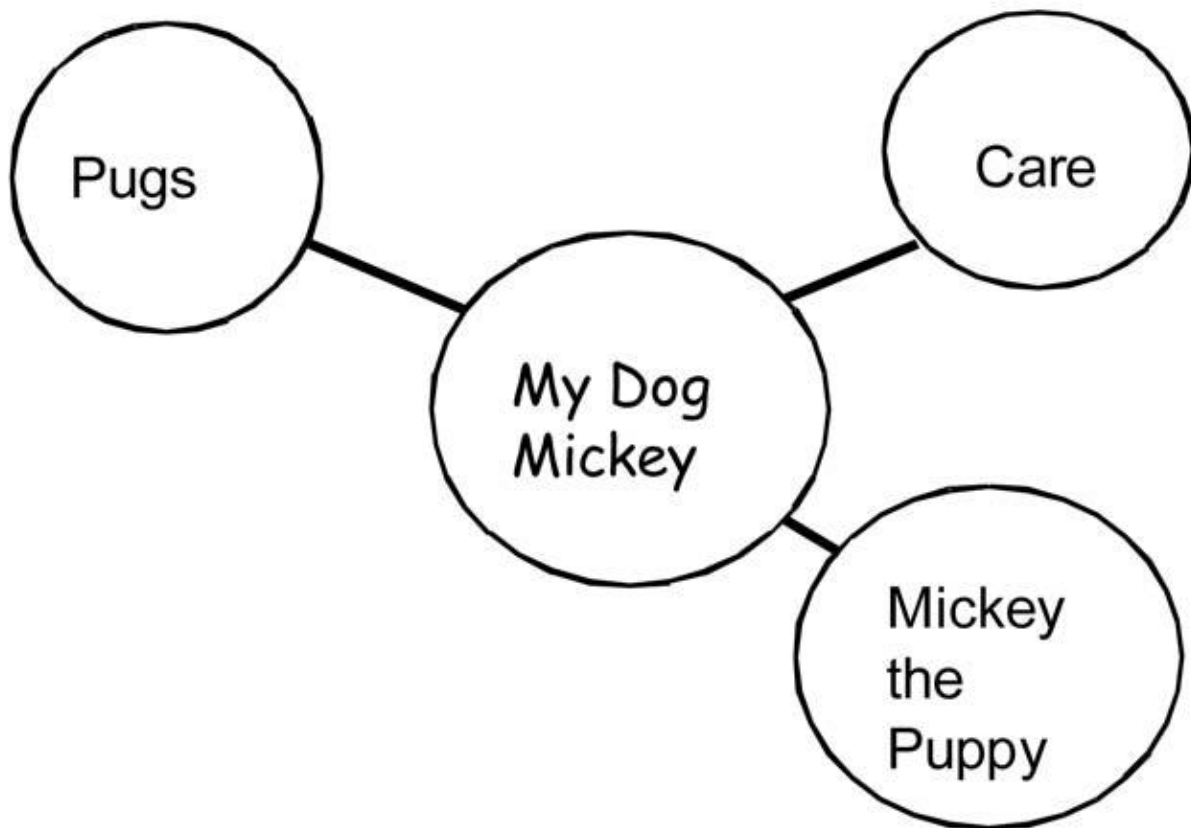
- being overwhelmed by technology
- staying physically in touch when everything becomes virtual
- How will we know what's real?
- If people live longer, what about the generation gap?
- Find better ways to take care of parents, and grandparents
- being overwhelmed by information

- What about the people who don't have access to technology—social inequality
- The environment
- Slow consumption of our resources
- Recycle more
- Come up with alternative fuel sources
- World government?
- Disease—new viruses—bird flu?
- What about our new power for destruction, biowarfare? (Chesla, 2006: 34)

#### *1.5.1.2.3 Webbing*

Webbing involves a writing topic in the middle and related ideas in nodes. Johnson explains better the diagram below:

**Graph 01. My Web and Brainstorm**



(2008: 190)

Making a web requires more time but is more efficient as it facilitates the arrangement of ideas (Starkey, 2004).

In all that, there is no best brainstorming techniques, some writers prefer listing because it does require complete sentences. Some others use free writing because they write rapidly as their thoughts come straightforwardly, etc. So, better for the student to try out all the techniques and choose the one s/he finds most effective for his/her writing (E.Zemach & A. Rumisek,2003).

### ***1.5.1.3 Choosing a Topic and Developing a Thesis***

After generating ideas through brainstorming, the next step is to select, among them, those that best fit for developing a useful essay (Chesla, 2006).



For the topic to be well chosen: Firstly, it should capture the student's interest, as the writing material carries to the reader the student's eagerness to deal with the subject or his/her apathy. In case the ideas that the student come up with in brainstorming are not interesting, or the topic set by the teacher is boring and not interesting ( [Health policy issues] for example), another brainstorming is needed. Here, it would be very helpful to jot down a list of interesting things (even if they are completely disconnected with the topic) like: music, internet, diving...and try to make a connection such as: [music→ Healthcare coverage for music therapy] (Chesla, 2006).

Secondly, a very general topic should be narrowed down so that it will be dealt with within the limits of the essay. See the example below:

---

**Assignment: Write a statement for your generation.**

**Broad topic: My generation**

**Narrowed topic: My generation's beliefs**

**Further narrowed topic: My generation's beliefs about work**

**Sufficiently narrowed topic: My generation's beliefs about the balance between work and play.**

---

(Chesla, 2006: 44-45)

Thirdly, limiting the topic makes it possible to formulate it into a possible question. The answer to this question Provides the major idea of the topic; thesis statement. For example:

---

**Broad topic: An issue in Frankenstein**

**Assignment: Write an essay that explores one of the many issues raised in Frankenstein.**

**Narrowed topic: Responsibility**

**Sufficiently narrowed topic: Responsibility of the creator to his creation**

**Topic turned into a question: What is the responsibility of the creator to his creation?**

**Tentative thesis: If the creation is a living being, then the creator is responsible for nurturing and educating his child**

---

(Chesla, 2006: 45-46)

#### ***1.5.1.4 Outlining and Organizational Strategies***

Making an outline starts with reading the prewriting notes. Then, the student puts related ideas together and classifies them to elementary and secondary ideas, examples, and details. S/he organizes them later on into meaningful coherent sentences, allowing for more details (Starkey, 2004). Moreover, outlining demonstrates where more reinforcement for the thesis is required, and it evaluates the feasibility of the thesis (enough proof) (Chesla, 2006).

Rather than assertion→support, there are different principles of ordering ideas depending on the topic.

- Chronological: the best way to narrate, or to tell an incident or a procedure is to follow a chronological order.

- Cause and effect: could be used together with the previous one. For instance, if the essay dealt with is: the events that lead to the Second World War, chronology are used with cause and effect structure.

- Spatial: Another way useful to describe a thing or a location. Here, for this method to be used effectively, the description should follow a logical order (part by part, from the upper upper to the lower, from the outside to the inside) (Chesla, 2006: 53-54)

### ***1.5.2 Drafting (Sloppy Copy)***

It is the student initial trial to write his/her ideas in the form of paragraphs (Starkey Writing Essentials, 2006). Drafting, as with brainstorming, is mostly efficient when the writing is permitted to be defective (except in timed writing like in exams). Accordingly, the aim behind the draft is to jot down the ideas within the confines of the outline without that the student forces himself/herself to get everything correct (Chesla, 2006). The teacher's reaction to such sloppy copies helps for the stage of revision and strengthens the writing skill (Johnson, 2008). This step includes:

#### ***1.5.2.1 The Introduction***

It is the opening paragraph of the essay and a fundamental component in the writing process as it establishes the first thought of the reader about the product. For that reason, it should grasp the readers' attention and assert the content and the major ideas in an inviting tone. It is five or more sentences about the general idea of the essay and a thesis statement (E. Zemach & A. Rumisek, 2003; Chesla, 2006).

#### ***- Thesis Statement***

The thesis statement is the major idea of the essay. It informs the reader about what the essay is all about and communicates the writer's position from the issue (Chesla, 2006).

Making a clear thesis statement eases comprehending the essay as it carries out, to the reader, the standing point of such material (arguments). In addition, the thesis statement urges

the brain to make use of its private thinking rather than restating that of the others, allowing the essay to be authentic (Crème & R. Lea, 2008).

### ***1.5.2.2 Paragraphs and Topic Sentences***

A paragraph is a set of sentences dealing with the same idea. It allows breaking up the piece of writing into small sections that guide the reader by indicating the opening of new ideas. It consists of the initiation that states the major idea of the paragraph (a topic sentence), the main part that reinforces the major idea, and the end that conveys either the major idea (if not conveyed at the beginning) and/or shows a shift to another paragraph (Chesla, 2006).

#### ***- Providing Support***

An essay does not only tells about the writer's thinking (ideas) but, also, includes the motives that lead to such thinking (support). There are six forms that hold up the essay: examples, facts, reasons, descriptions and anecdotes, expert opinion and analysis, and quotations from the text (Chesla, 2006).

### ***1.5.2.3 Conclusion***

It is the closing paragraph of the essay. It recapitulates the major points and paraphrases the thesis statement. Moreover, it makes the ending comment about the thesis statement and might urge the reader to take an action (s) (Baily, 2003).

### ***1.5.3 Revising***

Revising is the first review of the essay, it is crucial to see if any part requires enhancement. While revising, the writer reread, shift ideas about, checks coherence, diction, clarity, and consider the feedbacks (Fowler, 2006; Johnson, 2008). In order to help the

students receive feedbacks from their classmates (peers) through the revising stage, the [Magic Circle] strategy could be applied. This strategy requires arranging chairs in a circle, gathering papers (unnamed), and delivering them to get the students responses, ideas, and wonderings on them (one paper for each student). Here, each time the student finishes responding to one paper, s/he shifts to the center of the circle and wait for an empty table, until s/he responds to three or more papers. Then, the papers are placed on a chosen place (desk for example) where everyone looks for his/her own (Johnson, 2008).

#### ***1.5.4 Editing***

At this stage, the student checks grammar, spelling, and punctuation. S/he has to consider that those latter permit to communicate thoughts, that useful writing is not error-free, and that even for writers, writing necessitates editing (Johnson, 2008).

An indirect way to learn about spelling, grammar, and punctuation is [peer editing SET (skill expert table)] in which:

- 1- A day is fixed for rewriting papers (students should have something already prepared).
- 2- Three to eight skills related to grammar, spelling, and punctuation is chosen; where a one table is devoted to one skill.
- 3- For each table, a student (as an expert) is selected to employ a skill. For instance, a table is devoted to spelling mistakes, a one seeks well structured sentences (beginning with capital letters and ending with periods), another table may possibly be concerned with a correct use of (there/their , two/to/too). For this latter, every two to five students are designed to one table (an older student, a parent or a paraprofessional might be involved).

When students talk about their ideas, clarify them, and argue about them, they actually learn.

- 4- Every table is devoted to edit one paper.
- 5- Every paper goes from one table to another until it reaches all the tables (Johnson, 2008).

A second way is called [peer editing PET (professional editing table)] in which:

- 1- Only one table is assigned for editing.
- 2- Those that have finished their writing before the time is over may make a first editing by themselves.
- 3- Those students, then, take their editing to the professional table where a parent, a paraprofessional, or an older student (two or three students as editors) are their.
- 4- A checklist about what students (editors) should look for must be available (Johnson, 2008).

### ***1.6 The Need of Reading to Reinforce Writing***

Even with the dissimilarity in their description, writing as a productive skill and reading as a receptive one, writing as Brooker mentions: "... is an offshoot [outcome] of reading" (Quoted in Fowler, 2006:06); proficiency in one skill brings about skillfulness in the other. Eisterhold (1990: 88), also, wrote in this sense: " Good writers are always good readers, and better writers read more than poor writers." (Quoted in Nemouchi, 2008: 44). Another view is that of Krashen (1985: 23) who suggested that writing proficiency is acquired through reading instead of writing. According to him, writing is developed as speaking does, by understanding written materials and retaining the various principles that make those latter. For instance, he noted that:

*" if second language acquisition and the development of writing ability occur in the same way, writing ability is not learned but is acquired via extensive reading in which the focus of the reader is on the message , i.e. reading for genuine interest and for pleasure"*  
(Quoted in Nemouchi,2008:48-49)

Why does writing develop from reading?

1- The material to be read provides a useful model for the students to write similar compositions and produce well structured sentences. Krashen (1984: 67) states that: *"Reading which builds the knowledge base of written texts, helps L2 learners acquire necessary language constructs such as grammatical structures..."* (Quoted in Nemouchi, 2008: 48).

2- The meaning of words could be extracted from contexts, so new vocabulary is Learned (Nemouchi, 2008).

3- Reading is a means to transmit knowledge; rebuilding the ideas using private words is easier than providing authentic writing passage for the students' projection on their speaking, listening and reading familiarity with L2 (Cited in Ouskourt, 2008).

### ***1.7 Conclusion***

Writing is a whole process that initiates in the writer's mind in the form of thoughts and ends up on paper as graphic representations of those latter, taking into consideration the developmental stages necessary for producing coherent and comprehensible ideas.

Reading, as a highly complex mental activity, is strongly required to learn that skill and achieve meaningful writing; as it provides with prior knowledge (besides vocabulary, style, etc) as important aspect in learning (as mentioned in the first section in this chapter).

And since good reading necessitates good understanding abilities which are cognitive processes, the next chapter will investigate the role of one of those thinking abilities involved in comprehending the writing material: Deductive Reasoning.

## ***CHAPTER TWO***

### ***Deductive Reasoning as a Process to Enhance Good Writing***

#### *Introduction*

#### *2.1 Thinking Defined*

*- Language and Thought*

#### *2.3 Reasoning Defined*

##### *2.2.1 Inductive Reasoning*

##### *2.2.2 Deductive Reasoning*

#### *2.3 Reading Comprehension*

#### *2.4 Schema Theory*

#### *2.5 Developing Thinking*

##### *2.5.1 Physical Maturation and Cognitive Development*

##### *2.5.2 Social Interaction and Cognitive Development*

##### *2.5.3 Experience and Cognitive Development*

##### *2.5.4 Equilibration*

#### *2.6 Conclusion*



## ***Introduction***

In order for reading to be more beneficial, students should learn to comprehend the amount of information which is not explicitly stated. For that purpose, Students are required to think inferentially, i.e. use deductive reasoning.

This chapter mainly describes deduction as a process of thinking (mode of reasoning) and illustrates the role it plays in reaching appropriate comprehension and eventually meaningful writing.

### ***2.1 Thinking Defined***

Thinking refers to whatever thing happening in our head, whether day-dreaming, imagination, recalling or comprehending (Bolton, 1972). Robert Solso (1991) considers that there are three crucial ideas about thinking:

1 - Thinking is cognitive, i.e. it happens inside our heads. As Greene mentions: "*...thinking seems to be private and internal to ourselves...*" (1987:07). He said also:

*"...it is this property of being able to run through actions symbolically rather than in actuality that constitutes human thinking, in the same way that a bridge builder will create models...without going to the expense of building a full-scale bridge."* (1987:07)

This process is deduced from behavior. The chess player reveals her thinking in her shifts.

2- Thinking is a process (course of action) that entails information processing in the cognitive system. While examining her shifts, her prior knowledge is associated with the new inputs causing an alteration in her knowledge of the situation.

3- Thinking is oriented and ends up in actions that solve a problem or oriented toward a solution. The following chess shift is, in the player's mind oriented toward winning the

competition. Not all moves are unbeaten, but in the mind of the player, they are oriented toward a solution.

This process, thinking, according to psychologists, involves four dissimilar procedures: problem-solving that includes working out a problematic situation (how can I finish with my thesis in a very limited time? for example). Judgment and decision making that entails selecting among alternatives (choosing among study fields at the university). Reasoning aims at inferring from facts (we deduce the value of peace from war; from failure we deduce that trial is the key to success, and from death that we are mortal). The fourth process is that of creativity that has to do with authenticity (our dissertation is an attempt to make a connection between things that outwardly seem to be disconnected: relating deductive reasoning to the quality of writing). And despite the fact that those procedures happening in our daily life are dissimilar, they overlap to a certain extent; being creative results from reasoning (reading about the issue), for example.

However, psychological theories have narrowed the meaning of the term within the confines of problem-solving. Dewey (1910) has made a distinction between what he named [the uncontrolled coursing of ideas through our heads] which is always directed by intentions, and reflective thinking which comes up when we are faced with certain confusions or problems. As things go easily, there is no need to think, but when certain conditions produce uncertainty in our minds, then we start thinking. Dewey mentions the example of a man walking alongside a road until he reaches separate ways. That man will doubt which road to take but has to select among them. Here, he will start thinking skeptically (reflectively). The first phase refers to the circumstance that precedes thinking (sensation of doubt); in the second phase, the person identifies the problem and starts creating thoughts [schemes] to treat the problem (obtained from previous experiences of comparable situations). In the third phase, that person can infer from the assumptions he made and reaches the final phase where

he confirms his thoughts (because they are probable procedures that can be examined). Similarly, Freud (1915) in his theory compared two types of operations: [primary process] and [secondary process]. In primary process thinking, the associations between thoughts happen only if they are related by some wants (this is mostly obvious in dreams), while in secondary process, thinking is directed to reality (Bolton, 1972). In addition, Sternberg (1995) states that thinking is to deliberately manipulate information in the mind to achieve a reflective solution to a problem. So, while thinking, the person analyses the constituents of a specific situation problem by breaking it down into its constituents in an attempt to comprehend it, than to reconstruct it again into a new ultimate shape in which the constituents have been [synthesized] (Cited in Labeled, 2007). Furthermore, Bolton conceived thinking as "*the process by which an organism adapts to its environment. (1972:07)*". Accordingly, the key notions of [stimulus], [response], and [generalization] are relevant to animals as well as humans' problem-solving (Bolton, 1972).

Within the 1960's, there has been a growing concern in computer models of thinking, on the supposition that if we can program instruments to solve problems, a study of the techniques by means of which information is processed may offer hints that might help us comprehend human reasoning (Bolton, 1972) .

### ***- Language and Thought***

Language and thought are tightly linked and dependent on each other. Without language (written or spoken), we won't be able to transmit our internal thoughts. As Anderson (1992: 104) pointed out: "*Thinking is an activity in which we engage. We need our representational resources to make the activity effective...*" (Quoted in Robson, 2006: 109). Robson also mentions: "*...if thought does proceed without language, rote verbal approaches to teaching and learning will not be sufficient to develop understanding.*" (2006: 109).

On the other hand, Wood (1998: 28) states that, for Piaget, language is a means of symbolizing which " *exerts no formative effects on the structure of thinking* " (quoted in Robson, 2006: 108). Thus, Children's language will always be incapable of expressing what is not yet created as a thought. Hence, for Piaget, thought molds, or directs, children's language (Robson, 2006).

## ***2.2 Reasoning Defined***

Reasoning, as a collection of lecturers (1992) mentioned that is not an exclusive intellectual activity, or an item with definite use. At times, the word is used equally with thinking; actually, reasoning is a usual definition of thinking. Reasoning at times includes arguing about a reached conclusion; at times convincing another person to admit a conclusion. It can be a clarification of the past or a debate about the future. All these features of reasoning are related in the sense that they comprise shifting from one situation to another or explain how or why such a shift occurs. Reasoning tries to link ideas or actions together in a continuous chain of connections. However, everything can be linked to something else in some means, what is significant here is the sort of such links- whether they are feasible, reasonable, or justifiable. There are no general regulations for proper reasoning; this capacity takes place with comprehending what you are attempting to reason about. No regulations make a proficient reasoner in computer sciences but his experience.

In addition, even people reasoning from the same basis may arrive at very different conclusions (like politicians). Reasoning is often utilized to argue about an attitude (any attitude wanted) instead of reaching the right one.

Moreover, the links in a chain of reasoning never end; there are always ideas or arguments that have to be filled in by the listener or the reader. If a child was missing from school because of sickness, I am likely to presume (accurately or inaccurately) that it is the child who is sick not another family member, that he stayed at home or in his bed, etc.

Johnson and Blair (1985) refer to such omitted ideas as charity, they claimed: [charity begins at home] - people are more likely to translate arguments in the way that is mostly reasonable to them. However, reasoning is clear. There is always a reason behind behaving in a way or another even if this is not obvious sometimes.

When we say that the others do not reason, we imply that they reach different conclusions from ours, or they are not able or don't want to give reasons for reaching a specific decision- or reasons that please our reasoning. Our way of reasoning is different from that of the others- not because of the different degrees in skills but different [worldviews]. If we would like- and could perceive things through the others' eyes, then we would be able to learn about the others grounds for their way of thinking.

Reasoning, as a mental activity, has two forms: Inductive and Deductive.

### ***-Inductive Reasoning***

It is the process of reasoning from specific facts or observations to reach a general conclusion that may explain the facts; in inductive reasoning, it is not possible to reach a logically certain conclusion- only a particularly well- formed or probable conclusion.

Consider the following statement mentioned by Solso:

If I work at the library for one week, I will have enough money to go skiing on Saturday (1991: 421).

If we presume that the second statement: I will not work at the library for one week, it follows that: I will not have enough money to go skiing; is right but not automatically real. A moneyed relative could provide you with money. So, assessing the validity of a conclusion using inductive reasoning may stand on assumptions rather than the structural form of an argument. In the state above, the assumption may stand on the probability that the relative will provide money (Solso, 1991).

In a study that aimed at explaining the errors in the assessment of daily knowledge, Slovic, Fischhoff, and Lichtenstein (1977) request people to assess the likelihood of forty one causes of death. Subjects were given two causes of death and were requested to decide which of each was more likely to make death happen. The most wrongly estimated selections were causes of death that were well declared. For instance, accidents, Cancer, Tornadoes, were estimated to be constant causes of death. The authors argument that because of these dangerous incidents that broad media report, they were more accessible than a lesser reported causes of death (L. Solso, 1991).

### ***-Deductive Reasoning***

Deduction is the process of reasoning from one or more general premises (statements on which an argument is based) regarding what is known, to reach a logically certain, specific conclusion.

A one significant example about deductive reasoning is the experiments that have been carried out during (1990-2001) on the influence of fasting on the different physiological parameters (like weight, level of hormones in the organism, glycemy: level of sugar in blood, etc). Those parameters have been measured over about one month in fasting subjects. After comparison with the control group, the conclusion that have been inferred is that the parameters are optimum in fasting conditions, i.e. fasting has a positive impact on our organism ( not any kind of fasting but that of Ramadhan).

Similarly, Syllogism, as a form of deduction, is about drawing conclusions from two premises. The table below illustrates the components of and the relationships within the linear syllogism "You are smarter than your best friend. Your best friend is smarter than your roommate. Which of you is the smartest? ":

	First term (item)	Relationship	Final term (item)
Premise A	You	Are smarter than	Your best friend
Premise B	Your best friend	Is smarter than	Your roommate
Conclusion  (who is smartest ?)	_____	Is / are the smartest of the three	

According to what has been said previously, deduction (mode of reasoning) has to do with logic (and mathematic) that permit to infer a conclusion from a set of premises that logically imply it.

Colman, in the dictionary of Psychology, defines inferring as:

*"Reasoning from premises to conclusion (a conclusion arrived at by this process). When the premises are particular observations and the conclusion a general law or principle, then the mode of inference is called induction. When the premises are..., postulates, or assumptions and the conclusion a logical inference or theory, then the mode of inference is called deduction." (2003, 363)*

Inference is also considered as a thinking skill: any cognitive process broken down into a range of definite stages that are after that utilized to direct thinking (Johnson, 2000 b; Perkins, 1986). According to Johnson and Kendrick (2005), inferring is a cognitive process that aid incorporating perceived hints with prior knowledge to make deductions. In teaching students make inferences, the process is broken into:

- 1) Identify the point of inference (question for example).
- 2) Identify what is perceived.
- 3) Identify associated knowledge that is significant.
- 4) Make a reasoned deduction.

However, psychological studies of deductive reasoning concentrate on inferences drawn from premises communicating [operators] like if, and, or, and [quantifier] terms like, all, and, some (Salkind, 2008). Moreover, reading comprehension strongly requires employing such a skill.

## ***2.3 Reading Comprehension***

### ***2.3.1 Comprehension***

A general constituent in various definitions of comprehension is the interpretation of the information in the text, the use of background knowledge to explain this information and, eventually, the building of a coherent [representation] in the reader's mind of what the text involves (e.g., Applebee, 1978; Gernsbacher, 1990; Grasser and Clark, 1985; Kintsch and Van Dijk, 1978; Mandler and Johnson, 1977; Stein and Glenn, 1979; Trabasso, Secco, and Van Den Broek, 1984). This representations is the basis from which the reader can restate the story, put the knowledge acquired into practice, identify what the topic is about, etc (Mcmanar, 2007).

### ***2.3.2 Levels of comprehension***

There are different levels of comprehension: literal and inferential (shallow and deep). The shallow level provides schemes that only catch the explicit meaning of the text. However,



deep meaning can be attained when the reader goes further using the surface meaning and his background knowledge to find the reasons why the incidents described in the text happened, the possible impact of actions, the drives of particular behavior, and the point drawn from the text. This deeper level ends in a richer and larger reproduction (Kintsch, 1974; 1998) of what the text conveys (Mcmanar, 2007).

Unluckily, students seldom acquire a deep comprehension of the reading materials they read in their educational courses; rather, they concentrate on shallow knowledge like facts, definitions, and knowledge that commit to memory without difficulty (Davoudi, 2005, Mcmanar, 2007).

To really comprehend what is read, readers need to arrange this shallow knowledge and go further away from it (read between the lines). However, in restricting their comprehending to the literal level, readers don't succeed to reach the deep clarifications, reasons, and inferences that underlie the information offered; which permit them to arrange such knowledge and to perceive the deeper meanings and the point it conveys (Davoudi, 2005, cited in Mcmanar, 2007).

A foremost difference between literal and deep levels of understanding has to do with the inferences and other associations generated by the reader (Cain, Oakhill, Barnes, And Bryant, 2001, cited in Mcmanar, 2007).

### ***2.3.3 Inference as a Component Skill of Comprehension***

Many skills contribute to the reading comprehension. Palincsar and Brown (1984) identified six different skills that frame reading comprehension capacity, among which three are higher level skills, including: the activation of relevant background knowledge, generation of inferences, and monitoring of comprehension and the internal consistency of the text. Our main concern in this chapter is generation of inferences (Mcmanar, 2007).

Inference making is crucial to reach good understanding of a text. Writing every single detail would make the text tedious; the reader has to fill in the implicit details in texts (Mcmanar, 2007).

And because understanding what is meant through the reading material involves the building of cognitive schemes of the information in the text that the reader can retrieve when needed (representations of information in memory), (Mcmanar, 2007), schemes play a vital role as an aid for inferring. So what is schema theory?

### ***2.4 Schema Theory***

Bartlett (1932) suggested that human memory involves high level cognitive symbols known as schemas, where each schema includes knowledge about everything related with a category of objects or incidents (like schemas for riding bicycles, going to restaurants, for birds, etc). According to Bartlett, schemas have two functions, symbolizing knowledge and directing the explanation of those new experiences which are ultimately stored into general knowledge schemas (Greene, 1987). In this sense, schema theory states that individuals will rely on their knowledge of the world in order to help them understand what they read (Anderson, 2004). How well people can understand what they read is related to the topic being presented and the amount of knowledge they hold about it. Different explanations can result from different amounts and types of background knowledge on a given topic (Anderman and anderman, 2009). For Piaget and his school of thought, the best way to understand thinking processes is to go to the sources of thinking processes in children, and the way they develop.

### ***2.5 Developing Thinking***

Psychologists agree that development is a gradual and complicated process where new capacities build up progressively to substitute the existing ones. Such quantitative and

qualitative transformations in many capacities require, to be developed, exhaustive knowledge of sub- skills and consideration of age changes in the main areas of cognitive roles (language, problem-solving, concept-formation, remembering, etc). There is, also, a general alteration in the course of infancy and childhood from [concrete] to abstract and from [egocentricity] to [other- centeredness]. According to Piaget, as children grow older, they exhibit growing comprehending capacities and an ability to use abstract symbols and categorizational schemata (representations of knowledge).

During his career, Piaget was more concerned with, and overt about, his suppositions that relate the [nature] of knowledge and the [knower] with biological matters for instance. The suppositions he stated is that both child and adult (knower) are effective builders of their knowledge [active constructors of knowledge], neither the passive information or experiences, nor the passive congenital ideas. This, despite the fact that an amount of knowledge may be innate.

That attitude, as Piaget mentioned, results in four factors involved in cognitive development. The first is related to physical maturation (mainly nervous system). The second is the position and impact of training and acquired experience on our reactions and conduct. The third factor entails social interaction and cultural transmission which is, as for organic growth, crucial. And the fourth and last factor is equilibration.

Meadows (1983) discussed those factors that Piaget considers the most important in cognitive development:

### ***2.5.1 Physical Maturation and Cognitive Development***

Research reveals that there are maturational boundaries of what can be taught to children of a given age like, for example, bladder control in children which can not be trained until some region in the brain [motor cortex] develops (Mc Graw 1940). However, this factor

is potential as we are in short of knowledge about the relationship between the cognitive system and the brain.

### ***2.5.2 Social Interaction and Cognitive Development***

Recent research is concerned with the cognitive explanation of social behavior. However, some of the research is directed towards studying the point at which cognitive development is identical to social conduct.

One zone of cognitive development that Piaget focused on earlier (1932) is that of peer (child-child) communication. Social communication was considered as a source of cognitive conflict and a way that permit the child to get the correct answer or to approach it. Piaget argued that communication exposes the child to contrasting opinions and promote him to solve paradoxes.

In the 1970s, Doise and his colleagues (in Meadows, 1983) made a sequence of experiments on the influence of peer communication. The experiments include personal pre-testing of children on a specific activity, then two or three children perform the same activity together, and this was followed by personal post-test. The studies found that the performance of children throughout the communication session was typically at a higher spot comparing to the one viewed when children were given personal activity to perform. In addition, children who were familiar with peer communication exhibit better performance on personal post-test than control subjects worked individually. So, social communication between peers has been proved to ease personal growth, though it has been to be restrictive upon some factors (like the relationship between the task complexity and the age).

Thus, as Piaget pointed out, the notion of cognitive conflict is the key to evolution. That supposition was supported by similar experiments done by Glachan and Light (1982).

Moreover, the different models of parents may have differential consequences on the

child's cognitive development. Bernstein (1965) tried to differentiate the essential variables in terms of distinctive linguistic structures. He compared [positional] and [personal] forms of relationship. In a [position-oriented family], the child acquires a relatively collective role. In a [person-oriented family], however, the family members are open about their objectives in their conversations, and the child acquires a more distinctive identity.

Such distinction was the foundation of a system for coding parental methods of social control and education (Goob-Gumbers, 1973). Many studies offer proof for a relationship between parent-child interaction and the child cognitive development capacities. For example, Bearison and Cassell (1975) showed that children from a prevalently person oriented family reveal proof of properly adjusting their talk with a [blind folded listener] than did children from a prevalently position-oriented families.

Wood and Middleton (1975) have proved a more exclusive examination of the children mother's teaching strategies. In piecing together their playthings, four years old children who were encouraged by their mothers ultimately were capable of doing so by themselves. This reveals that there is a connection between the child's performance and the mother's reactions and accommodation.

### ***2.5.3 Experience and Cognitive Processing***

A great deal of research in the last decade on children's cognition can be summed up in the principle that children make better when the information they are requested to treat is significant to them. Meadows (1983) scrutinized the function of experience as it correlates to children's ability to make inferences and their acquisition of the notions and transformation procedures included in learning to read.

A usual circumstance boost the child's understanding. In this, there is no difference between children and adults. But what has to improve in the child through experience is primarily his comprehending of incidents in the world and secondly his [meta-awareness] for

setting up cognitive strategies, followed by the sort of experience that singles out children from adults and children's from different cultures.

When the child's own experiences are connected to the delighted choice of experimental activities that fit the child's world (Hughs, 1975; Mc Garrigle, 1974; Light, Buckingham and Robbins, 1979) or by the child himself beginning the task and volunteering communication about his experiences ( Slobin and Welsh, 1973; Donaldson, 1978; Cole et al., 1978) then he may well be able of [deductive reasoning].

Very young children can join two pieces of information and deduce a conclusion that is not just reasonable but is the outcome of a legitimate and basic inference (they might not deduce the entire essential conclusions constantly but neither do adults (Wallington, 1974). *"The operation of propositional logic requires the concept of logical necessity"* (Meadows, 1983: 162), i.e. merely some associations between ideas are seen to create automatically valid conclusions.

Young Children are more likely to decode (infer) incidental facts in an argument as being as useful in attaining a correct conclusion as reasonably significant ones, however they are more likely to select the latter in developing their arguments (Bereiter and Hidi, 1977). Moreover, while comprehending the assumptions in an argument and making inferences from them, children reach the implicit and often the practical connotations of statements by utilizing their own real-world knowledge about the content of a specific argument (Omanson, Warren and Trabasso, 1978; Hidi and Hildyard, 1979).

The concern then turns out to be about how children acquire, decipher, and store the usual circumstances and background that result in deductive reasoning. Piaget visualizes children utilize personal schemes of a resemblance or memories of prior reasoning, and then draw conclusions from their interior symbols in treating logical arguments (Piaget, 1928; 1959). Schank and Abelson (1977) have proposed that adults and children decode experience

in [episodic form]. If a series of tasks happen together, how they will be stocked in memory. Memory is categorized relatively and the links that relate objects and events are automatically maintained in a totally stereotyped sense as [scripts]. A possible script for a child might be "a visit to the shops". This example schank has recorded from a spontaneous discussion of a two and a half year-old child with its parent: "Next time when you go to the market I want you to buy straws, pay for them and put it in the package and take home. Okay? ". Scripts become scrutinized by direct experience. They become sophisticated with constant exposure and would fade away without it.

Hence, scripts aid reasoning in an important way because once a script is activated, children realize what to anticipate.

A specific circumstance or a problem the child faces can fit into an already comprehended series of relationships. These aid to make explicit or predict the links between the things the child is experiencing and so help comprehending.

#### ***2.5.4 Equilibration***

Equilibration might be the basic notion in Piaget's work. Equilibrium, according to him *"is the process of adaptive integration which maintains a biological (or intellectual) system through the structural self-development which enables it to cope with new external demands."*(1978, 84). So, the development of knowledge involves a series of enhanced forms of equilibrium (here, [coherent structure] of knowledge). Each form is reached as recent problems made the previous equilibrium unacceptable. There are three levels of equilibration. First between the individual mental schemes and external objects (like mental schemes of grasping and the physical features of the object to be grasped); second, mental schemes matched up into total schemes (matching up, looking, and grasping); and third, to distinguish and combine systems into an overall system of knowledge qualitatively dissimilar with the portions and triggers new possibilities of conduct and comprehension (the building of theories such as gravitation

([equilibration!]). And even in our organisms, there are many physiological processes utilizing [self-regulating mechanisms] to sustain a regular interior atmosphere in equilibrium. In cognition, this is more problematic; Piaget saw the cognitive system as invariable interior construction, kept in equilibrium by an incorporation of [assimilation] (linking new inputs with prior schemes) and [accommodation] (developing previous schemes into new ones at the command of new outside problems).

So, according to Piaget, cognitive conflict results in cognitive development. However, to resolve that conflict (disequilibrium) in the course of cognitive progress; the reasons behind must be identified, besides the will to work it out and the ability to reach a new and better equilibrium. However, such illustration does not easily transform into behavior.

## ***2.6 Conclusion***

Mastering the reading skill requires students to deduce the intended meaning, based on the context and their prior knowledge (schemes). Inference (deduction) is a mental process (mode of reasoning) which encompasses a personal involvement to find out what the writer did not mention through writing. In other words, it provides comprehension which permits the learners to construct their own knowledge (through interaction between new input and prior knowledge), and eventually become competent writers.

Accordingly students should develop sufficient skills (among which deductive reasoning) to comprehend the writing materials.



## ***CHAPTER THREE***

### ***Investigating Deductive Reasoning as a Process to Enhance Good Writing***

*Introduction*

*3.1 The Sample*

*3.2 Description and Analysis of Results*

*3.3 Conclusion*

## ***Introduction***

Our research includes two questionnaires and a test. The questionnaire targeted to teachers aims at investigating their views on the students' abilities of writing and deducing (inferring), their assessment of the program of W.E., and it points toward uncovering the importance of reading in writing as estimated by them. Furthermore, the questionnaire inquires about the teachers' attitude to the importance of deducing, as a mode of reasoning, in learning (writing more precisely) besides their attitude to the idea of teaching that form of thinking, important in improving the writing abilities. The questionnaire was also designed to seek out the techniques the teachers think are the most suitable to teach inferring through the curriculum.

The survey involves one page questionnaire designed to a range of learners (33) of second year LMD students of English. The questions consist of selecting among the choices by ticking boxes. It aims at appraising the learners':

- Personal Information
- Interest and level in writing
- Interest in reading
- Ways of tackling exams' questions
- Ability to infer in cloze procedure format

And for more evidence about the learners' capacities of inferring while writing, another page was devoted to the test (fill in blanks activity). The text chosen was adjusted to the learners' level of comprehension taking into consideration their interests, and requires, from them, to deduce the appropriate items to fill it in.

### ***3.1 The Sample***

The first questionnaire was handed out on May 2010 to twelve teachers (12) who have taught W.E., Grammar, Linguistics, etc. The second questionnaire with a test was given, in the same period, to a group of thirty three students (33) drawn randomly from a population of eleven sixty seven (1167) second year LMD students of English.

We would have involved more teachers, students, and more questions but by fear of not assigning our work in time, the number was restricted.

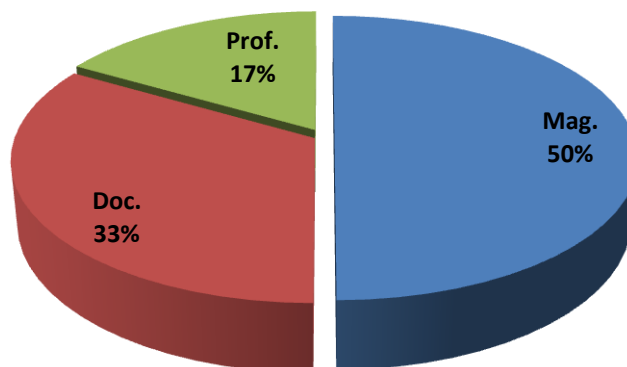
### ***3.2 Analysis of the Teachers' Questionnaire***

#### ***3.2.1 Section One***

<b>Q 01: Your graduation?</b>	<b>N</b>	<b>Percentage (%)</b>
Magister	06	50
Doctorate	04	33.33
Professor	02	16.66
<b>Total</b>	<b>12</b>	<b>99.99</b>

**Table 02: Informants' Graduation**

## Percentage

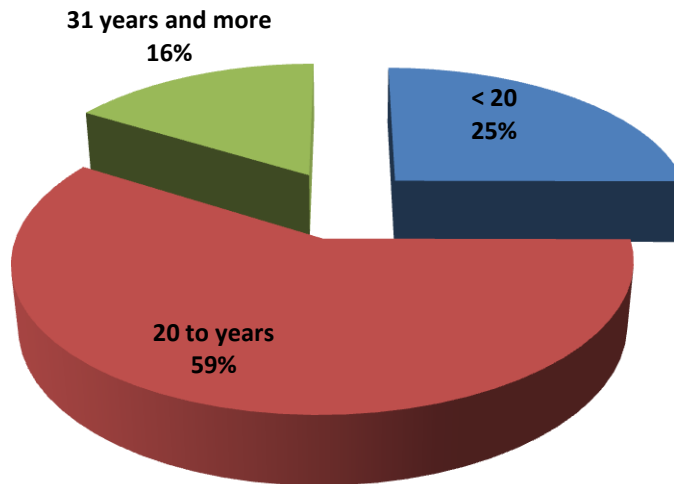


**Graph 02: Informants' Graduation**

Among the teachers who kindly accepted to fill in our questionnaire, 50% of them hold a Magister degree (where most are involved in a Doctoral research), 33.33% hold a Doctorate degree, and 16.66% are professors.

<b>Q 02: How long have you been teaching?</b>	<b>N</b>	<b>%</b>
< 20 years	03	25
20 to 30 years	07	58.33
31 years and more	02	16.66
<b>Total</b>	<b>12</b>	<b>99.99</b>

**Table 03: Informants' Experience in Teaching**



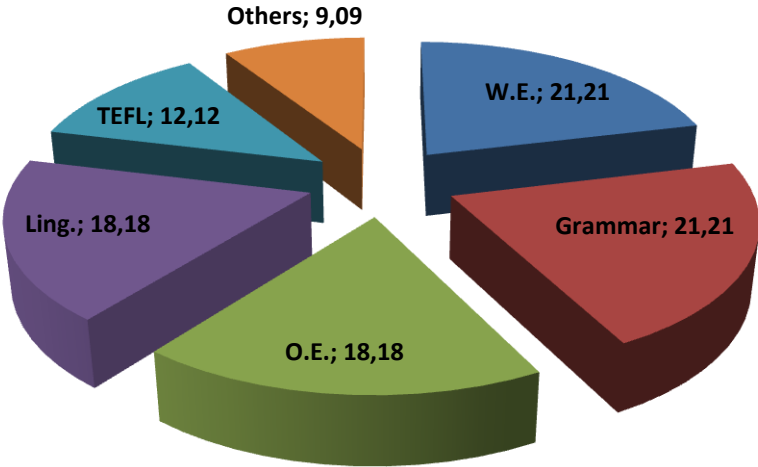
**Graph 0**

Among the twelve teachers questioned, some have been exerting teaching for less than 15 years, some between 15 to 30 years, while others have been teaching for more than 31 years. The information indicates that the majority of teachers (58.33%) have spent 15 to 30 years teaching, followed by 25% who have been teaching for less than 15 years, and the rest are two teachers (16.66%) who have done so for more than 31 years.

Our English Department is relatively old and involves a considerable number of experienced teachers; this will positively contribute to reaching the aim behind our research.

<b>Q 03: The modules taught?</b>	<b>N</b>	<b>%</b>
W.E.	07	21.21
Grammar	07	21.21
O.E.	06	18.18
Linguistic	06	18.18
TEFL	04	12.12
Others	03	9.09
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 04: The Modules Taught by Informants**



**Graph 04: The Modules Taught by Informants**

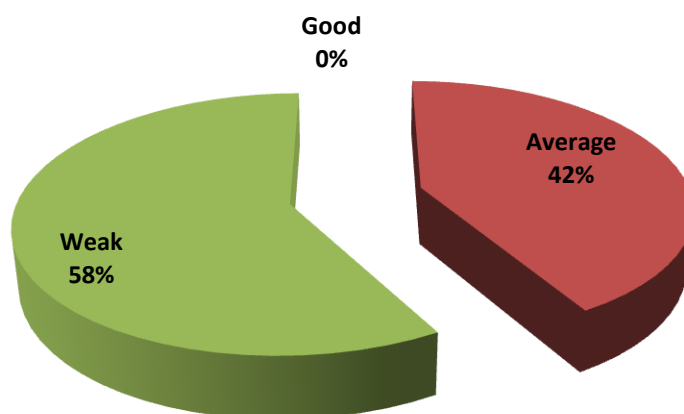
According to the results obtained, the teachers involved in teaching W.E. and Grammar hold the same proportion (more than 20% of the total number of teachers). 18.18% of them are teachers of linguistic (and O.E.). This was followed by 12.12% of those who teach TEFL, and 9.09% involved in teaching other modules such as: Applied linguistics, Methodology, B. L., Psychopedagogy, E.S.P., etc.

The number of teachers whose exams' questions or course activities strongly require employing the inferring skill, like those of W.E., linguistics, and grammar (cloze procedure) hold the highest proportion of the total number of teachers (72.72%). This will help in providing us with meticulous answers and feasible results.

### 3.2.2 Section Two

<b>Q 04: How do you estimate the students level in writing?</b>	<b>N</b>	<b>%</b>
Good	00	00
Average	05	41.66
Weak	07	58.33
<b>Total</b>	<b>12</b>	<b>99.99</b>

**Table 05: Informants' Estimate of the Students' Level in Writing**



**Graph 05: Informants' Estimate of the Students' Level in Writing**

This question seeks to determine whether the writing level of second year LMD students of English is good, average, or weak, as estimated by the teachers. The table indicates that a great number of teachers (58.33%) views that the level is weak , while 41.66%

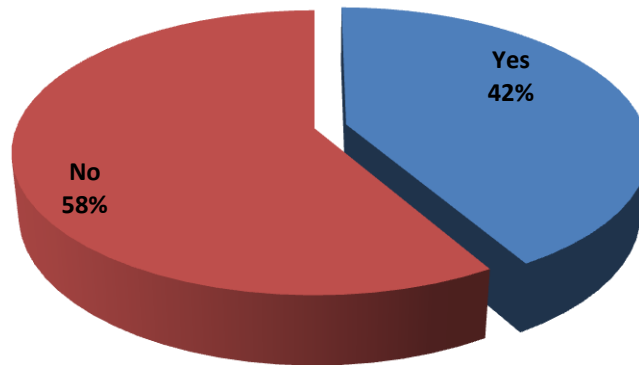
said it was average, and none of them ( 00%) considers that the level of the students in writing is good .

Such evaluation leads us to say that: the fact that students do not have good reading habits (as their answers to one of the students' questionnaire indicate) may result in poor writing. This is what both the theoretical part and teachers' responding to the question about the contribution of reading in writing confirms. Moreover, a large number of students are lacking practice (66.66%, according to the students' responses in the questionnaire, don't write). This is true, despite the fact that practice is an important element to develop this skill in language learning. In addition, the students might not be satisfied with English as a field of study (English was not their first choice or not among their choices), or because the university or the socioeconomic conditions are discouraging. Furthermore, the majority of teachers agreed that the program of W.E. is not sufficient to enhance the learning of writing, as the following question will demonstrate.

<b>Q 05: Do you think of the program of W.E. as sufficient to enhance the learning of writing?</b>	<b>N</b>	<b>%</b>
Yes	05	41.66
No	07	58.33
<b>Total</b>	<b>12</b>	<b>99.99</b>

**Table 06: Informants' Estimate of the Program of Writing**





**Graph 06: Informants' Estimate of the Program of Writing**

Teachers seem to be controversial. Globally, a large number of them answered "no" (58.33%), and 41.66% selected "yes".

**Q 06: Why?**

This question completes the fifth's one, it aims at showing the teachers' reasons for their answers' choices. Teachers who selected "yes" represent 41.66%. Some said that the program is sufficient but needs to be applied well; others said that the program largely covers the expectations, the objectives, and the requirement of effective writing. Among those who answered "no", a number admitted that students are in short of sessions, while others claimed that the overloaded groups made the practice of writing difficult and hardens the teachers' feedback. The remaining teachers (who said "no") argued as follows:

- Training learners to write essays should be introduced right from the beginning of 1<sup>st</sup> year, not delayed up to 2<sup>nd</sup> year.
- Learners need develop linguistic competence.
- There is no coordination between teachers of W.E., grammar, etc, for remedy.

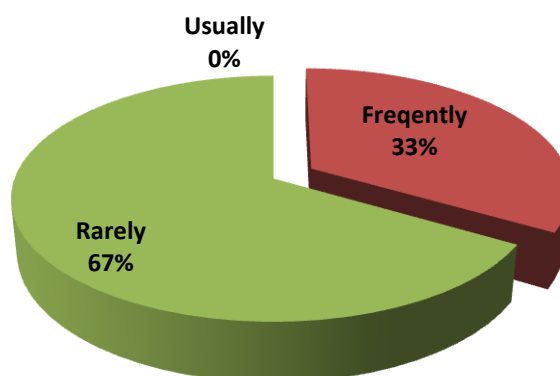
### Q 07: How does reading contribute to the learning of writing?

This question implies highlighting the contribution of inferring in enhancing the learning of writing. Here, the great majority of teachers agreed that reading teaches a lot about grammar and vocabulary, this was followed by a proportion of the teachers who claimed that reading permits to generate new ideas and discover new styles and different models. The same number stated that reading develops knowledge and ideas .The teachers who remain said that reading:

- Provides with idiomatic expressions.
- Improves creative thinking.

<b>Q 08: Generally, during the course or in the exams, do students get out of the question?</b>	<b>N</b>	<b>%</b>
Usually	00	00
Frequently	04	33.33
Rarely	08	66.33
<b>Total</b>	<b>12</b>	<b>99.99</b>

Table 07: Informants' Estimate of the Students' Understanding of the Exams' questions



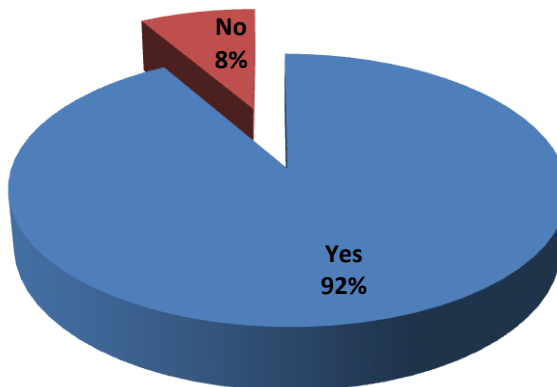
Graph 07: Informants' Estimate of the Students' Understanding of the Exams' questions

Eight teachers among twelve (66.33%) assumed that students rarely get out of the question, while four of them (33.33%) said that this happens frequently. However, none said it was a usual case.

This means that most of the students possess the inferring skill in its lowest level (as the exams' directions are usually made simple and clear to the students).

<b>Q 09: Do you think that deduction as a form of reasoning is useful in learning?</b>	<b>N</b>	<b>%</b>
Yes	11	91.66
No	01	8.33
<b>Total</b>	<b>12</b>	<b>99.99</b>

**Table 08: Estimate of the Usefulness of Deduction in Learning**



**Graph 08: Informants' Estimate of the Usefulness of Deduction in Learning**

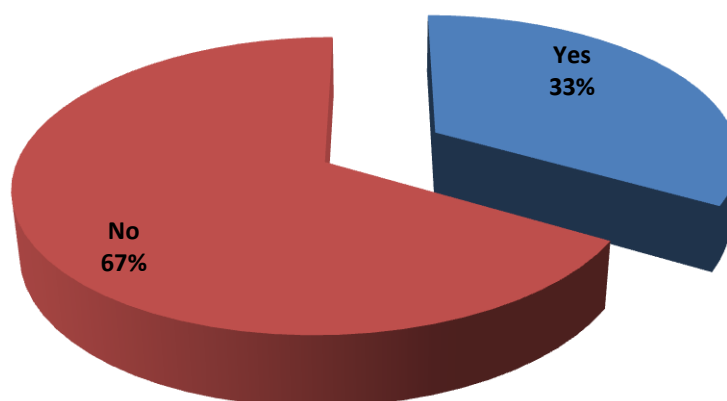
### **3.2.3 Section Three**

The vast majority of teachers in our sample (91.66%) views inferring as a useful thinking skill in learning, and only 8.33% do not think so, a proportion that could be neglected.

This confirms the importance of thinking in learning, generally, and the importance of inferring as a thinking skill more specifically.

<b>Q 10: Do you think that students put into practice their deduction abilities (inference) in writing?</b>	<b>N</b>	<b>%</b>
Yes	04	33.33
No	08	66.66
<b>Total</b>	<b>12</b>	<b>99.99</b>

**Table 09: Informants' Views on the Students' Application of their Inference Abilities**

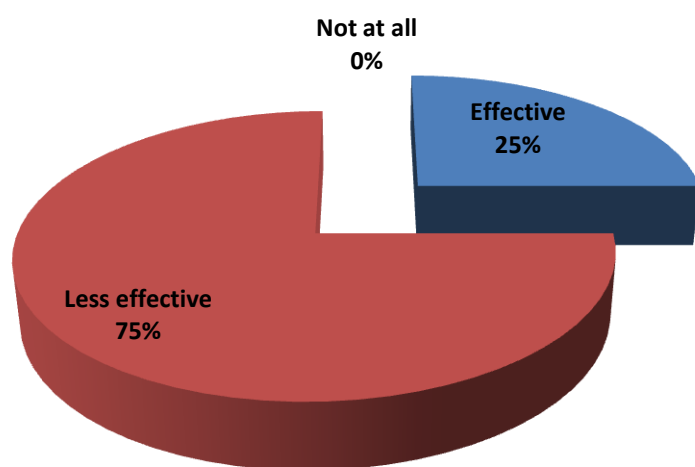


**Graph 09: Informants' Views on the Students' Application of their Inference Abilities**

Eight teachers among twelve (66.66%) answered by "yes" and 33.33% selected "no". This means that the majority of students do not really employ their inferring abilities in writing, i.e. whether this ability is lacking in the students mind, or they don't know how to profit from it and employ it effectively in their writing products. This might results from lack of practice whether in the classroom or at home.

<b>Q 11 : Is the extent of such application :</b>	<b>N</b>	<b>%</b>
Effective	01	25
Less effective	03	75
Not at all	00	00
<b>Total</b>	<b>04</b>	<b>100</b>

**Table 10: Informants' Estimate of the Extent to Which Students Use their Inferring Abilities**



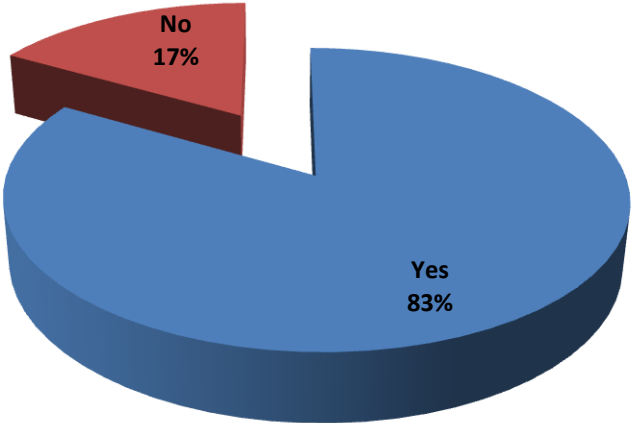
**Graph 10: Informants' Estimate of the Extent to Which Students Use their Inferring Abilities**

This question completes the previous one. It aims at distinguishing, among students, those who use their inferring abilities in writing effectively from those who use it less effectively or don't use it at all.

75% of the respondents asserted that the students' employment of their inferring abilities in writing is less effective, this was followed by a proportion of 25% who asserted that such application is effective, and none said that it is not effective at all.

<b>Q 12: Does this, in your opinion, contribute in developing the students' writing abilities?</b>	<b>N</b>	<b>%</b>
Yes	10	83.33
No	02	16.66
<b>Total</b>	<b>12</b>	<b>99.99</b>

**Table 11: Informants' Views on the contribution of Inferring in Developing Writing**



**Graph 11: Informants' Views on the contribution of Inferring in Developing Writing**

The information indicates that a great majority (83.33%) of the total number of teachers agreed that inferring is useful in enhancing the writing abilities, while only 16.66% of them do not think so.

**Q 13: If yes, how?**

As for this question that is related to the previous one, the teachers provided the following answers:

- Two teachers agreed that students with inferring abilities ( ability to understand the writer's way of arguing, describing, etc, are more likely to transfer this ability through their writing

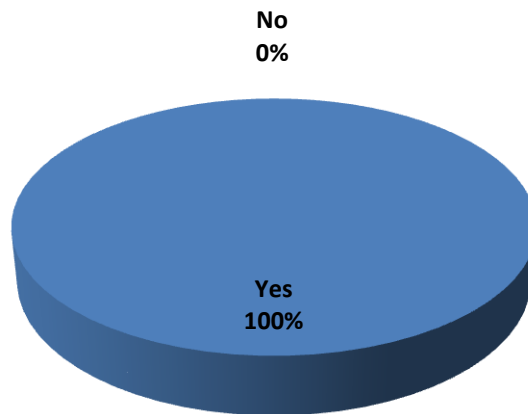
(clear mind, clear product) .

- Three of them said that inferring is not only useful in writing but it triggers other cognitive capacities.
- A teacher claims that inferring does not limit students' imagination.
- Another said that it permits them to go beyond the common view about a given subject.
- And among teachers, two didn't answer to the question.

### 3.2.4 Section Four

<b>Q 13: Do you think that teaching reasoning (deduction) through the curriculum is a good idea?</b>	<b>N</b>	<b>%</b>
Yes	12	100
No	00	00
<b>Total</b>	<b>12</b>	<b>100</b>

**Table 12: Informants' Views about the Usefulness of Teaching Deductive Reasoning**



**Graph 12: Informants' Views about the Usefulness of Teaching Inferring**

Unexpectedly, all the teachers (100%) saw that the idea of teaching inferring through the curriculum is a good one. Some said that it is absolutely important. This confirms the idea that inferring is useful in learning (section 03, question 03).

**Q 14: What are, in your opinion, the techniques that can be used to teach inferring through the curriculum?**

Concerning this question, it was added after the teachers gave back the answers to the questionnaire. Consequently, only two teachers provided us with answers (we could not hand the questionnaire out again because of the constraints of time). The first teacher claims that in order to get students develop this skill, we need to include paraphrasing activities in the curriculum and provide individual feedbacks. In addition, he said, a part time should be devoted to activities where the students have to transform what has been written into idiomatic expressions.

The second teacher perceived the question from another angle. He claimed that teachers should gain access to books on thinking processes containing development on algorithm (math to solution. If followed, they guarantee solution to the problem at hand). And heuristic (informal, intuitive, strategies that sometimes work, sometimes not). Inferring is a thinking process, he said.

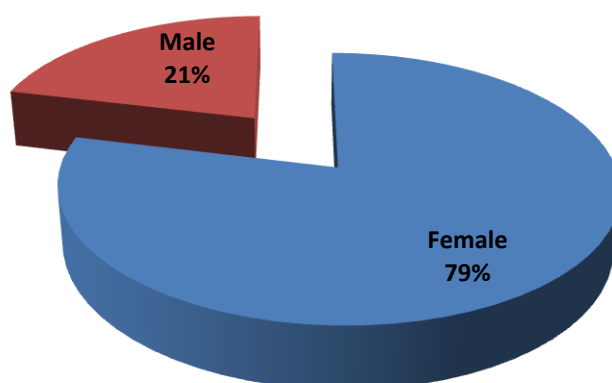


### 3.3 Analysis of the Students' Questionnaire and Test

#### 3.3.1 Section One: The Questionnaire

Q 01: Sex?	N	%
Female	26	78.78
Male	07	21.21
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 13: The Students' Sex**

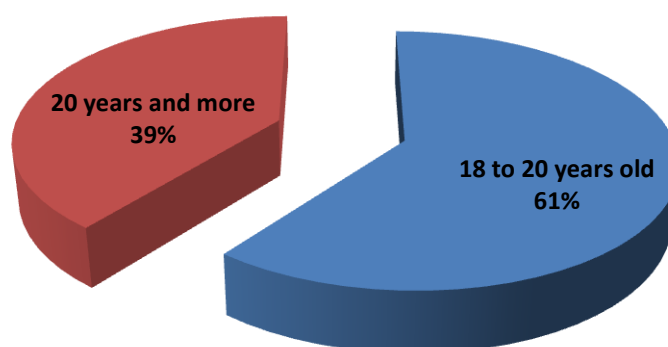


**Graph 13: The Students' Sex**

Among thirty three respondents, seven are males and twenty six are females. This shows that the number of girls studying at the department of English is higher than the number of boys.

Q 02: Age?	N	%
18 to20 years old	20	60.60
20 years and more	13	39.39
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 14: The Students' Ages**

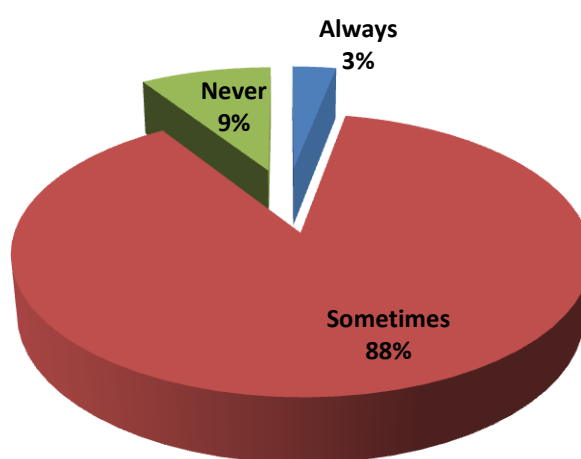


**Graph 14: The Students' Ages**

The answers show that students are globally aged between 18 and 30 years old. The proportion of students between 18 and 20 years old represents 60.60%. This indicates that a considerable number of students took their Baccalaureate exam twice before they passed. The others who are more than 20 years old represent 39.39% of the sample. This reveals that there might be, among the student, those who took more than two years before they passed the Baccalaureate exam, and that some might have been studying in other fields besides English. We may add that a student of 30 years old told us that he decided to return back to studies after several years since he quitted the university.

<b>Q 03: Do you read?</b>	<b>N</b>	<b>%</b>
Always	01	3.03
Sometimes	29	87.87
Never	03	9.09
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 15: Students' Reading Habits**



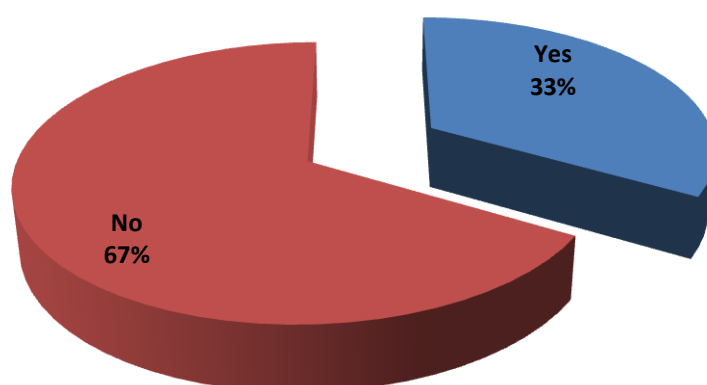
**Graph 15: Students' Reading Habits**

87.87% of the total number of students read at times, among which the majority said that when they do so, it is in the study field (when they are requested to read for the course or to make researches). In addition, a very low proportion (3.03%) read always, and surprisingly, there are university students who never read.

Generally speaking, university students do not have good reading habits. The majority do the tasks recommended by the teachers because they partially determine their success or failure (as they are marked). Moreover, the lack of this habit is part of a whole culture that characterizes our society and that might result from socio-economic conditions, family backgrounds, etc.

<b>Q 04: Does writing interest you / do you write?</b>	<b>N</b>	<b>%</b>
Yes	11	33.33
No	22	66.66
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 16: Students' Interest in Writing**

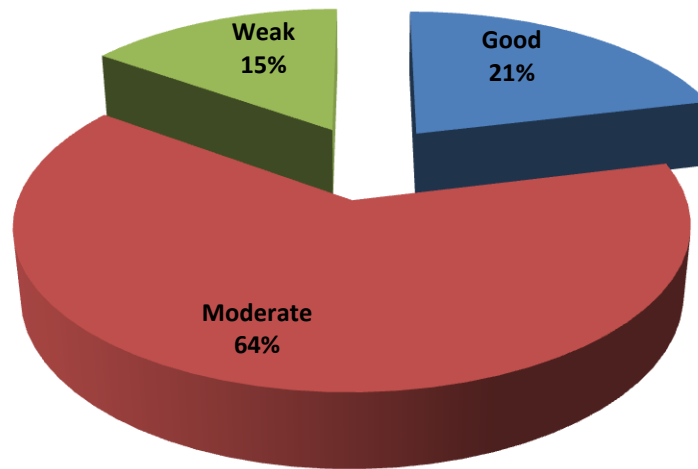


**Graph 16: Students' Interest in Writing**

It seems that a considerable proportion of students are not interested in writing (66.66%), however, 33.33% do write.

<b>Q 05: Your level in writing is?</b>	<b>N</b>	<b>%</b>
Good	07	21.21
Moderate	21	63.63
Weak	05	15.15
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 17: Students' Level in Writing**



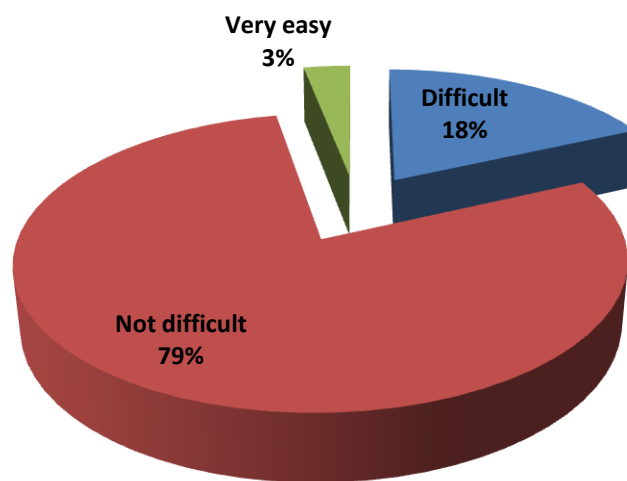
**Graph 17: Students' Level in Writing**

This information indicates that the number of students who consider that their level in writing is weak is not far from those who said it was good. However, the number of good writers (21.21%) outnumbers that of weak ones which equals 15.15%.

This information mentions that there is a paradox between the students' proportions and the ones obtained from the teachers' responses to the same question in the teachers' questionnaire (where 58.33% said the level is weak, and 41.66% said that is was average). This means that the students' answers to that question are not reliable, especially when considering that the majority of teachers who answered to the question are experienced, i.e. their evaluation is critical. So, it seems that students refuse to admit that they are weak in writing; it could be because their ego might not permit them to do so (because, as for us, we told them that the questionnaires are unanimous).

<b>Q 06: Decoding the exam's questions is generally?</b>	<b>N</b>	<b>%</b>
Difficult	06	18.18
Not difficult	26	78.78
Very easy	01	3.03
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 18: The Students' Estimate of the Degree Difficulty of Interpreting the Exams' Questions**



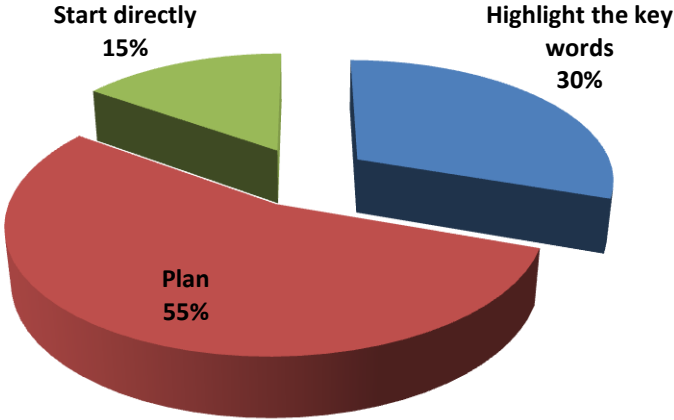
**Graph 18: The Students' Estimate of the Degree Difficulty of Interpreting the Exams' Questions**

Among the students who filled in the questionnaire, 78.78% said it was not difficult for them to decode the exams' questions, 18.18% said it was difficult, and only 3.03% claimed it was very easy.

Once again, it seems that the fact that teachers simplify the questions' directions to make them clearer to the students make the interpretation of questions easy. In other words, the majority of students handle the simplest levels of the skill of inferring. Moreover the proportion 18.18% reveals that many students are lacking this skill or do not effectively put it into practice. Furthermore, very few of them are effective users of that skill (3.03%).

<b>Q 07: What do you generally do after reading the topic of written expression?</b>	<b>N</b>	<b>%</b>
Highlight the Key Words	10	30.30
Plan	18	54.54
Start directly	05	15.15
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 19: the Step Students' Take that follows Reading the Topic of Written Expression**



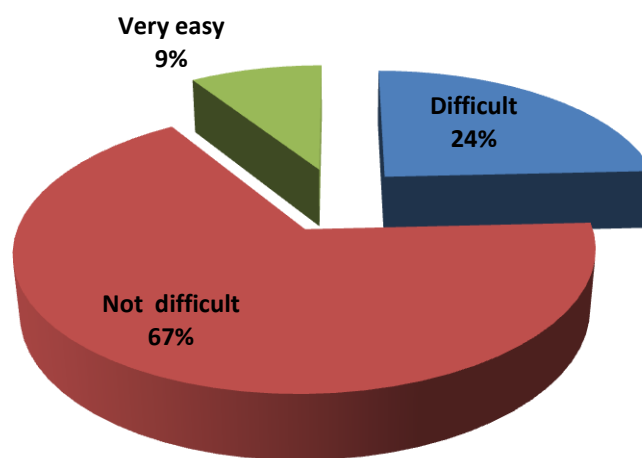
**Graph 19: The Step Students Take that follows Reading the Topic of Written Expression**

This question, as for the previous one, aims at discovering the extent to which students employ their inferring abilities in their writings. Here, the table shows that the proportion of students who highlight the key words of the question approximate that of those who plan for their answers. However, the proportion of the latter (54.54%) is higher than that of the former (30.30%). Moreover, 15.15% represents those who start answering directly.

A large number of students apply what they learned in W.E. (to plan for writing), This means that they use inferring In writing.

<b>Q 08 : Do you find close procedure format :</b>	<b>N</b>	<b>%</b>
Difficult	08	24.24
Not difficult	22	66.66
Very easy	03	9.09
<b>Total</b>	<b>33</b>	<b>99.99</b>

**Table 20: Degree of Difficulty of Cloze Procedure Format to the Students**



**Graph 20: Degree of Difficulty of Cloze Procedure Format to the Students**

Again, the purpose of this question is to determine the degree of difficulty of cloze procedure format to the students. 66.66% of them said that cloze procedure activities are of average difficulty, while 24.24% said they are difficult and only 9.09% said they find them very easy.

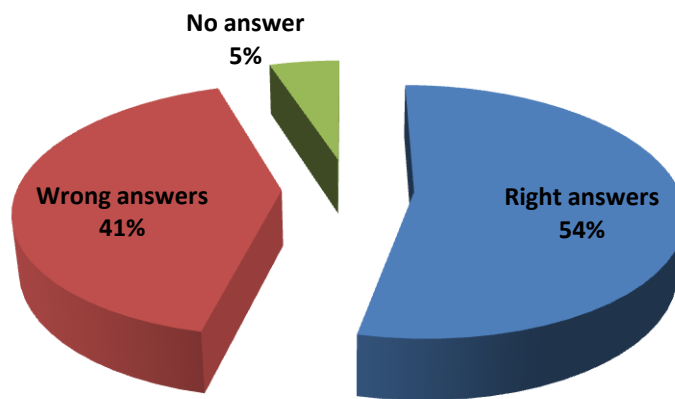
It seems that when it comes to infer items from context, a large number of students can do so. The following section will demonstrate that.



**3.3.2 Section Two: The Test**

<b>Item</b>	<b>Right Answer</b>		<b>Wrong Answer</b>		<b>No Answer</b>		<b>Total</b>
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	
<b>From</b>	17	51.51	4	42.42	2	6.06	33
<b>Arrival</b>	13	39.39	6	48.48	4	12.12	33
<b>Americans</b>	23	69.69	9	27.27	1	3.03	33
<b>Give</b>	27	81.81	6	18.18	0	00	33
<b>To</b>	05	15.15	3	69.69	5	15.15	33
<b>Saw</b>	20	60.60	3	39.39	0	00	33
<b>Myself</b>	09	27.27	4	72.72	0	00	33
<b>Close</b>	18	54.54	3	39.39	2	6.06	33
<b>Expected</b>	27	81.81	5	15.15	1	3.03	33
<b>Total</b>		<b>481.77</b>		<b>372.69</b>		<b>45.45</b>	<b>33</b>

**Table 21: Summary table of the Cloze Procedure Format**



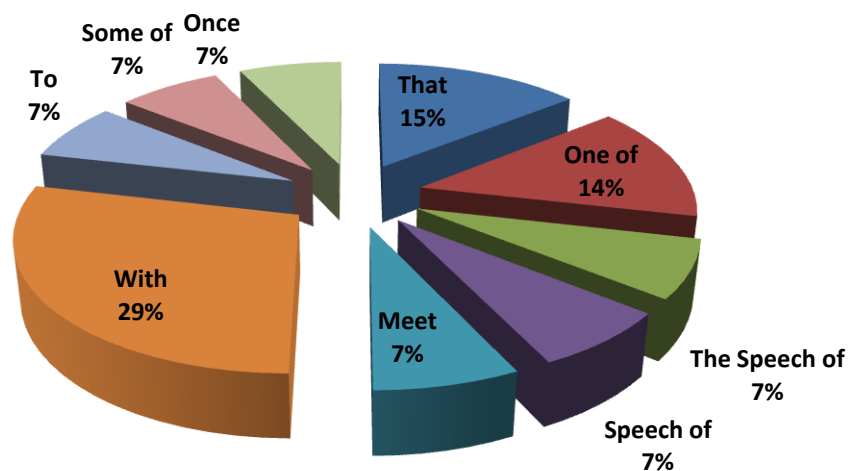
**Graph 21: Summary table of the Cloze Procedure Format**

The table indicates that students' responses vary from one item to another. The highest proportion of students' correct answers represents 81.81%, and the lowest proportion represents 15.15%, whereas the proportion of incorrect answers vary from 72.72% to 15.15%. We should state, also, that some students (between 15.15% and 3.03%) provided no answers for some items.

Totally, about 41% of the population provided wrong answers where 54% gave correct answers. And 5% had no answer.

	<b>Wrong Answers</b>	<b>N</b>	<b>%</b>
<b>From</b>	That	02	6.06
	One of	02	6.06
	The speech of	01	3.03
	Speech of	01	3.03
	Meet	01	3.03
	With	04	12.12
	To	01	3.03
	Some of	01	3.03
	Once	01	3.03
	<b>Total</b>	<b>14</b>	<b>42.42</b>

**Table 22: Item 01: From**



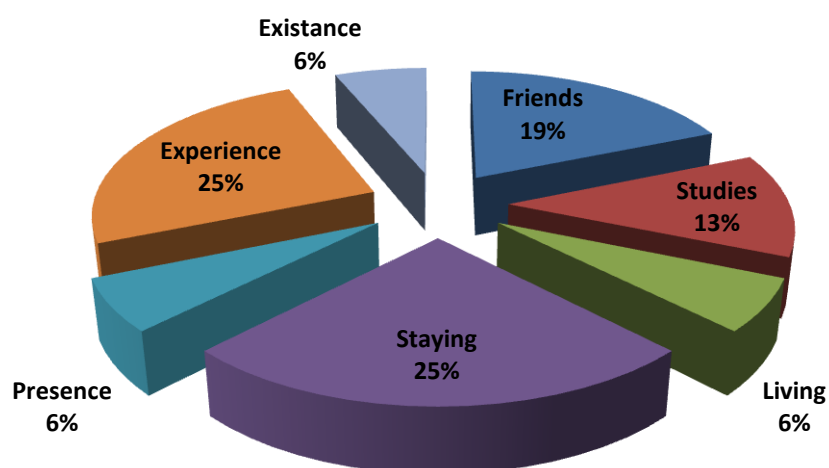
**Graph 22: Item 01: From**

The table reveals that a large number of students (42.42%) gave incorrect answers. Among them 6.06 % filled in the blank with "that", with "one of "or with "speech of ". The same proportion (3.03%) filled it in with "meet", "to", "some of", or "once" .Moreover, the highest proportion of incorrect answers was that of "with", of 12.12%. It seems that students,

according to their answers, were lost in trying to find out the suitable item (proposition) to fill in the first blank.

	<b>Wrong Answers</b>	<b>N</b>	<b>%</b>
<b>Arrival</b>	Friends	03	9.09
	Studies	02	6.06
	Living	01	3.03
	Staying	04	12.12
	Presence	01	3.03
	Experience	04	12.12
	Existance	01	3.03
	<b>Total</b>	<b>16</b>	<b>42.48</b>

**Table 23: Item 02: Arrival**



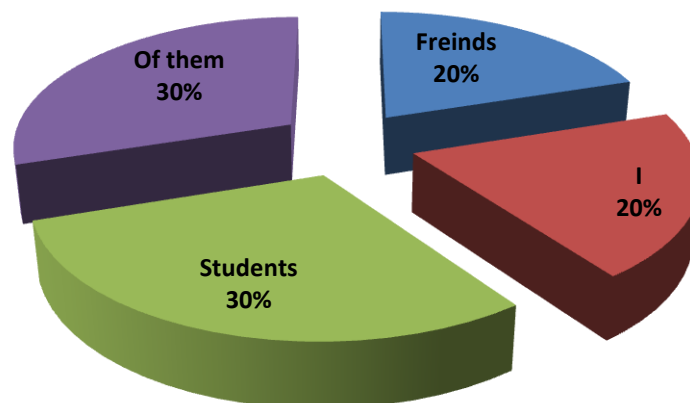
**Graph 23: Item 02: Arrival**

The information indicates that a number of students (27.33%) wrongly filled in the second blank. 9, 09% answered by "friends", and 6.06% put "studies". The same proportion (3.03%) who answered by "living" or "existence" approximate the right item but those words

do not convey the intended meaning by the text. The highest proportion 12.12% gave "experience" as an answer.

	<b>Wrong Answers</b>	<b>N</b>	<b>%</b>
<b>Americans</b>	Friends	02	6.06
	I	02	6.06
	Students	03	9.09
	Of them	03	9.09
	<b>Total</b>	<b>10</b>	<b>30.3</b>

**Table 24: Item 03: Americans**



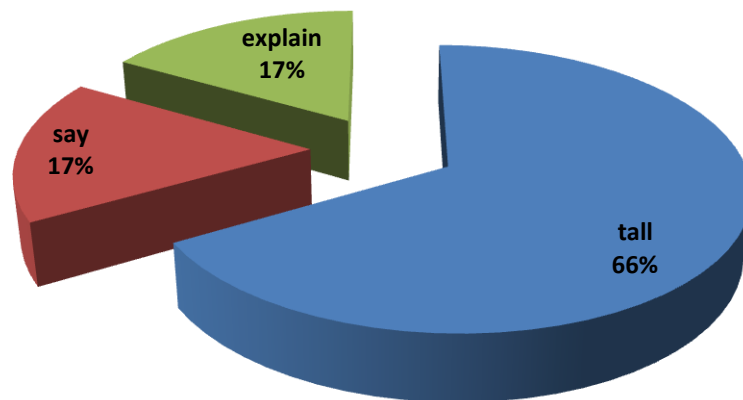
**Graph 24: Item 03: American**

Concerning this item, 30.03% of the students could not deduce the right answer: 6.06% answered by "friends", 3.03% by "I" and 9.09% equally put "students "or "of them".

It has to be noted that students in their answers, relied on the meaning of the text as a whole, not on the meaning conveyed by every single sentence.

<b>Give</b>	<b>Wrong Answers</b>	<b>N</b>	<b>%</b>
	Tall	04	12.12
	Say	01	3.03
	Explain	01	3.03
	<b>Total</b>	<b>06</b>	<b>18.18</b>

**Table 25: Item 04: Give**



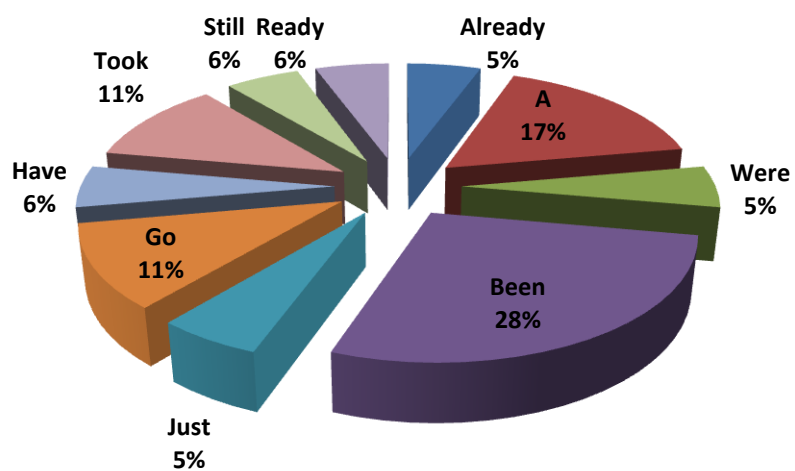
**Graph 25: Item 04: Give**

The table illustrates that few among the students of the sample (18.18%) have mistaken. 12.12% chose "tall" to fill in the blank while 3.03% filled it in with "say" and "explain" (the same proportion).

Here, it is obvious that the students are very familiar with the expression "give an example".

	<b>Wrong Answers</b>	<b>N</b>	<b>%</b>
<b>To</b>	Already	01	3.03
	A	03	9.09
	Were	01	3.03
	Been	05	15.15
	Just	01	3.03
	Go	02	6.06
	Have	01	3.03
	Took	02	6.06
	Still	01	3.03
	Ready	01	3.03
	Returned	01	3.03
	Started	02	6.06
	Goal	01	3.03
	Coming	01	3.03
	<b>Total</b>	<b>23</b>	<b>69.69</b>

**Table 26: Item 05: To**

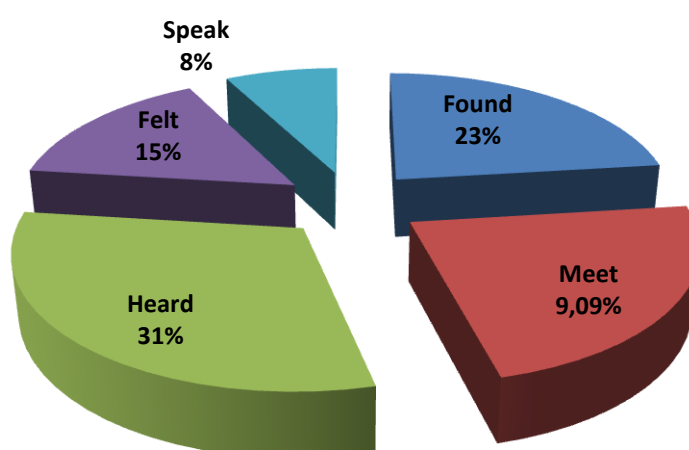


**Graph 26: Item 05: To**

A large number of students (69.69%) replaced this item by others: The same proportion 3.03% filled in the blank by the following items: "ready", "were", "just", "have", "still", "ready", "returned", "goal", "coming". The same proportion 6.06%, also, chose "go", "took", and "started" as answers. 9.09% put the article "a" in the blank. The highest proportion 15.15% answered by "been", which reflects that the students have a problem with tenses (as "been " never goes with "walk" but "walking" ). Moreover, for the second time, a large number of students answered incorrectly when the item is a preposition.

	<b>Wrong answers</b>	<b>N</b>	<b>%</b>
<b>Saw</b>	Found	03	9.09
	Meet	03	9.09
	Heard	04	12.12
	Felt	02	6.06
	Speak	01	3.03
	<b>Total</b>	<b>13</b>	<b>39.39</b>

**Table 27: Item 06: Saw**



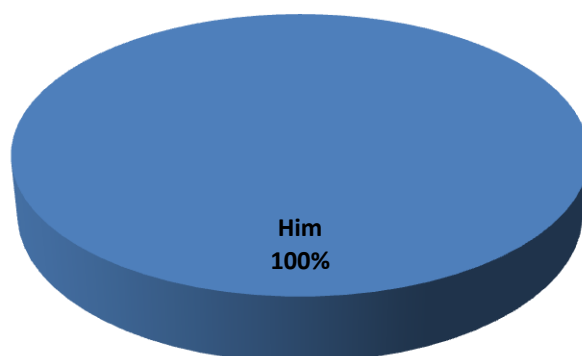
**Graph 27: Item 06: Saw**



This table reports that a relatively large number of students (nearly 40%) inserted the wrong verb in the blank. Among them, the same proportion (9.09%) answered by "found" and "meet", 6.06% provided "felt" as answer, and 3.03% chose "speak" to fill in the blank. The highest proportion (12.12%) was that of the students who put the verb "heard" in the blank, an answer that does not serve the meaning that the text requires.

<b>Myself</b>	<b>Wrong Answers</b>	<b>N</b>	<b>%</b>
	Him	24	72.72
	<b>Total</b>	<b>24</b>	<b>72.72</b>

**Table 28: Item 07: Myself**

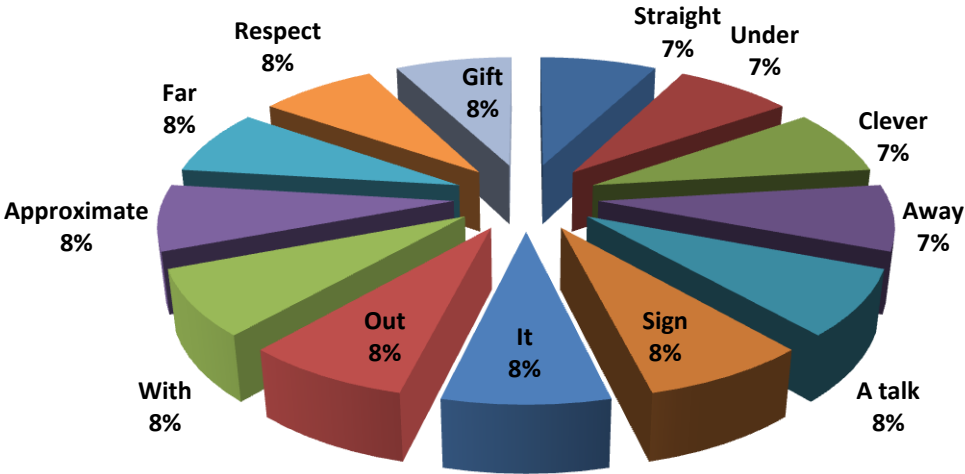


**Graph 28: Item 07: Myself**

This information demonstrates that a vast majority of students (72.72%) didn't find the right answer. All of them answered by "him".

	<b>Wrong Answers</b>	<b>N</b>	<b>%</b>
<b>Close</b>	Straight	01	3.03
	Under	01	3.03
	Clever	01	3.03
	Away	01	3.03
	A talk	01	3.03
	Sign	01	3.03
	It	01	3.03
	Out	01	3.03
	With	01	3.03
	Approximate	01	3.03
	Far	01	3.03
	Respect	01	3.03
	Gift	01	3.03
	<b>Total</b>	<b>13</b>	<b>39.39</b>

**Table 29: Item 08: Close**

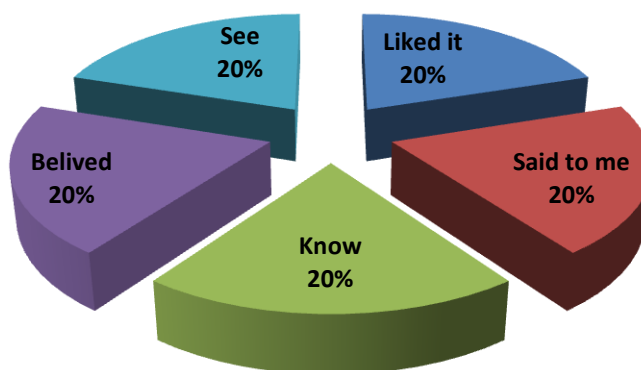


**Graph 29: Item 08: Close**

Once again a proportion that approximates 40% of the students' sample finds it difficult to deduce the right answer. The wrong answers which had the same proportion (3.03%) were as follows: "straight", "under", "clear", "away", "a talk", "sign", "it", "out", "with", "approximate", "far", "respect", and "gift".

	<b>Wrong answers</b>	<b>N</b>	<b>%</b>
<b>Expected</b>	Liked it	01	3.03
	Said to me	01	3.03
	Know	01	3.03
	Believed	01	3.03
	See	01	3.03
	<b>Total</b>	<b>05</b>	<b>15.15</b>

**Table 30: Item 09: Expected**



**Graph 30: Item 09: Expected**

Concerning the last item, which is familiar to students, the majority of them could guess the right answer from the context. Only 15.15% among the total number answered incorrectly by: "liked it", "said to me", "know", "believed", and ". Such answers had the same proportion (of 3.03%).

## *Conclusion*

The conclusion is not very optimistic. On the whole:

- 58.33% of teachers assert that the students' level in writing is weak. This besides that only 3.03% of the total number of students read always confirms the contribution of reading in writing. This is what all the teachers agree on (100%) and what the theoretical part attempted to show.

- 91.66% of the total number of teachers agrees that deductive reasoning is useful in learning and 83.83% agree that it plays a vital role in enhancing the learners' writing competency. Again, this was deduced through dealing with the literature review. We would have added a question aiming at assessing the students' level of comprehension as estimated by teachers (as deductive reasoning is important for appropriate understanding), but as we were obliged to move to the practical part before finishing with the theory, because of the constraints of time, we did not realize the usefulness of such question.

- 66.66% of teachers view that students do not put into practice their inferring abilities while writing, and among those who said they do claim that such application is not really effective which means that students do not generate enough inferences to reach appropriate comprehension (and good writing later on); especially about 41% of the students who answered to the test provide wrong answers; this despite the fact that the test was adjusted to their level of comprehension.

- All the teachers welcome the idea of teaching deductive reasoning through the curriculum.

As far as illustration is concerned, thinking skills just like any other skills can be improved through practice (starting with easy tasks to more complex situations). More precisely, the development of the reasoning ability (deduction and induction) has been inspected by Galloti, Baron, and Sabini (1986), whose statistics assert the probability that training conduct to right decisions (Solso, 1991). This conclusion endorses the idea that teaching thinking (deductive reasoning) through the curriculum is useful.

In addition, proof on teaching derives from the work of Philip Andey and Michael Shayer (1994) on their CASE (Cognitive Acceleration Through Science Education) project (built on Piaget's work). Thinking skills were taught to 12-13 years old pupils over two years. The results reveal remarkable proof that students who have been taught such thinking did better in their examination than control groups of students.

Moreover, a study has showed that increased use of interpretation while reading results in appropriate understanding, i.e. extensive reading foster appropriate inferences; which is highly required to produce better writing (1999).

Accordingly, further research is needed, in educational approaches, to point out the one or the ones that best motivate students to read.