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***The Investigation of the Place of Inference as a Cognitive Skill in the  
Algerian BAC Examinations of English***

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*To:*

*my beloved parents Mohand Arezki and Rachida,  
my lovely sisters Fariza, Ounissa, Sophia and my brother Mahdi,  
my uncles, my aunts and my grandparents,  
my dearest friends, especially Kamel, Lidia, Hanane, and Celia,  
and those with whom I shared enjoyable and pleasant moments.*

Silia Ben Ouali

*To*

*my lovely parents,  
my dear sisters,  
my dear brothers,  
all closet friends,  
all my teachers and  
all those who love me*

Lilia Belhiteche

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## ***Abstract***

*The present paper is concerned with the evaluation of the English Baccalaureate examination subjects in Algeria. Our aim was to explore the extent to which inference level is taken into consideration in these official examinations. In order to conduct the study, we analyzed sixteen (16) English BAC examination papers to know whether they include questions that necessitate the inference skill. Also, in our research we used Edyz Quellmalz framework of critical thinking skills including five skills, which are; recall, analysis, comparison, inference, and evaluation. The results showed that the five skills in Quellmalz taxonomy are all included but in imbalanced percentages. Inference questions in the BAC exams are highly included, it takes 37.82%. Almost all the types of inferences are found in the English BAC examinations we analyzed but unfortunately they all belong to simple inferences. Finally, a set of suggestions have been provided so to improve the English BAC examinations in Algeria.*

## List of Abbreviations

- **BAC:** Baccalaureate.
- **CBALT:** Competency Based Approach to Language Teaching.
- **EFL:** English as a Foreign Language.
- **ELT:** English Language Teaching.
- **Hp:** Hypothesis.
- **Q:** Question.

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## List of Symbols

%. Percentage.



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## **General Introduction**

### **■ Statement of the Problem**

Assessment is fundamental and indispensable in the teaching/learning process as it enables teachers to evaluate their students' progress and performance, as well as to determine their success and failure as in official examinations. Thus, the way the students are assessed should be effective and testing should be relevant by meeting important criteria, namely; practicality, validity, and reliability. In addition, testing is intended to stress higher-order thinking skills; that is, the skills the students need in real-life situations. It is because the significance of testing that we decided to enquire about the importance accorded to "inference" as a cognitive skill in the English Baccalaureate examinations. Accordingly, our research aims at evaluating the English BAC exams in relation to "inference". Our task, thus, is to figure out what goes right and what goes wrong in the English BAC exams about the issue of testing the students' abilities to infer hidden information, creation, synthesising and draw final conclusions.

In this context, it is important to indicate that after the Algerian Educational Reform which was launched in 2002, there was a great interest to adopt the Competency-Based Approach to Language Teaching (CBALT) to ensure the effective education and success of the students. The approach focuses on developing the cognitive abilities of students by teaching them how to think and how to criticize. The question that arises is whether the Algerian official examinations (BAC) respect the principles of the CBALT which principally stresses the testing of the cognitive skills and the critical thinking.

### **■ Aims and Significance of the Study**

The present research work investigates the importance accorded to inference as a critical thinking skill and a mental operation that consists on drawing conclusions and logic deductions in the BAC examinations. We are going to look at this issue relying on Edyz Quellmalz framework of thinking skills consisting of five levels: “recall”, “analysis”, “comparison”, “evaluation” and “inference” which is the center of our interest.

Our choice of this subject is due to its originality. In fact, according to the best of our knowledge, the testing of inference skill in the Algerian official examinations of English has never been investigated before. Also, because of the importance that inference plays in helping students improve their thinking abilities because it is a mental skill which is useful for learners at school where they are always asked to read between the lines to grasp the hidden and the implied meaning.

### ▪The Issue and the Working Hypotheses

It is worth mentioning that our study is about evaluating testing materials. Then, our research which aims at evaluating English BAC examinations in relation to inference can be carried out in an effective way by providing answers to the following research questions:

**Q1:** What are the levels of Edyz Quellmalz framework that are included in the Algerian BAC examinations of English?

**Q2:** Is inference assessed in the Algerian English BAC examinations?

**Q3:** What is the place of inference in the Algerian English BAC examinations?

In order to answer to the research questions, we have suggested four advanced hypotheses, they are as follow:

**Hp1:** Not all the levels of Quellmalz taxonomy are included in the Algerian English BAC examination subjects.

**Hp2:** Inference is taken into account in the Algerian English BAC examinations.

**Hp3:** Inference is not taken into account in the Algerian English BAC examinations.

## ■Research Techniques and Methodology

In the practical section of the present work we are going to collect the necessary data by analyzing the sixteen (16) BAC examination subjects of English language. As it has already been mentioned, we are going to rely on Quellmalz Framework. Then, all the subjects are going to be analyzed in order to classify their activities according to the levels of Quellmalz' taxonomy. After that, we are going to verify and evaluate the incorporation of questions dealing with the inference skill and sort out the place that such a skill takes in the Algerian BAC exams of English.

## ■Structure of the Dissertation

This study will be carried out following the IMRAD method. The dissertation, then, includes a general introduction, a review of the literature, the research design, results, discussion of the results, and a general conclusion. First of all, the theoretical part will start with a general introduction, a review of the literature to define the concepts related to the study, the methodology in which we are going to describe the corpus to be used in doing the research and the methodology of data collection and data analysis. Then, the practical part will be made up of the result, the discussion and interpretation of the results. Finally, our study ends up with a general conclusion followed by bibliography and the appendices.

## **CHAPETR ONE: REVIEW OF THE LITERATURE**

### **Introduction**

This chapter is devoted to discuss the concepts related to the issue of assessing inference skill in the English BAC exams in Algeria. It covers the scope and definitions of assessment, as well as the different definitions of testing. Also, the various types and approaches related to testing are provided and explained. The third part is about critical thinking and the most prominent works in the field. In the fourth and last part, much focus is put on inference skill as our study principally evaluates the English BAC exams in Algeria with reference to “inference” as a cognitive skill.

### **I. Assessment and Testing of Inference as a Critical Thinking Skill**

#### **I.1. Assessment and Evaluation**

According to the *Longman Dictionary* (2002: 35) assessment is: “*a systematic approach to collecting information and making inferences about the ability of a student or the quality or success of a teaching course on the basis of various sources of evidence*”. So, it is a technique used by teachers to assess their students to get information about the efficiency of their teaching methodology, and to know whether the students achieved the learning goals. Maddalena Taras said about assessment; “*it is the mechanics or steps required to effectuate a judgment*” (2005: 467). The definition was reinforced by Gary D. Phye who added that assessments “*are designed and implemented primarily to serve the information needs of students and teachers*” (1996: 9). Said in clearer words, assessment principally aims at helping the teachers overcome their problems that might be generated by inefficiencies in their teaching techniques, as well as students by telling them what goes true and what goes wrong in their learning process.

It is important to indicate that the terms “assessment” and “evaluation” are used by many people in the field of pedagogy interchangeably without making a distinction between the two. Thus providing a clear-cut distinction between the two might help us to have a better understanding of both terms. Such distinction is provided in the following quotation:

The terms 'Evaluation' or 'Assessment' are both in common usage in educational circles. In the UK, the common use of the term “assessment” is to refer to judgments of students' work, and “evaluation” to refer to judgments regarding courses or course delivery, or the process of making of such judgments (Maddalena, Taras, 2005: 466-467).

In the definition provided by Maddalena Taras, she explained the difference between assessment and evaluation, according to her, assessment is concerned with judging students' performance and evaluation with judgment of the efficiency of a given course or a program of instruction.

In this context, Russell Stannard and Anthony made a distinction between two types of assessment, summative and formative assessment. According to them, summative assessment *“often takes place at the end of a unit, module or a whole course. The focus tends to be on the mark and the idea is to evaluate how well the student has learned what has been presented”* (2013: 152). Learners are assessed and given marks to determine whether they succeeded or not as in the case of BAC exams in Algeria. As regards formative assessment, it takes place during the learning process to permit to teachers get information about their students' progress and this in order to help the students to improve their learning level (ibid). For example, the questions and the exercises that teachers give to students in the classroom; the aim of this type of assessment is to evaluate the students' achievement and the effectiveness of the teaching and learning process.

Other kinds of assessment are peer-and-self assessment. Peer assessment was defined by Jack C. Richards and Richard Schmidt as *“activities in which learners assess each other's*

*performance*” (2010:425). Bethan Marshall added: *“In peer assessment, although they will have to show ‘technical skills’ they will make ‘delicate adjustments’, rather than working to rule-bound formula of how the other person might improve”* (2011:10). From these two quotations we understand that peer assessment permits learners to correct each other’s work. In addition to that, the students will develop their critical and evaluative competencies, as well as their communicative abilities and this by exchanging ideas and comments. As regards self-assessment, it is about *“Checking one’s own performance on a language learning task after it has been completed or checking one’s own success in using a language”* (Jack C. Richards and Richard Schmidt, 2010: 517). When the learners correct their work, they will be informed about their strengths and weaknesses. Thus, they will be given the opportunity to ameliorate their language use and usage. An important point to mention here is that self and peer assessment are done by the students through their teacher’s assistance and help. That is, it is up to the teacher to provide the students with necessary criteria when involved in these two types of assessment.

In addition, we can distinguish between formal and informal assessment, formal assessment was defined by Jack C. Richards and Richard Schmidt as *“Tests given under conditions that ensure the assessment of individual performance in any given area”* (2010:226). For example, the BAC exams are formal; because, they are official and national, the subjects are designed by the National Ministry of Education, the exams are taken during the same period of time determined by the government and the results are recognized. However, informal assessment is the techniques used to collect data about learner’s achievements in the classroom (ibid: 281). This permits to the collector to get more reliable information about the student’s level since they are in the natural conditions.



## **I.2. Testing**

Jack C Richard defined a test as: “*Any procedure for measuring ability, knowledge, or performance*” (2010:591). This definition explicitly indicates that testing deals with measurement through which we can determine the positive and negative points of something. Tests are means of gathering information as it has been pointed out by Arthur Hughes “*we use tests to obtain information*” (1989:9). The information that the testers get is used as data for doing further research in the field of teaching. In other words, testing is a tool that can inform teachers about their students’ progress as well as about the efficiency of their teaching methods. For example, if the majority of the students fail in a given exam the teachers are required to consider his/her ways of teaching.

### **I.2.1. Types of Tests**

Arthur Hughes in his book *Testing for Language Teachers*, distinguished between nine types of tests;

#### **I.2.1.1. Proficiency Tests**

Proficiency tests; “*are designed to measure people’s ability in a language regardless of any training they may have had in that language*” (1989:09). The content of this type of tests is based on what the candidates should be able to do or in which language skill or area to be proficient (ibid: 09-10).

#### **I.2.1.2. Achievement Tests**

Achievement tests are; “*directly related to language courses*” (ibid: 10). The content of achievement tests is concerned with the courses that the test-takers have already taken. In the

Algerian BAC exams, the candidates are asked questions related to the program of the third year in the secondary school.

#### **I.2.1.3. Diagnostic Tests**

Diagnostic tests are designed by teachers in order to sort out strength and weaknesses of the students, and when they are done in a proficient way, they would be helpful in instruction (ibid: 13).

#### **I.2.1.4. Placement Tests**

Placement tests; *“are intended to provide information which will help to place students at the stage (or in part) of the teaching program most appropriate to their abilities”* (ibid: 14). Students are tested on their general knowledge about the language, and then told about their levels and competencies so to permit them, for example, to integrate a given program.

#### **I.2.1.5. Indirect and Direct tests**

Indirect tests; *“requires the candidate to perform precisely the skill which we wish to measure”* (1989:15). For instance, the test-taker can be asked to do an activity where they are asked to transform a list of verbs into the past tense. By contrast, in indirect testing the question will not target directly the element (ibid), the activity can ask the students to write a story or a paragraph on which they narrate an event to permit the correctors to know if the test-takers succeeded on conjugating the verbs into the right tense. In the BAC exams, this kind of questions are asked in the written expressions where students are asked to write a composition on a specific topic, the correctors are not going to focus only on the content of the composition but will pay attention to the vocabulary, spelling and grammar mistakes.

### **I.2.1.6. Discrete Point and Integrative Testing**

Discrete point tests, tests only one particular element. By contrast, integrative tests combine a number of elements in one test. (ibid: 16).

### **I.2.1.7. Norm Referenced and Criterion Referenced Testing**

Norm-referenced testing “*relates one candidate’s performance to that of other candidates*” (Ibid: 17). This means the position that one can take among the other candidates. While criterion-referenced tests “*classify people according to whether or not they are able to perform some task*” (ibid: 18). The idea that is expressed here is that criterion-referenced tests involve measuring one’s abilities to do or not to do a given task. Concerning the objective and subjective testing, the first is when the scorer does not display value judgments when correcting the responses. On the other hand, in subjective testing the tester’s value judgments are displayed (ibid: 19).

### **I.2.1.8. communicative language testing**

As regards the last type which is communicative language testing, it is testing the ability of the learners to communicate effectively (ibid), or to use language in a correct way by respecting the context.

## **I.2.2. Approaches to Testing**

In the field of language testing, Joel Spolsky, made a distinction between three approaches (Theo Van Els *et al*, 1984:324).

### **I.2.2.1. The Traditional Approach**

This approach is called in this way since it gives no importance to reliability and objectivity, and does not use the statistical methods. He considered that the approach followed “*the traditional way of thinking*” (ibid). This kind of tests put stress on translation activities, writing essays, grammar, and oral tests (ibid: 325).

#### **I.2.2.2. The psychometric structuralist (modern approach)**

The structuralist approach started as a rejection to the non-reliability of the traditional tests, which considered that anyone who can teach language can test it, and tries to make the tests more objective and scientific (Spolsky, 1978:218) cited in Theo Van Els *et al* (1984:325). In the same field, Robert Lado linked between Psychometrics and Linguistics, and emphasized that: “*test should test language usage not knowledge about language*” (Klein Braley: 1981) quoted in Theo Van Els *et al* (1984:325), the students were assessed not according to the linguistic correctness of their answers but their appropriateness. This led to the establishment of standardized tests.

#### **I.2.2.3. The Psycholinguistic Sociolinguistic Approach (post modern)**

This approach gave more importance to linguistics, specifically to psycholinguistics and sociolinguistics (Van Els *et al*, 1984: 325). It was characterized by the use of discrete point and integrative testing which measure “*the total communicative effect of an utterance*” rather than separated units (Carroll 1972:318 quoted in ibid).

#### **I.2.2.4. The Communicative Language Testing Approach**

Thomas Anderson (1981) added the Communicative approach to testing. It emerged because of the shift from the linguistic competence to the communicative one during the last 20<sup>th</sup> century. B Carroll emphasize on the use of language in real life setting based on the

communicative need of the learners, because the aim of teaching languages is to provide learners with the ability to use them appropriately (Van Els et al, 1984: 331).

The recent approaches to language teaching try to adopt new assessment methods and techniques different from the traditional ones, which give importance to the testing of thinking skills, *“new forms of assessment are needed to replace traditional multiple choice and other items that test lower-order skills”* (Jack C. Richards, 2010: 22). In addition, tests should respect some criteria that are; Generalizability; the results of the test can be generalized to others, validity; the content of the test should measure what it was intended to measure and reliability (Looney, J.W., 2011: 17).

### **I. 3. Critical Thinking**

The aim of introducing critical thinking in this part of the research is because our interest is “inference” which is a critical thinking skill. Critical thinking has a significant effect and has become very important in education; this is due to the different difficulties and the problems that students meet in their real-life (Kurfiss and Joanne Gainen, 1988: 2). In this context, Kurfiss and Joanne Gainen defined critical thinking as follows:

Critical thinking is a rational response to questions that cannot be answered definitively and for which all the relevant information may not be available it is defined here as an investigation whose purpose is to explore a situation, phenomenon, question or problem to arrive at a hypothesis or conclusion (ibid: 19).

This means that critical thinking is not an easy task; it requires students to think and explore problems to find solutions, and come out with hypotheses and conclusions. Critical thinking helps and teaches students to detect and avoid false reasoning. Facione (1990) defined critical thinking as a *“purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteria logical, or conceptual considerations upon which that*

*judgment is based*” (Imily R. Lai, 2001: 6). To be clearer, critical thinking involves the component skills of analyzing and making inferences, through using inductive or deductive reasoning, making judgments and evaluations, as well as making decisions or solving problems (ibid).

Interestingly, to indicate that inference is closely related to critical thinking, it has been said that critical thinking is “*the ability to analyze facts, generate and organize ideas, defend opinions, make comparisons, draw inferences, evaluate arguments and solve problems*”(Chance,1986: 66).

When teachers are assessing their students using specific methods for assessing critical thinking, the students’ thinking skills are going to improve progressively (Susan Brookhart, 2010: 8). Assessment also increases students’ motivation regarding the learning process (ibid: 12). They become able to play and manipulate information according to their needs and go beyond the traditional way of teaching relied on memorization and recalling information.

One of the most prominent approaches in the domain of critical thinking is Benjamin Bloom taxonomy of educational objectives. It was first developed in 1950’s with the aim of supporting and developing the different materials and ideas related to testing, and to show the relationship between examinations and education (Bloom, 1956: 4).

### **I.3.1. Benjamin Bloom’s Taxonomy of Educational Objectives**

The taxonomy consists of six levels organized hierarchically, the lower and the higher domain. The lower domain includes: “knowledge”, “comprehension”, and “application”. According to Bloom and Merriam Webster, knowledge involves the recall of specific and universals... it consists of remembering what the learners have already studied in classroom (2003: 201). “Comprehension” introduces understanding, it refers to what is communicated

without relating it to other materials (ibid: 205). That is to say, students are going to depict and use what was communicated in the text, they just emphasize on the clues which are in the text. The third level is “application” which means the use of particular rules, methods in concrete situations, to solve a problem or exercises (ibid: 205).

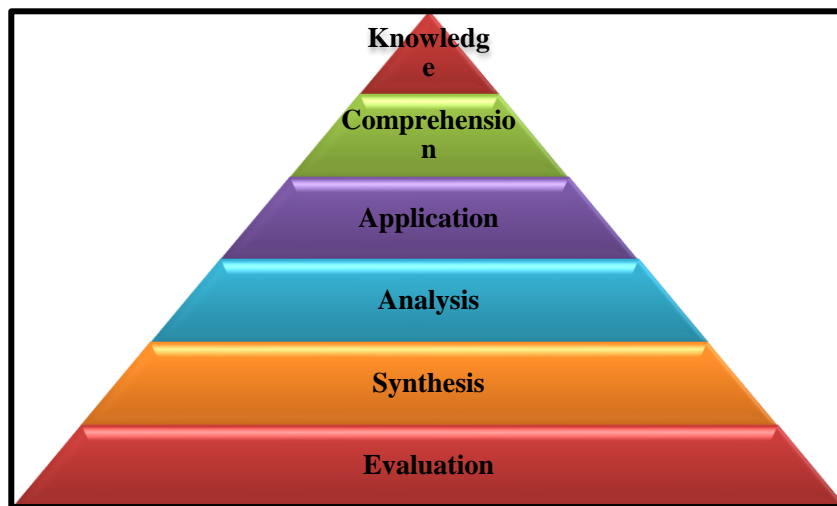


Diagram 1

The first level of the higher domain is “analysis” which emphasizes the breakdown of the material into its constituent parts and the relationship between the parts and the way they are organized (ibid: 144). The second level in the highest domain is “synthesis”, which is according to Merriam- Webster’s *Collegiate Dictionary* the composition or the combination of components so as to form a complete object or thing (2003: 1269). The last and highest level is evaluation that is defined as making judgments about the value and the importance of something (Bloom, 1956: 185). Our objective in including bloom’s taxonomy in our study is twofold. On the one hand, the taxonomy is important in planning and making educational examinations and testing. On the other hand, it is very useful in the domain of critical thinking skills.

Benjamin Bloom's framework is a prominent and famous framework in the domain of critical thinking so it was necessary to mention it. However, in our work we adopted Edyz Quellmalz framework for the reason that the work targets inference skill and according to our knowledge, Quellmalz taxonomy is the most suitable.

### **I.3.2. Edyz Quellmalz' Framework**

Among the taxonomies that can be applied in the field of teaching and testing, we have the one developed by Edyz Quellmalz. About the Quellmalz taxonomy Abu-Hamdan states that:

Quellmalz Taxonomy is a common tool used to assist with the writing of learning outcomes. This taxonomy is based on the premise that what instructors want their students to learn can be arranged hierarchically from less to more cognitive complex tasks (2014: 46).

That is to say; the taxonomy is a framework for writing and classifying the learning outcomes. It is based on what the teachers want their students to learn and achieve (ibid: 45). Edyz Quellmalz is a famous educational psychologist who made a framework of thinking skills. Her aim was mainly to help teachers and learners to understand and emphasize the use of the strategies used in problem solving rather than rote learning and memorization (Guilford and Sternberg, 2000) cited in (David Moseley *et al*, 2005: 90). Also, one of the functions of the taxonomy is "*to encourage the teaching of problem solving across the curriculum*" (ibid: 93), because when teachers are informed that their students are going to be tested on their thinking and problem solving abilities, they will design tests which involve such aspects of instruction.

Quellmalz focused on higher-order thinking skills, because it is needed in different domains and areas. According to Quellmalz, learning is a process that people construct from their previous knowledge and experience to develop more complex levels of understanding (Abu Hamdan, 2014: 45). In the same context, Quellmalz added that students use different



levels of thinking to process different types of information and situations, “*Some of these are basic cognitive skills such as ‘recall’, while there are other complex skills such as ‘inference’*”. She argues that inference and deduction go beyond deductive and inductive reasoning and covers to apply a rule, to synthesize, and create (ibid). Quellmalz identified five levels arranged hierarchically and they are: “recall”, “analysis”, “comparison”, “inference”, and “evaluation”.

### **I.3.3. Levels of Quellmalz Taxonomy**

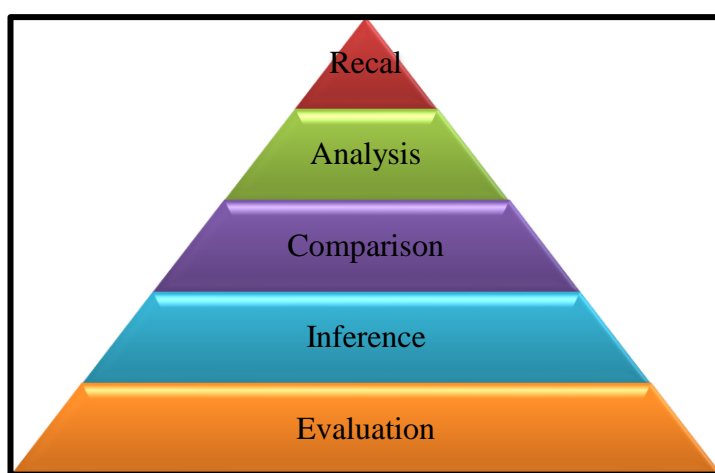


Diagram 2

#### **I.3.3.1. Recall**

According to Merriam Webster's *Collegiate Dictionary* recall refers to the remembrance of what has been learned or experienced (2003: 1073). To be more explicit, students are going to recover and get back facts in the same sample they have learned in classrooms, and they are going to repeat the information as it is given by their teachers (Stiggins, Rubel and Quellmalz, 1988). Said differently, most tasks require the learners to recognize the key elements such as definitions, concepts, rules, and principles, that is, the learners paraphrase the information and associate it with other related concepts. Recall is equivalent to knowledge and comprehension in Bloom's taxonomy. The words and verbs which can be derived from this category are: “to

*name, to label, to list, to repeat, to identify and remember etc...*” (ibid). Also, the questions that can be asked in this category are for instance: *‘who was the main character in the story?’*, *‘Name the different components of the machine’* and *‘what is the capital of China?’* (ibid).

### **I.3.3.2. Analysis**

Analysis is the division of the whole into specific components and parts (Merriam Webster, 2003:44). In other words, analysis questions require the students to divide a whole into small components and parts, in addition to understanding the relationships between the whole and its component parts. The main task in analysis is to sort out the links between different items and to know how things work together (Abu Hamdan, 2014:45). Words that can determine that the tasks necessitate the analysis skill are for example; *“subdivide, breakdown, separate...etc”* (Stiggins, Rubel and Quellmalz, 1988). As regards the type of questions that can be asked with relation to analysis, for example; *“‘what are the basic steps to write an essay?’*, *‘analyze the following sentences’*. In addition, we have questions such as *‘what is the function of the verb “to order” in the sentence?’* or *‘categorize the following words into plural or singular’*” (ibid). The students in this case are asked to examine, analyze different cases to get results, and to know how things work together.

### **I.3.3.3. Comparison**

Merriam Webster defined comparison as the representation of one thing or person as similar to or like another. Also, comparison involves the task to find similarities and dissimilarities between two items or more (2003: 252). A comparison may be simple or complex (Stiggins, Rubel and Quellmalz, 1988). Simple comparisons are based on clear objects; they require a concentration on one or a small number of obvious features that exist between two or more items. For example, in what ways are tigers and lions similar, in what

ways are they different? Complex comparisons require an examination of more extensive attributes of two or more things. For instance, compare the African continent with the European continent in terms of geography. This category relates to some of the skills in Bloom's level of analysis (ibid, 1988). The activities may contain some words such as *"compare, contrast, distinguish, alike, different"* (ibid).

#### **I.3.3.4. Evaluation**

Evaluation is defined as determining the value of something, the significance, worth or condition of use (Merriam Webster). To be more explicit, evaluation is to express and defend an opinion. Evaluation tasks require students to judge quality, worth, practicality, and credibility of something using established criteria. Evaluative verbs are: *"judge, evaluate, justify, defend, best solution, and criticize"* (Stiggins, Rubel and Quellmalz, 1988). The questions that can be asked are for example; *"According to you what is the best solution to avoid pollution?", 'Do you believe that ethics in business is appropriate, justify?' or 'Should the death penalty be abolished? Why?'"* (Stiggins, Rubel and Quellmalz, 1988). The students are going to evaluate and justify their opinions about specific issues by providing answers and solutions.

After having presented and explained the different levels of Quellmalz' taxonomy, it seems important to move on to consider the meaning of inference and its types in detail; because, inference is the focus and the canonic part of our investigation.

### **I. Inference**

#### **I.4.1. Definitions and Description of Inference**

Anne Kipsal defined inference as *"the ability to use two or more pieces of information from a text in order to arrive at a third piece of information that is implicit"* (2008: 2). We can distinguish between simple inferences like using personal pronouns to refer to persons

already mentioned and complex inferences like deducing hidden information (ibid). According to Merriam Webster inference is to infer, deduce, conclude, judge, gather mean to arrive at a mental conclusion. “Infer” implies arriving at a conclusion by reasoning from evidence (2003: 432).

Hannah and Michaelis (1977) designed a “Comprehensive Framework for Instructional Objectives” which contains; *“generalizing, inferring, patterning and integrating”*. Inference according to them is when *“the student uses appropriate generalizations to reach and express conclusions that go beyond the data studied”* (David Moseley *et al* 2005: 76). From the definition, we understand that inference is joining between two pieces of information to get a new one. In the same context, Joann Hammadou agreed that inference *“involves reasoning a step beyond the text, using generalization and explanation”* (1991:28).

In order to make inferences, the readers should be able to use knowledge stored in their memories, as well as their experiences. In fact, *“studies demonstrate that access to world knowledge can be obligatory in the sense that a text cannot be completely understood without it”* (Long *et al*, 1996) quoted in (Anne Kispal, 2008: 17). However, the relation is not reciprocal; the fact that readers have background knowledge does not guarantee that they will be able to make inferences (ibid).

In the same context, Pressley and Afflerbach (2000) referred to the Schema theory which proposes that information is gathered into meaningful units. We have schemas for most experienced things which allow readers to make inferences when reading texts. With connection to this, it has been pointed out that *“much knowledge is stored in complex relational structures, schemata ... once some small part of schema ... is encountered, the activated schema causes reasonable inferences to be made”* (Anne Kispal, 2008:14). That is, what permits to schemata to develop is the readers’ experiences (ibid). In other words,

inference necessitates the association of background knowledge and experience to infer and deduce the hidden meanings in texts.

The inference skill is beneficial to students since it allows them to understand, criticize and study texts, the readers have to make inferences because of implicit data that are included in the texts, and without inference skill the total understanding would be impossible.

In language testing, students are given a text followed by questions related to the text where test designers include questions related to inference skill. The students are asked to infer and predict relying on their cognitive abilities and experience to solve the problem. Some verbs can determine that the questions are dealing with inference, for instance, the verbs; hypothesize, synthesize, use evidence, apply a rule, generalize, create, infer, what if, predict, conclude, apply, and solve (Stiggins, Rubel and Quellmalz, 1988). The questions that can be asked are for example;

1. *What would happen if everybody stopped watching television?*
2. *Predict what will happen if you combine vinegar and baking soda.*
3. *What rule applies in this situation?*
4. *What is the main idea of story?*
5. *Predict how the story will end?* (ibid)

The answers of these questions are not mentioned explicitly, the readers need to make inferences in order to answer them. For instance, in order to answer the fourth question, the students need to start from all that has been said in a text by paying attention to the vocabulary and the expressions included in it. Then, the students make a synthesis and conclusion about what the text is speaking about. Indeed, it has been pointed out that “*the ability to draw inferences predetermines reading skills: that is, poor inferencing causes poor comprehension and not vice versa*” (Anne Kispal, 2008: 2). The idea is that as far as students are inferring effectively they are better equipped with materials that enable them to better understand and comprehend the implemented meanings of texts.

## **I.4.2. The Different Kinds of Inference**

Providing a clear account of the various types of inferences is very important, as it helps us to better analyze the results and then to better investigate our issue which is the evaluation of the English BAC examinations in relation to “inference”. About the types of inference, Anne Kispal identified six types. However, she argued that there is no general agreement in the number of inferences or how they should be learned (2008: 2).

### **I.4.2.1. Coherence Inferences (text connecting / inter-sentence inferences)**

Coherence inferences keep the textual unity and reliability (Anne Kispal, 2008:2). For instance, the writer’s use of personal pronouns and conjunctions so that to avoid repetition and ensure the coherence of texts. This idea is clearly shown in the following example: “*Peter begged her mother to let her go to the party*”, the reader is going to understand that the pronoun “her” refers to Peter (ibid). As a result, understanding the structure of a given passage helps infer its meaning and the different ideas it conveys.

### **I.4.2.2. Elaborative Inferences (gap-filling inferences)**

According to Anne Kispal, elaborative inferences “*enrich the mental representation of the text*” (2008: 2). That is to say, elaborative inference is connecting logically between something said and what was not mentioned (unsaid) to understand the text relying on experience and previous knowledge (ibid). This type of inferences, hence, requires reading between the lines.

### **I.4.2.3. Local Inferences**

As regards local inferences, they “*create a coherent representation at the local level of sentences and paragraphs*” (ibid). To be more explicit, the readers are supposed to have previous knowledge about specific locations as in the example used by Anne Kispal “*Dan*

*stood his bike against the tree*” (2008: 3). The reader can infer that a tree was intended for that role, this type is called “*case structure role assignments*” (ibid). There are other ‘antecedent causal’ inferences (ibid) which belong to the local inferences in which the writer does not need to mention everything because the readers are going to infer the intended meaning. The task of the readers is to look for the unsaid.

#### **I.4.2.4. Global Inferences**

Global inferences are used to “*create a coherent representation covering the whole text*” (ibid). In other words, global inferences are the main ideas and points that the readers may sort out by reading a whole passage. This task does not involve the consideration of the different parts of a given text separately; rather, the text should be considered as a whole.

#### **I.4.2.5. On-Line Inferences**

On-line inferences are “*drawn automatically during reading*” (ibid). Learners in on-line inferences infer directly while reading. That is to say, on-line inferences refer to strategies used to understand messages and information that has not been mentioned in the text.

#### **I.4.2.6. Off-Line Inferences**

Off-line inferences are depicted strategically and tactically after reading the whole text, learners are going to use their reasoning strategies to infer (ibid), like drawing a map for whole texts and extracting the general ideas.

#### **I.4.2.7. Deductive and Inductive Inferences**

Inference is a mental process that helps people to solve real-life problems. Inference is reasoning inductively or deductively. In deductive inference, students reason from general to specific. While in inductive inference, students are given details and they are supposed to

relate and integrate the information and make generalizations (Stiggins, Rubel and Quellmalz, 1988).

According to Susan M. Brookhart, induction “*involves reasoning from an instance or instances to a principle*” (ibid). In other words, it is reasoning from specific to general or from a part to a whole, for example, when students are asked to give the theme of a given text, by providing supporting ideas from the text (ibid). In this type of questions, students are going to rely on detailed aspects such as the choice of vocabulary used by the author to move on to deal with something which is more general; that is, the ideas behind, the theme and the goal of the whole text.

On the other hand, deduction is: “*reasoning from a principle to an instance of principles*” (Susan M. Brookhart, 2010: 62), by going from general to specific, making derivations of conclusions and generalizations. Aristotle called this type ‘syllogism’, where two statements are combined to draw conclusions. This idea can be better understood through the example mentioned in the *Oxford Fajar Bilingual Dictionary*; “*all men must die; I am a man therefore I must die*” (2012: 300). In this example, the pronoun “I” helps to infer that the speaker must die because he is a man or a human being. The same thing for the example provided by Susan M. Brookhart which says that “*plants need water in order to thrive*” (2010:62). From this example we can conclude that water is necessary to the survival of the plants, thus, without water no plant can grow up. The process starts from identifying the assumptions to reasoning into conclusions (ibid: 63). While some researchers do not make a distinction between inference and deduction, others say that it is one type of inference (ibid).

#### **I.4.3. The Link Between Quellmalz Framework and CBALT**

It is of interest to indicate that Quellmalz taxonomy involves the principles of CBALT. Indeed, the taxonomy includes the cognitive levels which are mainly related to competences. For example, being able to infer, or analyze, or evaluate means being competent to implement



their own knowledge in real-life situations. In this context, it is to be mentioned that CBALT emerged in the late 1970s in the United States of America to permit to learners to use their knowledge in real life situations (Jack C. Richards, 1989: 90). In other words, one of the major aims of CBALT is to teach students and provide them with tools that they are going to use later on once they are outside school. In fact, one of the important and useful elements they need is critical thinking which permits them to become active individuals in society. It seems clear that if the levels of Quellmalz taxonomy are taken into account in the field of education the students will develop their learning capacities to solve real-life problems. But it is insufficient to teach the students critical thinking if they are not tested on it, because teachers are going to evaluate students if they have really acquired the teaching goals and permit to students to make use of what they have learned.

## **Conclusion**

In this section we attempted to put a focus on the important notions related to our work and on which we are going to rely on when doing the analysis of the BAC subjects and the discussion of the findings. We have tried to shed light on the definitions and types of assessment. Then we defined testing, its types and the different approaches that are used in testing. Also, we have dealt with the concept of critical thinking where we introduced the two famous frameworks of thinking; that of Bloom and that of Quellmalz. Finally, the last part was devoted to the definitions related to inference and its types.

## **CHAPETR TWO: RESEARCH DESIGN**

### **Introduction**

The present section is devoted to methodology. The research method that is going to be adopted in our investigation and the description of the corpus used to carry out our study. Thus, this section is going to be divided into two parts. The First is concerned with the materials, where we are going to provide a description of the corpus that is going to be used. More precisely, it is concerned with the description of the Algerian English BAC examinations and how they will be used. The second part is concerned with the methodology; it is made up of two parts. In the first part, we are going to describe and define the context evaluation. The second part will be devoted to the data analysis, the definitions related to the materials evaluation.

### **II.1. Materials**

#### **Overall Description of the Corpus**

The BAC exams are the national and the official exams designed by the National Ministry of Education to evaluate the third year secondary school students' achievements; this is done at the end of the year of study. In the recent years, from 2008, BAC examinations have known some changes and the students from the beginning are given the opportunity to choose from two subjects.

The BAC examinations are made up of two main parts. The first part is called 'reading' and it includes two sections. The first section is called 'Comprehension'; its objective is chiefly to assess the pupils' understanding and comprehension of the text. The activities that are found in this part are related to the text, for example that which ask to choose a title to the

text, answer questions according to the text and say whether the statement are true or false according to how they were said in the text.

The second section in ‘reading’ is called ‘Text Exploration’. It is related to grammar, phonetics, lexis, and other language structures. The activities included in this part are, for example, that which ask to find synonyms and opposites for words or expressions, join pairs of sentences using conjunctions or other connectors, reformulating sentences by keeping the original meaning. In addition, the activities which ask to classify words according to the pronunciation of the final /s/ or /id/. The second part is called ‘Written Expression’, it is basically designed to assess pupils’ competences in writing, where the students are given the opportunity to select one topic to deal with and develop it.

In this investigation we have used as a sample some examination subjects; those of the two literary streams, Philosophy and Foreign Languages streams. The corpus is made up of sixteen subjects, from 2008 to 2015.

## **II.2. Methods**

### **Context Evaluation**

To better tackle the subject raised above, we aim to conduct a context evaluation checklist. Hadley and Mitchell (1995) define evaluation as “*applied research carried out to make or support decisions regarding one or more service programs*” (Shadish, 1994: 48) quoted in (Donna M. Mertens, 2010: 51). In education, evaluation is used to check the efficiency and quality of the teaching and assessing materials, as well as, the teaching methods. The definition was reinforced by Daniel Stufflebeam (1971) who defined it as a technique “*designed to assess and evaluate a program or material to sort out its strengths and weaknesses*” (cited in Nunan, 1992:193). Thus, evaluation is used to judge and determine

the positive and negative aspects of the instructional materials which are used either by teachers or students. When evaluating, researchers should take into consideration the context where the research is conducted as it is explained in the following quotation:

In evaluation, politics and science are inherently intertwined. Evaluations are conducted on the merit and worth of programs in the public domain, which are themselves responses to prioritized individual and community needs that resulted from political decisions (Shadish, 1994: 48 quoted in Donna M. Mertens, 2010: 53).

From the quotation, we understand that evaluation is influenced by the context where it is conducted, the instructional goals of each society and what its learners need, determine the methods and the materials that are going to be used in education. Thus, evaluation should be flexible and take into consideration the societal and cultural factors. The Algerian BAC examinations are also context dependent; the testing approach and the content of the exams are determined by the ministry of education, to go with and suit the needs as well as the goals from learning and assessing specific subjects.

As far as our work is concerned, the context evaluation had been adopted in order to answer the issue of inference in the Algerian BAC examinations. Context evaluation has as a main function to sort out the positive and the negative points of the Algerian English BAC exams in relation to inference.

As regards the approach to adopt in our study Quellmalz framework of thinking skill has been adopted. To be more explicit, we are going to associate the six levels of Quellmalz' framework of thinking skills with the BAC subjects, the levels are; recall, analysis, comparison, inference and evaluation. (For more details of Quellmalz taxonomy refer to review of the literature).

All the questions included in the subjects are going to be analyzed to sort out to which level they belong to. Also, the percentages of inference questions in comparison to others are

going to be identified and this in order to know if inference is taken into consideration and what is its place within the Algerian BAC exams. After that, we are going to divide the inference questions into its types. The results are going to be presented in form of statistics and histograms. In addition, our task entails the representation of the number of inference questions found in each subject, then the percentage of inference in comparison to the other levels, all followed by interpretations. Quellmalz taxonomy and the levels as well as the types of inference have already been explained in the review of the literature where we have attempted to examine the main features of the taxonomy.

## **Conclusion**

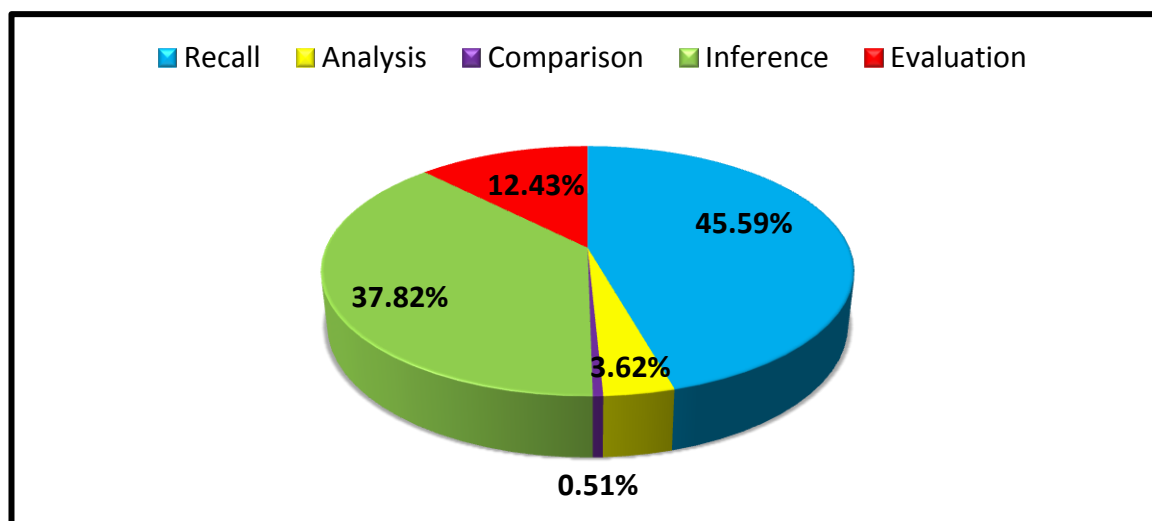
In this chapter we have attempted to explain the plan of the research, the methods and the materials that have been used to better tackle our issue. Thus, in the first part we have described the corpus that we intend to analyse and examine, that is, the Algerian English BAC examinations. In the second part of the section we have provided with definitions related to context evaluation.

## **CHAPTER THREE: RESULTS AND DISCUSSION**

### **III. 1. Results**

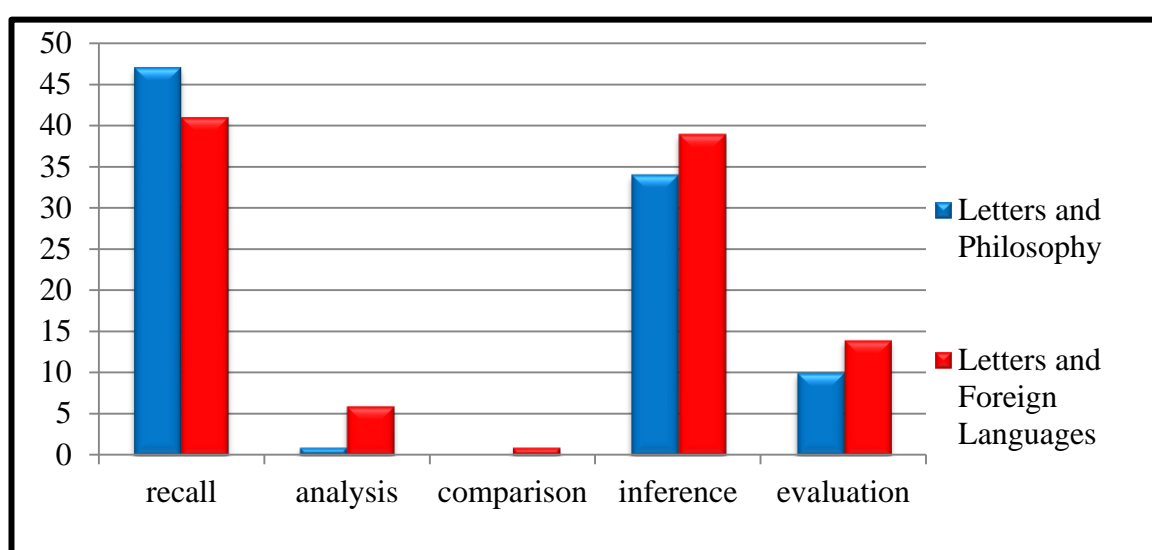
#### **Introduction**

After analyzing the sixteen (16) subjects and sorted out the questions concerned with the levels of Quellmalz taxonomy that are; “recall”, “analysis”, “comparison”, “inference”, and “evaluation”, the present part of the research is concerned with the presentation of the findings that is going to follow the mixed-research method by using statistics, numbers and percentages followed by interpretations. First of all, we calculated manually the number and percentage of each of the five levels in each subject. To answer the second research question, we calculated the percentage of inference in all the subjects we analyzed. Then, we compared the rate of inference to that of other levels of the taxonomy to provide an answer to the last research question concerned with the place of inference in the Algerian BAC exams of English. The results are presented in histograms and pie charts (see **Appendix A**).



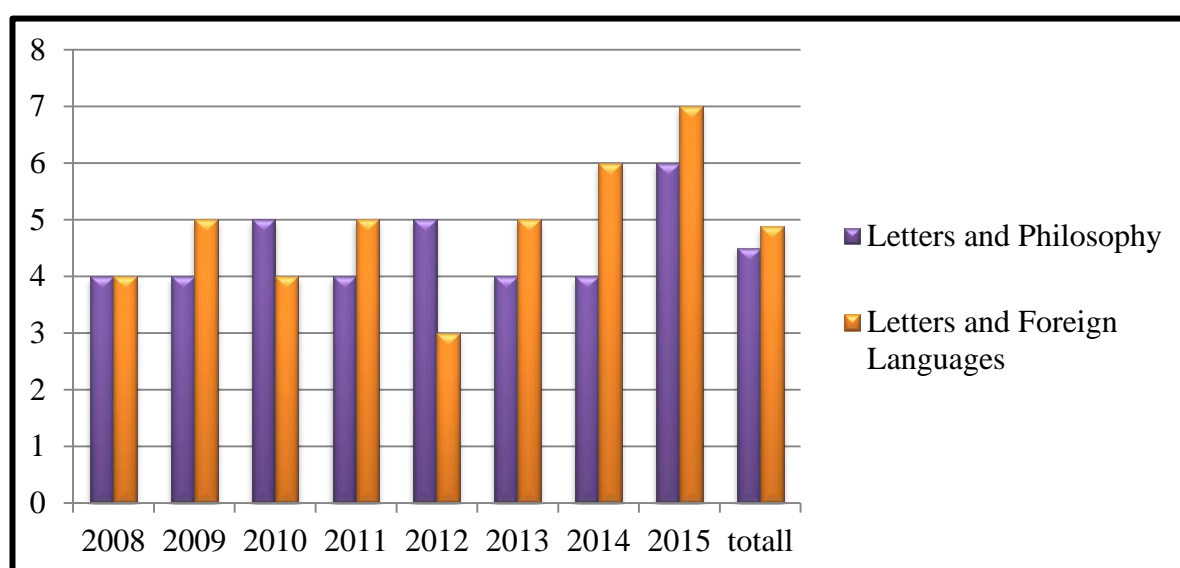
**Figure 1: Levels of Quellmalz Taxonomy within the English BAC Exams**

From the above pie chart, we deduce that the majority levels of Quellmalz taxonomy are included in BAC tests activities. Recall and inference are highly included in BAC exams; recall is about **45.59%** and inference is about **37.82%**. Second, we have noticed that evaluation and analysis are also included but with low percentage comparing with recall and inference, evaluation is **12.43%**, and analysis represents **3.62%**. Then, comparison is the lowest percentage with **0.51%**; because only one question is concerned with comparison.



**Figure 2: The Incorporation of Quellmalz' Taxonomy in the Two Streams**

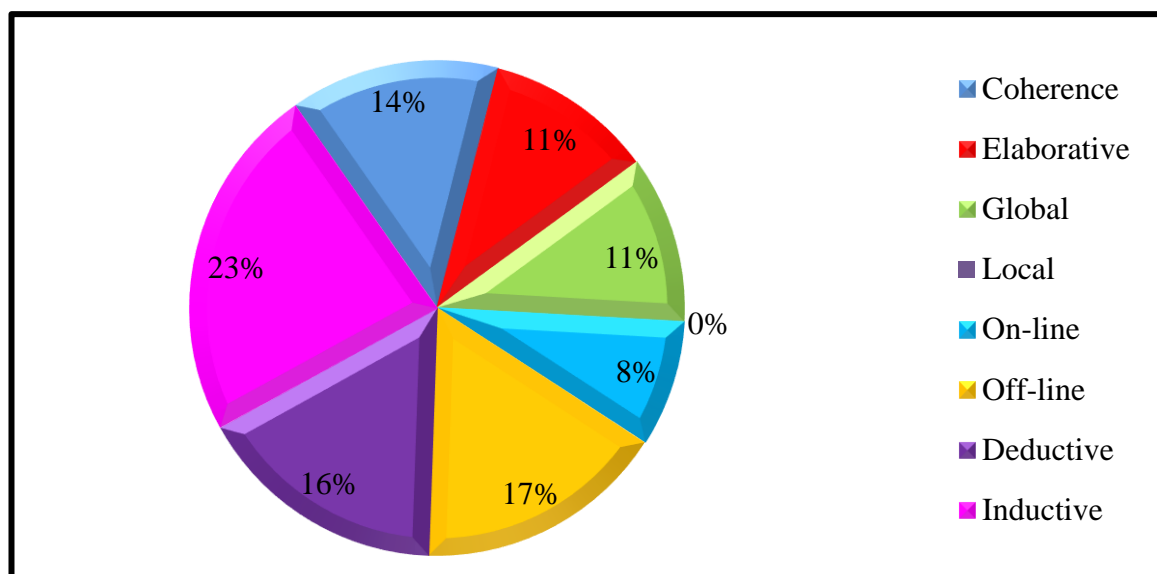
The distribution of the levels in the two streams is unequal. For the majority of the levels, the results show that their inclusion in the Foreign Languages stream is more prevalent than in the Letters and Philosophy. Except for recall level, where the highest inclusion is found in the Letters and Philosophy stream. Concerning comparison level, one question was found in the Foreign Languages stream and no one is found in the Letters and Philosophy stream.



**Figure 3: Inference in English BAC Exams**

In this part we are going to answer the second question which is raised in the issue, that of inclusion of inference in English BAC exams. From the bar chart, we notice that all BAC exams deal and include questions that necessitate the use of inference as a cognitive skill. However, from the bar chart it can be noticed that the number of inference questions is not the same in all the analyzed subjects, the high percentage is found in the subjects of Letters and Foreign Languages option, in the years 2014 and 2015 where we found seven inference questions. And the lowest number is found in 2012 option Letters and Foreign Languages with only three.





**Figure 4: Types of Inference within the Algerian BAC Subjects of English**

From the above chart pies, we notice that all the types of inference are included in the BAC subjects that we have analyzed except for Local inferences that are totally absent. In addition, we notice that inductive inference takes 23%, so they are the more included, while On-line inferences takes only 8%.

## Conclusion

In this section, we presented the results of the work by calculating the number and the percentage of each level of Quellmalz taxonomy. An attempt has been made to answer the research questions raised in the issue, the first was about the levels of Quellmalz' taxonomy included in the BAC examination subjects, whether the inference level is included in the BAC exams and the place that it takes. The results showed that all the levels of Quellmalz taxonomy are included in the Algerian BAC exams and that inference is taken into consideration.

## III.2. Discussion of the Findings

### Introduction

After having presented the results in the previous part, this section is devoted to the discussion, interpretation, and explanation of the findings. In this discussion part we are going to refer to the review of literature and Quellmalz' taxonomy that we have already developed. Accordingly, we are going to examine and study the Algerian BAC subjects of English with relation to Quellmalz' taxonomy of thinking skills; that is, the place of every cognitive skill in the BAC exams. Finally, stress is to be put on the inference level and its types to sort out whether they are incorporated in the English BAC examination papers.

#### III.2.1. Assessing Recall in the Algerian BAC Examinations

“Recall” is the equivalent of “knowledge” and “comprehension” in Bloom's taxonomy. The questions which necessitate the use of “recall” skill are highly included in the Algerian BAC exams of English; about **45.59%** and they are found in all the subjects we analyzed. The questions which represent “recall” skill are, for example, that which ask the learners to answer questions about texts as it is shown in the following example:

##### **3. Answer the following questions according to the text.**

- a. Do children pay for transportation in public schools in Guatemala?*
- b. What does NDG offer to encourage poor families to send their children to school?*
- c. What is the role of the NDG social workers?*

BAC exam in Letters and Philosophy (June 2015)

This activity asks the learners to answer with information that has already been provided in the text. It needs to understand the text and remember the information provided in. The first question in the exercise is a yes/no question to which the students sometimes answer only by guessing, that is, without understanding and without going back to the text and without

making much effort. Concerning the two other questions, they are ‘WH’ questions. The answers to these two questions are available in the text and they do not require deep understanding to produce the answer. Said in another way, the students are required to read between the lines in order to figure out the unsaid and the invisible meaning.

The students can also be asked to paraphrase or just rewrite the information as it has been stated in the passage. For example, the following question asks to write some sentences in a different way without losing the original meaning:

**3. Rewrite the sentence (b) so that it means the same as sentence (a).**

1. a. *Governments should interfere to ban bad practices in schools.*  
b. *It's high time.....*
2. a. *If strict measures are not taken, the educational system will deteriorate.*  
b. *Unless.....*
3. a. *I have a strong desire that all governments will ban cigarettes production.*  
b. *I wish.....*

BAC exam in Letters and Foreign Languages (June 2014)

“Recall” necessitates having previous background knowledge, for example knowledge of grammar and vocabulary, as it is the case in the above exercise, because BAC exams are achievement tests, and the students are tested directly on what they had been taught during the courses. They surely had been taught grammar lessons where they were given, for example, the rules of use of the conjunction “Unless”. Hence, the students can do the exercise relying on remembrance of grammatical rules. The next example is about finding synonyms for words:

**1. Find in the text words that are closest in meaning to the following:**

- a. life (§1) b. spread (§2) c. rich (§ 3) d. unluckily (§ 3)**

BAC exam in Letters and philosophy (June 2012)

In this activity the students are asked to find synonyms of words, the synonyms have already been provided in the text. The students have been helped by mentioning the number of the paragraph where they could find the answer. Even if the learners need to have some background knowledge about the meaning of the words, it would be preferable if the students have not been mentioned the paragraph where the synonyms exist. That is to say, to avoid making the activity too mechanical as well as guess work.

Assessing “recall” skill is beneficial in demonstrating the students’ ability of understanding, remembering and recalling information. Also, because thinking cannot start in vacuum without having in mind the necessary information and knowledge which permits to analyze, compare or evaluate. However, the “recall” level is considered as the lowest critical level in both Bloom’s and Quellmalz’ taxonomies of instructional objectives. Besides, the excessive inclusion of recall questions in the English BAC exams is not really promising. Said differently, the students are in need of activities that encourage them to develop the other cognitive abilities and push them to produce and criticize ideas. That is, the aim of teaching and assessing critical thinking skills needs consideration in the English BAC exams. Thus, the distribution of the skills should be in balance.

Having discussed the implementation of the “recall” skill in the English BAC exams, the next paragraphs are devoted to the discussion of the “analysis” skill. Thus, explanations and illustrations are going to be provided.

### **III.2.2. Assessing Analysis in the Algerian BAC Examinations of English**

Assessing analysis is providing questions and activities which ask the students to break down whole units into constituent parts and categories. The Questions that necessitate analysis are not included in a large number in the English BAC exams; it is just about **3.62%**. The example that follows shows a typical kind of analysis questions used in the BAC exams:

**4. Classify the following words according to the number of their syllables.**

**a-** desert      **b-** mounds      **c-** difficult      **d-** another

One syllable	Two syllables	Three syllables

BAC exam in Letters and Foreign Languages (June 2011)

The previous illustration falls into the category of classical analysis, it asks the students to break down and analyze the number of syllables of each word. After that, they are supposed to classify them according to specific phonetic features. This type of questions is found in all the subjects. It is not a complicated task because only by counting the number of the vowels in each word the students can come to conclusions about the number of the syllables and provide answers to the question. The questions that students really need in order to promote the use of analysis skill are that which ask them to break down texts into small parts, finding the general ideas, the theme and identify the message that the writer of the text supports and wants to convey.

It is important to note that the lack of inclusion of this skill in BAC exams is not reassuring, because it is an important skill which permits the students to manipulate and handle information and background knowledge. Thus, giving the importance to analysis in the BAC exams is indispensable since the candidates are going to benefit from analysis skill and use it in their real-life situations. In short, analysis should be stressed in the BAC exams of English because it deals with critical thinking which is one the mostly required skills in this century. At this level, it has been pointed out that analysis is connected to critical thinking which is *“the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts”* (Sternberg, 1986:).

### III.2.3. Assessing Comparison in the Algerian English BAC Examinations

Comparison comes from the verb to compare; it is to measure up, find similarities and differences between things. The percentage of the inclusion of comparison in the Algerian BAC exams of English is **0.51%**. Indeed, in the subjects we analyzed it was found that only one question asks the students to compare and sort out the differences between two things, as it is shown in the following example:

***Topic One: Use the following notes to write a composition of 100 to 120 words on: The differences between state schools and private schools.***

***State schools:***

- *Restricted to primary, middle and secondary sectors*
- *Free of charge*
- *Crowded classes/hard to control*

***Private schools:***

- *Expensive/pay fees*
- *Less accessible/low income families*
- *Small classes/ easy to control*

BAC exam in Letters and Philosophy (June 2013)

The students are asked to compare between the state schools and private schools and sort out the differences between them. In this activity, the test-takers are only expected to develop the points they have been given in form of lists. This is a complex comparison; because it requires an examination of two or more extensive qualities and aspects of both state and private schools. Our findings showed that “**comparison**” is not taken into consideration in designing English BAC exams in Algeria despite the place that it takes in critical thinking.

The idea is that in doing activities about comparison, learners are not going to recall exactly the information they have in their minds, but they should be able show that they can really understand and analyze concepts and ideas. Also, comparison will determine if the learners are able to use their knowledge in different contexts.

### III.2.4. Assessing Evaluation in the Algerian English BAC Examinations

Evaluation is making a judgment about something, or determining its significance. In the official examinations the candidates can be asked to do some evaluation activities which consist of criticizing and evaluating the quality or truth of something. The percentage of the inclusion of evaluation in the analyzed English BAC exams is about **12.43%**. The following activity is an example:

**2.      *Say whether the following statements are true or false according to the text***

- a) UNICEF is present in many countries to assist children.*
- b) UNICEF depends on its own fund to help children.*
- c) Most of the children that do not go to school are boys.*
- d) Poverty is one of the obstacles to children's schooling.*

BAC Exam Letters and Philosophy (June 2010)

In this exercise the candidates are asked to check the validity and the correctness of the sentences and say whether they are true or false. The students are going to evaluate the precision and the certainty of these statements according to the text. Nevertheless, this activity will not allow the students to develop their critical thinking abilities; because the students have not been called on to justify their answers by providing evidence. It is worth to mention that the majority of the evaluation activities in the BAC exams ask the students to evaluate the correctness of sentences according to the text and not according to what they have already learned in the classroom or by experience. In addition, students generally answer by guessing. Therefore, this may have bad effects on the learners' performance and achievements. The evidence is that guessing contradicts the principles of thinking and reasoning which are two important principles in the field of instruction and education.

The evaluation questions are to be found in the English BAC exams but unfortunately they are not found in huge number in the analyzed BAC subjects. They are activities which ask to determine the positive and negative points of something, or the extent to which

something can be indispensable and helpful or by the opposite unnecessary or harmful, as it is the case in the following example:

**Topic Two:** *The use of the Internet by children and teenagers pose an ethical dilemma. Write a paragraph of about 120 to 150 words in which you state arguments to support this statement.*

BAC Exam in Letters and Foreign Languages (June 2015)

From this we conclude that despite the importance of evaluation that is placed as the highest level in both Quellmalz' framework and in Bloom's taxonomy, in the BAC exams of English language, the activities are included with low rates and small percentage. This means that the test designers have not considered the valuable place of evaluation in such official examinations. In fact, they insert only one or two single evaluation questions in each subject, and this happens nearly every year. Such a situation may lead to lower results in the successfulness of education in Algeria.

Interestingly, it is necessary to draw attention to the fact that being able to evaluate is one of the tenets of critical thinking that education should strive for. Thus providing the students with activities dealing with analysis is necessary and vital. In this context it has been stated by Brown that *"we cannot expect children to progress in the development of thinking unless we give them something to think about"* (Brown. A., 1997: 52).

BAC examinations are formal and official assessments, the subjects are prepared before by specialists in the field of language assessment. And before starting to design the exams, they should determine the objectives and the assessment goals. Also, assessing the creativity of students and their critical thinking should be one of the targeted objectives. The BAC exams designers should pay attention to all the levels from the lowest to the highest and complex one which is that of evaluation. As a result, the selection of the texts, tasks and activities are not in an effective and relevant way.



Having dealt with the discussion of the results of the skills namely “recall”, “analysis” “comparison”, and “evaluation” in the English BAC exams, the following paragraphs focus on the discussion of the results of “inference”. Consequently, illustrations and details are necessary.

### **III.2.5. Assessing Inference in the Algerian English BAC Examinations**

The findings show that the inclusion of “inference” within BAC examinations is prevalent and widespread. Indeed, it is the second level which is most used after “recall” as the third figure in the results section shows (see page: 30). To be clearer, inference takes an important place with the percentage of **38%** in comparison to the other levels which represent **62%** of the English BAC examinations activities. This highlights the significance of this thinking skill within the Algerian BAC examinations of English. In addition, BAC designers consider the vital and the important role that inference engages in the real-life situations of students. We mean that BAC questions offer the opportunity for the students to engage and infer the hidden meaning by considering their previous knowledge and personal experiences. Moreover, it helps the students to develop self-reliance. Therefore, it is the first step for reaching good and satisfactory outcomes in learning the basic and fundamental processes of thinking and reasoning.

It is of interest to point out that there are different kinds of inference that we have already mentioned in the review of the literature. Most of the types are included in the English BAC examinations. This may mean that BAC designers are aware of the importance of various benefits of each type of inference in developing the cognitive abilities of the students. Below, is an example of inference question found in the analyzed BAC exam:

#### ***4. What or who the underlined words refer to in the text?***

***a. They (§2)   b. The city (§2)   c. he (§3)   d. it (§4)***

BAC exam in Letters and Foreign Languages (June 2011)

This activity that is usually found in the ‘*Reading Comprehension*’ part assesses the students’ understanding of the text. The students are supposed to find the words or the expressions that the words given in the list refer to. This type of activities is widely incorporated in the English BAC exams. They are found in nearly all the subjects we analyzed, and they are called coherence inferences which are used to create and achieve the textual unity of the text by relating the ideas together and avoiding repetition. In this kind of tasks, inference and reference are seen as synonymous, because reference is called simple inference.

As it has been said before, nearly all the subjects contain this type of exercises due to the importance of coherence inferences in developing learners’ understanding and comprehension in reading. But, this is a simple inference, that is, it does not need much effort to be recognized. Also, the answer is available in the text and the learners are not supposed to create answers intelligently or engage in a deep reasoning to support their answers with arguments.

Another type of inference question included in the BAC examinations is the ‘gap filling’. The learners are given a list of words and asked to use them to fill in a passage, as it is shown in the following example:

**4. Fill in the gaps with the following words:**

***Nation education teach their free subjects***

*Many nations provide early childhood.....1.....in school. In almost every...2.... elementary. Education is compulsory and ....3.... .In every country, the elementary schools....4....to read and write and to work with numbers. The pupils also learn their country’s customs and....5.....duties as citizens. In most countries, the pupils also study such....6....as geography, history, mathematics and sciences.*

BAC exam Letters and Philosophy (June 2008)

These activities require the learners to concentrate and find how these sentences are related to each other by referring to the general meaning of the passage, and then put each word into the appropriate place. This type of inference is called “*elaborative or gap filling*”

*inferences*". As it was stated by Anne Kipsal "*elaborative inferences help to enrich the unity and logical representation of the text*" (2008: 2). So, it is a good technique that can be used to assess the learners' logical reasoning, and a way to help learners to learn how to rely on their experiences and previous general knowledge to deduce meanings of texts. For instance, in the example cited above, in the sixth gap, the students need to find a general term which covers the words 'geography', 'history', 'mathematics' and 'sciences', thus, they will come to a conclusion that the word 'subject' is the most appropriate. In the fourth gap '*, the elementary schools....4....to read and write*', 'elementary schools' is a noun phrase and 'to read and write' is a complement. Thus, according to their previous knowledge about sentence structure; the students need a verb in order to relate the two parts, and the only verb provided in the list is 'teach'. This activity helps the learners to make use of their background knowledge and apply it in different situations.

The third type of inference that is widely integrated in the English BAC exams is the "global inference" which helps to infer the general ideas and the theme of a text, as it is going to be illustrated in the following exercise:

**5. Choose a title that best suit the reading passage.**

- |   |                                       |
|---|---------------------------------------|
| <b>a. Education in the United Kingdom</b> | <b>b. Mixed Sex Schools in the UK</b> |
| <b>c. Public Schools</b>                  | <b>d. Free Education</b>              |

BAC exam Letters and Foreign Languages (June 2008)

In such kind of activities, the test-takers are invited to read the text in order to be able to infer what the text is speaking about and to know the general ideas related to it. The candidates are given a list of choices to choose among them, they are generally included in the '*Reading Comprehension*' part, since it assesses students' understanding of the text. However, it is necessary to draw attention to the point that in order to ameliorate students' performances on making logical conclusions, they should be required to answer the questions without

giving them any support. The question also belongs to the global inference; it does not ask the students to infer the general idea of the text by themselves. Instead, the students have been provided with a list from which they can select a suitable title for the text. The problem in this situation is the fact that the activity is related to guess work; that is, it is possible that the students manage to give the suitable title to the text without reading the text at all. Thus, the solution is to leave the students create the answers by themselves and the tradition of spoon feeding the students should finish.

The degree of students' comprehension depends on their background knowledge on lexis and vocabulary, because it is a type of 'inductive inference' where learners reason from specific to general. The students have to understand and relate the details together to draw generalizations. So, understanding and decoding the meaning of the words and the sentences leads to understanding the text which will allow them to make a successful inferring. Then, the students become able to grasp the author's meaning and get a whole and final map of the text. In the activity mentioned above, the students are going to search in the text for key words to grasp the general idea, then try to relate it to the titles provided in the list and chose the most adequate one. However, it is better to ask direct questions rather than multiple choice questions and ask to sort out the general idea of the text without giving them the possibilities because they can choose it randomly. More importantly, such type of activities pushes the students to become lazy and dependent on what they are given as clues and hints to answer the questions.

Among the activities that take a considerable place in English BAC exams and that we have found in a huge number are those which ask the students to combine sentences using a set of connectors or joining words, either the students have already been provided with or it is up to the them to guess the suitable one, the following example illustrates the case:

**3. Connect each pair of sentences using the connector in brackets. Make changes where necessary.**

a) Governments have made a lot of efforts. They have been unable to stop the import of counterfeit products. (although)

b) Local authorities are encouraging citizens. They want them to be more active. (to)

BAC exam in Letters and Foreign Languages (June 2009)

In this case, the students are required to understand the two sentences and draw a relation between them. They can make ‘on line inferences’ which are drawn automatically during reading. Meanwhile, students should be left to discover the relationship between the two sentences, without giving them the conjunctions between brackets. Or, they could ask them to join the sentences and add the necessary conjunctions so that to express opposition or cause. Another type of inference questions is that which asks the learners to complete a passage without providing any suggestion or help, and it is up to the students to do it like in the activity mentioned below:

**5. Complete the following conversation between A and B.**

A: why do only few children go to school in poor countries?

B: .....

A: Is it the only reason?

B: .....

A: could you give me an example?

B: .....

A: what can we do to help these children to go to school?

B: .....

A: That's good idea.

BAC exam in letters and Foreign languages (June 2008)

As it has been said before, in this type of activities students are more or less free to imagine the situation and provide the appropriate answers to the questions, they can also be given the answers instead of the questions. Then, the students are less independent. They are supposed to read the whole passage, understand it, after that, they are going to infer what can be missing in the sentences to complete the meaning of the whole. The type of inference to be used in this case is the ‘off line inference’, this means, the conclusions are drawn intentionally

after having read a whole passage to infer its meaning by using the reasoning strategies. These sorts of activities are regularly present in BAC exams, and it is something positive, since they are necessary to promote the use of critical thinking abilities, relying on the previous knowledge and experience which might lead to satisfactory and good results. The following activity shows the case:

***Topic two:*** *What can be done to fight counterfeiting? Make suggestions.*

BAC exam in Letters and Foreign Languages (June 2009)

This assignment is a written expression that is the last activity that students are required to do. At this stage, the learners are going to make use of their thinking strategies to solve a problem, and make a coherent dissertation regarding ‘bribery and counterfeit’. The students are given a topic that is general and they need to provide specific details concerning that problem. The test-takers in this case are required to pay attention to the choice of words and expressions to use because they should be related to the topic. Written expressions are indirect tests, they test different skills with the same exercise. In addition, the students in written expressions are tested on the content of the dissertation, also, they are tested on the vocabulary they are going to use, the structure and grammar mistakes. This activity is a deductive inference, it can be beneficial to students which are supposed to reason from general to specific, they are given general statement, and they are asked to provide with details and specificities.

It has been noticed that the analysis does not show the inclusion of ‘local inference’ questions, which has to do with the mentioning places and locations in an implicit way. Of course this is not positive, that is, this fact reduces the validity and effectiveness of the exams. More importantly, the type of inference questions included in the Algerian BAC examinations fall in the category of simple inference. Consequently, asking the students to only deal with

simple inferences is not sufficient in developing their critical thinking abilities, namely to create, synthesize, conclude and predict. In other words, the English BAC designers in Algeria should provide the students with multiple activities, varied in the degree of complexity in order to give them the opportunity to test their abilities on the use of their critical thinking skills and reasoning.

When students are asked regularly by teachers or in exams to make inferences, they get use of it. Unfortunately, the questions included in the Algerian BAC exams of English do not really help and encourage the learners to test their intelligence, better understanding the texts and enjoy the reading skills. Moreover, their abilities of comprehending the literary texts, the themes, the intended meanings of texts and making predictions will be limited, since the students are usually provided with the half of the answer and are not let to do the activities alone without support. Instead, they could be asked to predict; how the story will end? Conclude; what can you conclude about...? And apply a rule; what rule applies in this situation? (Stiggins, Rubel and Quellmalz, 1988).

The effective teaching and testing of inference skill is beneficial to language learners. Later on, it will become a tool and the students are going to use it unconsciously in their life to solve real problems, by making use of their background knowledge and experience to draw logical conclusions.

The results revealed that Foreign Languages BAC exams have the highest percentage of the inclusion of the majority of the skills and the same thing for inference. The average of inference questions is about **4.87** questions in one subject, in comparison to Letters and Philosophy with **4.5** questions in one subject. This can be explained in two ways. First, English is the Second Foreign Language (EFL) in Algeria. Thus, in the Foreign Languages stream it is given a great importance; because the focus is on the teaching of foreign

languages such as French, English, Spanish and German. The hours that students attend are numerous in comparison to the Letters and Philosophy stream and the coefficients are highest, that is, students in the Foreign Languages stream are supposed to perform better than the other students in the field of language study.

The second reason is due to the number of the questions included in the subjects which is different in two streams. In the Foreign Languages BAC subjects we find that the first part contains twelve (12) questions, six (6) in the “reading comprehension” and six (6) in the “text exploration” in addition to two (2) questions in the “written expression” where the candidates are asked to answer only one. Thus, the total of the questions that the students are required to respond are thirteen (13) questions in one subject. While in the Letters and Philosophy subjects we find five (5) questions in the “reading comprehension”, five (5) in the “text exploration” in addition to two (2) questions in the “written expressions” with the total of eleven (11) questions. So, it is logical that the highest percentage of “inference” would be found in the Foreign Languages subjects.

Also, the results showed that the number of inference questions included in each year is not fix. In the years from 2008 to 2011 the average of the questions varied from four (4) to five (5) questions in both streams. Starting from 2012 we have noticed that the number was increasing, from only three (3) questions in 2012 to seven (7) questions in 2015 in the Foreign Languages BAC subjects, while for Letters and Philosophy the number is still instable, and the highest number was observed in 2015 with six (6) questions. The number of the inference activities which increased in the previous years can be interpreted by the fact that BAC examination designers are aware of the importance of inference skill and that the successful inferring leads the students to be more engaged in reading; since it allows them to decode the meaning of words, recognizing implications and drawing final conclusions.



## **Conclusion**

The previous part was devoted to the discussion of the results, in which we have analyzed the results obtained after examining the different subjects of the Algerian BAC exams of English from 2008 until 2015 including both streams: Letters and Philosophy and Letters and Foreign Languages. It was found that all Quellmalz' levels of instructional objectives are incorporated in the English BAC exams. Nevertheless, the levels are compromised with different percentage. It was noticed that not all the types of inference mentioned in the review of literature are found in the BAC exams. Despite that, we can say that inference skill takes an important place. In addition to that, it was noticed that the highest number of inference questions are found in the Letters and Foreign Languages stream. The difference in the incorporation of inference skill is due to the difference in the number of questions found in the subjects, that is, the number of the activities that Foreign Languages BAC exam includes is higher. Also, Foreign Languages exam designers pay more attention to the languages than it is the other streams.

## **General Conclusion**

This study was concerned with the field of assessment. More specifically, it aimed at evaluating the Algerian English BAC examinations as testing materials with relation to “inference” as a cognitive skill. The Objective of the study, then, was to figure out whether BAC exam’s designers take into consideration inference skill and include in the English BAC exams activities which necessitate the use of that skill. In order to do so, three research questions have been asked. The first is; what are the levels of Edyż Quellmalz framework assessed in the Algerian BAC exams? The second is; is inference assessed in Algerian BAC examination papers? The third and last research question is; what is the place of inference in BAC examination papers?

In order to answer the research questions, we advanced four hypotheses. The first hypothesis is; not all the levels in Quellmalz taxonomy are included in the Algerian BAC examination subjects. The second hypothesis states that inference is taken into account in the BAC examinations. As regards the third hypothesis, we hypothesized that inference is not taken into account in the BAC examinations. The fourth and the last hypothesis we advanced in our study indicates that inference is not really taken into account in the BAC examinations.

To conduct the study, we analysed sixteen (16) Baccalaureate subjects from the year of 2008 to 2015. Two selected subjects from each year, one from the option of Letters and Foreign Languages and the second from Letters and Philosophy. We used in our research Edyż Quellmalz framework of critical thinking skills which consists of five levels ordered from the less to the most complicated, and they are: “recall”, “analysis”, “comparison”, “inference”, and “evaluation”.

The context evaluation method was followed in order to check whether the levels of Quellmalz taxonomy were included in the subjects that we analysed, and if the Algerian BAC exam designers give importance of assessing the third year secondary school students on inference.

The results showed that all the levels of Quellmalz taxonomy are included in the Algerian BAC exams of English. However, there is an imbalance in the percentages. The percentage of the inclusion of recall level is about **45.59%**. It is the skill which is most assessed in the BAC exams; all the subjects we analysed integrate at least four recall questions, which consist mainly of asking questions about the text, finding synonyms and opposites of words in the text etc. Analysis however is incorporated in a small percentage. In fact, only **3.62%** of the questions are concerned with analysis, the average is from one to two questions in one examination, while in some years they are not at all included. The “comparison” skill is not included in a great number. Indeed, in all the subjects we analysed, only one question is concerned with comparison, the percentage of its incorporation is **0.51%**. Concerning the highest level in Quellmalz taxonomy that is that of evaluation, the percentage of its inclusion is only **12.43%**.

On the one hand, the extensive incorporation of recall level in such official examinations is beneficial to learners because without the previous knowledge and comprehension it will not be possible for them to make use of the other skills. On the other hand, it is not really promising because it goes at the extent of the other levels, such as, comparison, analysis, inference, and evaluation which are more complex, prevalent and necessary, especially for language learners. Thus, there should be a balanced assessment of the skills, and a focus on the more advanced ones and this for the sake of developing the students’ critical thinking capacities in inferring and making judgments.

As regards the inference skill, the percentage of its inclusion is about **37.83%**. Moreover, the majority of inference types are included in the subjects we analysed, and they are; coherence inference with 14%, elaborative inference with 11%, off-line inference with 17%, on-line inference with 8%, deductive with 16% and inductive inference with 23%. All these inferences are found in important percentages in the BAC exams of English and they are nearly included in all the subjects. But, we have noticed the absence of local inferences that are used in mentioning location implicitly.

However, it is important to point out that the types of inference questions found in the BAC subjects of English belong to the category of simple inferences. That is to say, the activities that are frequently found in the BAC subjects of English are those which ask the students to complete conversations, connect between pairs of sentences using appropriate connectors, choosing a title for a text and what the text is speaking about. In addition to that, the majority of the questions offer the students some support in terms of hints and clues. This situation is to be qualified as being negative since the students have not been given the opportunity to think and get the complete answers by themselves. Accordingly, the BAC designers of English subjects should vary the activities to promote the effective use of inference skill and the higher order thinking skills by students. Students then will benefit from the use of such skills, in recognizing implementations, drawing logical conclusions by associating their background knowledge and experiences.

The incorporation of inference skill is shown to be highest in the Foreign Languages stream, with the average of **4.8** questions in one subject in comparison to Letters and Foreign Languages with **4.5** questions in the subject. On the one hand, this is due to the place that English language has in Letters and Foreign Languages stream, as the name shows; they focus and give priority to the teaching and learning of foreign languages such as French, English,

Spanish and German. So, Foreign Languages students are required to have better competencies and performances in this field. On the other hand, it is due to the fact that the number of questions that Foreign Languages BAC subject contain are numerous in comparison to the other stream. In fact, the first part in the majority of the subjects contains twelve obligatory questions, while, the Letters and Philosophy subjects contain ten questions. So, it is logical that the highest percentage would be found in the Foreign Languages stream.

Thus, the conclusion to be drawn is that all the levels in Quellmalz Taxonomy are included in the Algerian English BAC exams. This demonstrates that the first hypothesis was infirmed and the second hypothesis is confirmed because the inference skill is considerably incorporated in the subjects and takes an important place in the Algerian BAC examinations of English.

### **Suggestions to Improve the BAC Exams of English**

The following are suggestions to improve the BAC examinations of English in Algeria:

1. It is important for the designers of English BAC examinations to stress activities that require deep understanding and critical thinking.
2. The implementation of activities dealing with the five levels of Quellmalz taxonomy in the BAC exams of English in a balanced way is required.
3. BAC exams should include activities turning around complex inferences and not only simple inferences.
4. Because BAC exams are official and national examinations they are, thus, intended to prepare the students to use their cognitive skills such as reasoning, intelligence and creativity.
5. Activities that involve guess work should be omitted in the English BAC exams.

6. Instead of providing the students with hints, the students should be given the opportunity to answer the questions themselves.
7. The implementation of activities that meet the principles of Competency Based Approach to Language Teaching in the English BAC examinations needs to be taken into account.

Finally, we hope that we have contributed to the field of research in general and to that of testing cognitive skills especially inference in the BAC exams in Algeria in particular. Also, we hope that our research will open doors to other students to investigate the field of testing and assessment of critical thinking skills. Our corpus was limited to the literary streams BAC examinations, thus, the investigation of the assessment of Inference or other critical thinking skills in the BAC examinations of the other streams would probably lead to different results. In addition, trying to investigate the formative assessment of critical thinking skills would be interesting.

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# Appendices

## Appendix A

BAC 2015

Streams	Activity Number	Description	The Corresponding Level in Quellmalz Taxonomy
<b>Letters and Philosophy</b>	1	Reading Comprehension	Deductive Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Off-line Inference
	5	Reading Comprehension	Coherence Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	Recall
	9	Text Exploration	Recall
	10	Text Exploration	Elaborative Inference
	11	Written expression	Evaluation
	12	Written expression	Recall
<b>Letters and Foreign Languages</b>	1	Reading Comprehension	Deductive Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Off-line Inference
	4	Reading Comprehension	Recall
	5	Reading Comprehension	Coherence Inference
	6	Reading Comprehension	Global Inference
	7	Text Exploration	Inductive Inference
	8	Text Exploration	Recall
	9	Text Exploration	Inductive Inference
	10	Text Exploration	Recall
	11	Text Exploration	Off-line Inference
	12	Text Exploration	Recall
	13	Written expression	Evaluation
	14	Written expression	Evaluation

# BAC 2014

Streams	Activity Number	Description	The Corresponding Level in Quellmalz Taxonomy
<b>Letters and Philosophy</b>	1	Reading Comprehension	Recall
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Off-line Inference
	4	Reading Comprehension	Recall
	5	Reading Comprehension	Coherence Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	Recall
	9	Text Exploration	Recall
	10	Text Exploration	Inductive Inference
	11	Written expression	Inductive Inference
	12	Written expression	Recall
<b>Letters and Foreign Languages</b>	1	Reading Comprehension	Evaluation
	2	Reading Comprehension	Recall
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Deductive Inference
	5	Reading Comprehension	Coherence Inference
	6	Reading Comprehension	Global Inference
	7	Text Exploration	Recall
	8	Text Exploration	Recall
	9	Text Exploration	Recall
	10	Text Exploration	Inductive Inference
	11	Text Exploration	Analysis
	12	Text Exploration	Inductive Inference
	13	Written expression	Inductive Inference
	14	Written expression	Evaluation

## BAC 2013

<b>Streams</b>	<b>Activity Number</b>	<b>Description</b>	<b>The Corresponding Level in Quellmalz Taxonomy</b>
<b>Letters and Philosophy</b>	1	Reading Comprehension	Deductive Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Deductive Inference
	4	Reading Comprehension	Recall
	5	Reading Comprehension	Global Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	Recall
	9	Text Exploration	Recall
	10	Text Exploration	Elaborative Inference
	11	Written expression	Comparison
	12	Written expression	Recall
<b>Letters and Foreign Languages</b>	1	Reading Comprehension	Deductive Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Off-line Inference
	5	Reading Comprehension	Recall
	6	Reading Comprehension	Coherence Inference
	7	Text Exploration	Inductive Inference
	8	Text Exploration	Analysis
	9	Text Exploration	Recall
	10	Text Exploration	Analysis
	11	Text Exploration	Elaborative Inference
	12	Written expression	Recall
	13	Written expression	Evaluation

## BAC 2012

Streams	Activity Number	Description	The Corresponding Level in Quellmalz Taxonomy
<b>Letters and Philosophy</b>	1	Reading Comprehension	Deductive Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Coherence Inference
	5	Reading Comprehension	Inductive Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	On-line Inference
	9	Text Exploration	Recall
	10	Text Exploration	Off-line Inference
	11	Written expression	Recall
	12	Written expression	Evaluation
<b>Letters and Foreign Languages</b>	1	Reading Comprehension	Evaluation
	2	Reading Comprehension	Recall
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Inductive Inference
	5	Reading Comprehension	Global Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	Recall
	9	Text Exploration	Analysis
	10	Text Exploration	Elaborative Inference
	11	Written expression	Recall
	12	Written expression	Evaluation

## BAC 2011

<b>Streams</b>	<b>Activity Number</b>	<b>Description</b>	<b>The Corresponding Level in Quellmalz Taxonomy</b>
<b>Letters and Philosophy</b>	1	Reading Comprehension	Evaluation
	2	Reading Comprehension	Off-line Inference
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Coherence Inference
	5	Text Exploration	Recall
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	Recall
	9	Text Exploration	Elaborative Inference
	10	Written expression	Inductive Inference
	11	Written expression	Recall
<b>Letters and Foreign Languages</b>	1	Reading Comprehension	Evaluation
	2	Reading Comprehension	Off-line Inference
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Coherence Inference
	5	Reading Comprehension	Inductive Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	On-line Inference
	9	Text Exploration	Analysis
	10	Text Exploration	Inductive Inference
	11	Written expression	Recall
	12	Written expression	Evaluation



## BAC 2010

<b>Streams</b>	<b>Activity Number</b>	<b>Description</b>	<b>The Corresponding Level in Quellmalz Taxonomy</b>
<b>Letters and Philosophy</b>	1	Reading Comprehension	Global Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Coherence Inference
	4	Reading Comprehension	Off-line Inference
	5	Reading Comprehension	Recall
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	Recall
	9	Text Exploration	Inductive Inference
	10	Text Exploration	Recall
	11	Written expression	Inductive Inference
	12	Written expression	Recall
<b>Letters and Foreign Languages</b>	1	Reading Comprehension	Global Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Analysis
	4	Reading Comprehension	Recall
	5	Reading Comprehension	Off-line Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	Inductive Inference
	9	Text Exploration	Recall
	10	Text Exploration	Off-line Inference
	11	Text Exploration	Recall
	12	Written expression	Recall
	13	Written expression	Evaluation

## BAC 2009

<b>Streams</b>	<b>Activity Number</b>	<b>Description</b>	<b>The Corresponding Level in Quellmalz Taxonomy</b>
<b>Letters and Philosophy</b>	1	Reading Comprehension	Evaluation
	2	Reading Comprehension	Recall
	3	Reading Comprehension	Coherence Inference
	4	Reading Comprehension	Recall
	5	Reading Comprehension	Deductive Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	On-line Inference
	9	Text Exploration	Elaborative Inference
	10	Text Exploration	Analysis
	11	Written expression	Recall
	12	Written expression	Recall
<b>Letters and Foreign Languages</b>	1	Reading Comprehension	Deductive Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Inductive Inference
	5	Reading Comprehension	Global Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	On-line Inference
	9	Text Exploration	Recall
	10	Text Exploration	Elaborative Inference
	11	Written expression	Recall
	12	Written expression	Recall

# BAC 2008

Streams	Activity Number	Description	The Corresponding Level in Quellmalz Taxonomy
<b>Letters and Philosophy</b>	1	Reading Comprehension	Deductive Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Recall
	4	Reading Comprehension	Recall
	5	Text Exploration	Recall
	6	Text Exploration	Recall
	7	Text Exploration	On-line Inference
	8	Text Exploration	Elaborative Inference
	9	Text Exploration	Recall
	10	Written expression	Deductive Inference
	11	Written expression	Recall
<b>Letters and Foreign Languages</b>	1	Reading Comprehension	Deductive Inference
	2	Reading Comprehension	Evaluation
	3	Reading Comprehension	Analysis
	4	Reading Comprehension	Recall
	5	Reading Comprehension	Global Inference
	6	Text Exploration	Recall
	7	Text Exploration	Recall
	8	Text Exploration	On-line Inference
	9	Text Exploration	Recall
	10	Text Exploration	Off-line Inference
	11	Written expression	Recall
	12	Written expression	Recall