

***Creative Problem Solving in the Algerian EFL
Baccalaureate Exams: An Evaluation***

**حل المشكلات الإبداعية في إمتحانات البكالوريا الجزائري في اللّغة الإنجليزية
كلغة أجنبية: تقييم**

AOUINE Akli *
Mouloud Mammeri University Tizi-ouzou,
Algeria
aklisami5@yahoo.fr

Pr.FODIL Sadek
Mouloud Mammeri University Tizi-ouzou,
Algeria
Fodilsadek@hotmail.com

Abstract :	Article info
<p><i>This study aims to evaluate Algerian EFL Baccalaureate Exams (Literature and Foreign Languages stream) from 2017 to 2020 from the standpoint of creative problem solving. The study adopts a framework integrating Guilford's creativity skills (1967) and Quellmalz's reasoning skills (1987). The data are analyzed using spreadsheets. The main findings indicate that there is no focus on creative problem solving in exams. In fact, 83.33% of the exam questions target lower-order thinking skills, and only 16.66% of the questions involve creative problem solving. To improve the examinations with regard to creative problem solving, a set of suggestions are presented.</i></p>	<p>Received :10/06/2021 Accepted :07/09/2021</p>
	<p>Keyword:</p> <ul style="list-style-type: none"> ✓ Evaluation ✓ Algerian EFL BAC Exams ✓ Creative-Problem Solving
المخلص:	معلومات المقال:
<p>تهدف الدراسة الحالية إلى تقييم إمتحانات البكالوريا المصممة في الجزائر بين 2017 و 2020 في اللّغة الإنجليزية كلغة أجنبية لشعبة الأدب واللغات الأجنبية بغية التّحقق ممّا إذا كانت فكرة حل المشكلات الإبداعي قد عُني بها في الإمتحانات. تتبنى الدراسة نموذج يدمج بين مهارات الإبداع لدى جيلفورد (1967) ومهارات التفكير لندكولمانز (1987) ، وقد تم تحليل المعطيات باستخدام جداول البيانات. تشير النتائج الرّئيسية إلى عدم التركيز على حل المشكلات الإبداعي في الإمتحانات. في الواقع 83.33% من أسئلة الإمتحانات تستهدف مهارات التفكير الأدنى، و فقط 16.66% من الأسئلة تتضمن حل المشكلات الإبداعي. لتحسين الإمتحانات فيما يتعلق بحل المشكلات الإبداعي تم تقديم مجموعة من الإقتراحات.</p>	<p>تاريخ الارسل: 2021/06/10 تاريخ القبول: 2021/09/07</p>

❖ **Introduction:** language teaching materials evaluation has received the attention of many researchers (e.g., Cunningsworth, 1984, 1995; Hutchinson and Waters, 1987; Sheldon, 1987; McDonough and Shaw, 1993; Brown, 1995; Tomlinson, 1998, 2003; Mc Grath, 2016). Those authors, drawing on both theory and practice, have provided principles that help effectively develop, adopt, and evaluate teaching materials. The testing materials in the Algerian Secondary Schools tend to emphasize answers that do not trigger students' creative problem-solving potential. However, an effective development of EFL teaching materials implies the necessity to stress higher-level cognitive skills because, as Islam and Mares (2014, p. 90) argue: "encouraging higher-level cognitive skills means adapting materials in such a way as to require students to hypothesize, predict, infer, make connections and associations and visualize." Similarly, Frazier and Juza (2008, p. 183) contend that materials are to be developed to "foster students' critical thinking and problem-solving abilities in addition to their English language proficiency." Consequently, the present study evaluates the EFL Bacculaureate Exams designed for third-year secondary school students in Algeria in relation to creative problem solving. The prime aim of the study is the evaluation of the EFL Bacculaureate Exams designed for third-year secondary school students in Algeria from 2017 to 2020 from the stand point of creative problem solving. The focal aim is to measure whether and to which extent do the items of the exams target and foster creative problem solving. The research supports the idea that the exams should be a reliable assessment tool to be used for getting insights into students' creative abilities. Additionally, the research aims at offering recommendations to improve the cognitive aspect of the exams. The present study addresses the following questions:

- 1/ To what extent is creative problem solving stressed in the Algerian EFL Bacculaureate Exams?
- 2/ Do the exams items involve higher-order thinking skills or they are just simple drills?

To provide answers to the research questions, the following hypotheses are set forth:

- H01:** The EFL Bacculaureate Exams stress creative problem solving and this to a high extent.
- H02:** Yes, the exams items involve higher-order thinking skills and they are challenging.

The present research is an evaluation of testing materials, and it particularly addresses creative problem solving in the Algerian EFL Bacculaureate Exams. In addition, the study is corpus-based and it concerns only **Subject One** of the examinations, since the analysis of more than one subject goes beyond the scope of this paper. Data are obtained from the examinations under evaluation that are national and official exams designed by the Algerian Ministry of Education to assess third-year secondary school students at the end of the year of study in EFL. The exams include two parts. The first part refers to "*Reading Comprehension*", and it includes two sections. The first is called "*Comprehension*", while the second is called "*Text Exploration*". The latter relates to lexis, grammar, phonetics, and other language forms. The second part, named "*Written Expression*", is principally designed to assess the students in writing. The research adopts descriptive statistics and uses Microsoft's Excel. In addition, for data analysis, the research at hand adopts Guilford's creativity skills (1967), and Quellmalz's (1987) reasoning skills, following a constructivist paradigm. Under this paradigm, evaluation is done for the sake of improving the materials stressing the principle that knowledge is to be constructed creatively by the students (Fitzpatrick et al., 2011).

❖ **Literature Review:**

✓ **Evaluation Defined:**Stufflebeam (2002, p. 35) defines evaluation as “a study designed and conducted to assist some audience to assess an object’s merit and worth.”Central to the definition, is ‘assessment’ through which the value of the object under evaluation is determined. Unlike Stufflebeam who defines evaluation without associating it to the term ‘criteria’, Fitzpatrick et al., (2011, p. 7) elucidate: “More broadly, we define evaluation as the identification, clarification, and application of defensible criteria to determine an evaluation object’s value (worth or merit) in relation to those criteria.”The type of evaluation being applied in the present research is ‘post-use evaluation’. In clearer terms, it concerns the evaluation of the EFL Baccalaureate Exams from the stand point of creative problem solving is post-use.

✓ **Materials Evaluation Defined** :According to Tomlinson (2011, p. xiv) materials evaluation is: “The systematic appraisal of the value of materials in relation to their objectives and to the objectives of the learners using them.” In another work, Tomlinson (2003, p. 15) explains that “materials evaluation is a procedure that involves measuring the value (or potential value) of a set of learning materials”. This definition suggests that a set of sound criteria should be followed by the evaluator.The importance of materials evaluation is shown by Hutchinson and Waters, (1987); Nation and Macalister, (2010); and McDonough, (2013). As an illustration, Hutchinson and Waters (1987, pp. 37-38) assert that materials evaluation has a significant impact on teachers’ practices as teachers are in constant need for materials.

❖ **Problem Solving:**

✓ **Definition of a Problem:**The paper adopts Duncker’s definition of a problem. Actually, Karl Duncker (1945, p. 1) opened his monograph, *On Problem Solving*, with the title “Introduction and Formulation of the Problem” where he explains that“a problem arises when a living creature has a goal but does not know how this goal is to be reached. Whenever one cannot go from the given situation to the desired situation simply by action, then there has to be recourse to thinking.”Here, Duncker propounds the view that a problem is not a simple drill that the solver answers merely mechanically. Instead, for Duncker, problems are to be solved through reasoning and deep thinking.

✓ **Problem Solving Defined** :A definition of problem solving that portrays it as a highly distinguished human activity is given by the mathematician Polya (1962, p. ix). Polyaclarifies that “solving a problem means finding a way out of a difficulty, a way around an obstacle, attaining an aim which was not immediately attainable.” A set of key terms such as ‘difficulty’ and ‘obstacle’ are incorporated in Polya’s definition. However, the problem difficulty must not be a real handicap for the students to look for solutions. Accordingly, Delisle (1997, p. 17) points out that “a problem that is too easy or too difficult will not further students’ growth.” This said, to assess students’ problem-solving skills the to-be-solved problems should be considered and checked in terms of difficulty and relevance.

✓ **Creative Problem Solving Defined:**Creative problem solving does not mean asking students insoluble questions. Rather, creative problem solving has to be used to trigger students’ deep thinking and reasoning skills to create solutions to reasonably difficult problems. The idea is that in testing, ‘content validity’ is a foundational criterion that

should be taken into account by test designers (e.g., Bachman, 1990; Alderson, Clapham, and Wall, 1995; Bachman and Palmer, 1996; Hughes, 1996; Brown, 2003) together with motivation (e.g., Lewis and Smith, 1993; Delisle, 1997; Santrock, 2001). Medeiros et al., (2017, p. 26) bearing on Besemer & O'Quinn (1999) and Christaans (2002) define creative problem solving as "the production of high-quality, original, and elegant solutions." Medeiros et al., (2017, p. 26) argue that "creative problem solving requires a series of processes focused on generating and evaluating potential solutions to complex problems." An analysis of the definition reveals that creative problem solving involves a set of processes; meaning that the solution is not immediate and that the problem solver should create it.

- ✓ **Guilford's (1967) Creativity Skills:** Baer and Kaufman (2006, pp. 14-15) observe that "Guilford's (1967) original conceptualization has been retained in current creativity theorizing. However, it is generally sought in the four general categories Guilford posited (fluency, flexibility, originality, and elaboration)". As to the applicability of the four components to creative problem solving (CPS), Isaksen et al. (2011, p. 102) maintain that "These four qualities are important in the generating phase of any of the CPS stages." Building on Amabile (1983) Proctor (2005), and Isaksen, et al. (2011), we provide the following explanations:

(1) **fluency**, the production of large numbers of ideas (Amabile, 1983, p. 22)

(2) **flexibility**, the production of a large variety of ideas (Amabile, 1983, p. 22)

(3) **elaboration**, the ability to add detail to options and to make them richer, fuller, more complete, or more interesting. (Isaksen, et al, 2011, p. 102)

(4) **originality**– uniqueness, novelty, newness, creativeness (new) or innovativeness (improvement of existing) (Proctor, 2005, p. 17)

- ✓ **Quellmalz's Taxonomy:** Moseley et al., (2005, p. 90) clarify that Quellmalz's framework was produced to "help teachers and learners understand the strategies and processes used in problem-solving." This supports our choice of the framework as an approach to use for the investigation of creative problem solving in students' exams. Five stages are incorporated in Quellmalz's Taxonomy: 'Recall' 'Analysis', 'Comparison', 'Inference/Interpretation', and 'Evaluation'. According to Quellmalz (1987, p. 90) the higher-order thinking skills include 'Analysis', 'Comparison', 'Inference/Interpretation', and 'Evaluation'. Moseley et al., (2005, p. 90) explain that the 'Recall' stage deals with lower-order thinking, and it "is a combination of Bloom's categories of knowledge and comprehension."

Quellmalz and Hoskyn (1997, p. 106) explain higher-order cognitive skills as follows:

1. **Analysis** involves dividing a whole into its distinctive elements and understanding the relationship of the parts to the whole.
2. **Comparison** involves identifying similarities and differences and understanding their overall significance.
3. **Inference and interpretation** involve use of various forms of inductive and deductive reasoning to reach a conclusion or solve a problem.
4. **Evaluation** involves making judgments about what to believe or do based on explicit criteria and supporting evidence.

In the present study Guilford's creativity skills and Quellmalz's cognitive levels are used jointly to form an integrated approach. In addition, our analysis will be done from a constructivist perspective positing that knowledge should be actively constructed and not

passively received (Vygotsky, 1978; Brooks and Brooks, 1999; Pritchard and Woollard; 2010).

❖ **Results** :The following tables present the obtained findings through the analysis of the Algerian EFL Baccaalaureate examinations during four consecutive years: 2017, 2018, 2019, and 2020, as to the inclusion of creative problem solving in the exams items. The analysis is done applying Quellmalz’s reasoning skills and Guilford’s creativity skills.

Table 1 displays the results of the analysis of the BAC 2017. The main findings indicate that of the 12 testing items of the exam only 2 (16.66%) relate to problem solving, namely topic one (8.33%) and topic two (8.33%) of the written comprehension. On the one hand, topic one involves ‘inference’ as one of Quellmalz’s reasoning skills, and ‘elaboration’ as one of Guilford's Creativity Skills. On the other hand,topic two involves all the levels of Quellmalz’s taxonomy and all of Guilford's Creativity Skills.

Table1. Results of the Analysis of the Algerian EFL Baccaalaureate of 2017

The Activities		Test Items Total 12	Quellmalz's Levels	Guilford's Creativity Skills	Total Items Involving Creative-Problem Solving 2	Total of creative-problem Solving (16.66%)
Activity One : questions about the Text	Q1	Multiple choice	Recall	0	0	0.00%
	Q2	Fill-in-the lanks	Recall	0	0	0.00%
	Q3	W/H questions	Recall	0	0	0.00%
	Q4	Matching	Recall	0	0	0.00%
	Q5	Multiple choice	Recall	0	0	0.00%
Activity Two Text Exploration	Q1	Matching	Recall	0	0	0.00%
	Q2	Matching	Recall	0	0	0.00%
	Q3	Combination of sentences	Recall	0	0	0.00%
	Q4	Matching	Recall	0	0	0.00%
	Q5	Multiple-choice	Recall	0	0	0.00%
Activity ThreeWritten Expression	Topic One	Essay writing with hints	Inference	Elaboration	1	8.33%
	Topic Two	Essay writing with no hints	Recall, analysis, inference, comparison, and evaluation	Fluency, Flexibility, Elaboration, and originality	1	8.33%

Table 2. Results of the Analysis of the Algerian EFL Baccaulaureate of 2018

The Activities		Test Items	Total 12	Quellmalz's levels	Guilford's Creativity Skills	Total Involving Creative-Problem Solving 2	Items Solving	Total of Creative-problem Solving (16.66%)
Activity One: Questions about the Text	Q1	True/false		Recall	0	0		0.00%
	Q2	Matching		Recall	0	0		0.00%
	Q3	W/H questions		Recall	0	0		0.00%
	Q4	Matching		Recall	0	0		0.00%
	Q5	Short answer items		Recall	0	0		0.00%
Activity Two Text Exploration	Q1	Matching		Recall	0	0		0.00%
	Q2	Fill-in-the blanks		Recall	0	0		0.00%
	Q3	Passive/active voice		Recall	0	0		0.00%
	Q4	Matching		Recall	0	0		0.00%
	Q5	Fill-in-the blanks		Recall	0	0		0.00%
Three Written Expression	Topic One	Essay writing with hints		Inference	Elaboration	1		8.33%
	Topic Two	Essay writing with no hints		Recall, inference, and evaluation	analysis, comparison, Fluency, Elaboration originality	Flexibility, , and 1		8.33%

As it is shown in **table 2** the main findings indicate that creative problem solving in the BAC 2018 represents only 16.66%. That is, only topic one (8.33%) and topic two (16.33%) of the written composition involve creative problem solving.

Table 3. Results of the Analysis of the Algerian EFL Bacallaureate of 2019

The Activities		Test Items	Total 12	Quellmalz's levels	Guilford's Creativity Skills	Total Items Involving Creative-Problem Solving 2	Total of creative-problem Solving (16.66%)
Activity One: Questions about the Text	Q1	Multiple-choice		Recall	0	0	0.00%
	Q2	Matching		Recall	0	0	0.00%
	Q3	W/H questions		Recall	0	0	0.00%
	Q4	Matching		Recall	0	0	0.00%
	Q5	Multiple-choice		Recall	0	0	0.00%
Activity Two: Text Exploration	Q1	Matching		Recall	0	0	0.00%
	Q2	Fill-in-the blanks		Recall	0	0	0.00%
	Q3	Combination of sentences		Recall	0	0	0.00%
	Q4	Matching		Recall	0	0	0.00%
	Q5	Sentence reordering		Recall	0	0	0.00%
Activity Three: Written Expression	Topic One	Essay writing with hints		Inference	Elaboration	1	8.33%
	Topic Two	Essay writing with no hints		Recall, inference, and evaluation	analysis, comparison, Fluency, Elaboration originality	Flexibility, and 1	8.33%

The main results in **table 3** show that creative problem solving is not stressed. In fact, out of the 12 items only 2 items deal with creative problem solving, and this in topic one (8.33%) and topic two (8.33%) of the written composition.

Table 4. Results of the Analysis of the Algerian EFL Bacallaureate of 2020

THE ACTIVITIES	The Activities	Test Items Total 12 Items	Quellmalz's Levels	Guilford's Creativity Skills	Total Items Involving Creative-Problem Solving 2	Total of Creative-problem Solving (16.66%)
Activity One: R Questions about the Text	Q1	Fill-in-the blanks	Recall	0	0	0.00%
	Q2	Sentence ordering	Recall	0	0	0.00%
	Q3	W/H and Yes/No questions	Recall	0	0	0.00%
	Q4	Matching	Recall	0	0	0.00%
	Q5	Multiple-choice	Recall	0	0	0.00%
	Q1	Matching	Recall	0	0	0.00%
	Q2	Completion	Recall	0	0	0.00%
	Q3	Connecting pair of sentences	Recall	0	0	0.00%
	Q4	Matching	Recall	0	0	0.00%
	Q5	Sentence reordering	Recall	0	0	0.00%
Activity Two Text Exploration	Topic One	Essay writing with hints	Inference	Elaboration	1	8.33%
	Topic Two	Essay writing with no hints	Recall, inference, and evaluation	analysis, comparison, Fluency, Elaboration originality	Flexibility, and 1	8.33%

Table 4 shows that the majority of the items of the BAC 2020 do not involve creative problem solving. That is, only two testing items of the exam relate to creative problem solving. The items are topic one (8.33%) and topic two (8.33%) of the written composition. The remaining 10 testing items deal with the lower-order thinking skill ‘recall’, which is included in Quellmalz’s taxonomy.

❖ **Discussion:** our analysis of the Algerian EFL Baccalaureate Exams reveals that in most situations the assessment format used to measure the students' achievements is the selected-response format, dealing with close-ended questions. Indeed, from the results in tables: 1, 2, 3, and 4 one can see that all the questions in the first part *'Reading Comprehension'* and the second part *'Text Exploration'* do not target higher-order thinking skills such as 'analysis' and 'evaluation'. This means that 40 questions out of 48 in the exams from 2017 to 2020 do not trigger students' creative abilities to create answers to new and challenging language problems. This point is also supported by Berry (2008, p. 69) who holds that 'multiple choice', 'true-false', 'matching', 'short answer' are not favorable for assessing "complex learning". This is because the students' answers can be provided by making recourse only to lower-cognitive skills, mainly recall, and comprehension, which are the dominant levels in the exams. This means that the right answers that the students provide, imply that the students have mastered the simple language details, but have probably no knowledge of the ideas and processes that are foundational in creative problem solving. Argumentatively, the students' knowledge makes little sense, unless it is employed for showing the essential content and skills that are better indicators of valuable instruction, which requires the students to execute their cognitive faculties constructively and creatively.

The findings show that all the questions included in the first and the second parts of the exams, do not involve students in creative problem solving. None of the levels relating to Quellmalz's reasoning skills is included in the items. In addition, Guilford's Creativity Skills are not stressed. Indeed, this implies that 40(83.3%) of the assessment items of the exams do not involve creative problem solving, and only 8 (16.66%) of the exams questions encourage creative problem solving. Accordingly, the exams reflect traditional ways of assessment, stressing selected response formats and recall of knowledge, which cannot be considered sufficient for allowing students to display their creative abilities, and deep thinking, or simply skills needed to cope with the complexities of the 21st century. At this stage, it is useful to make reference to Wiggins (1993, p. 9) who articulates that "a one-shot, secure test in which the student is required neither to produce a work-product nor to engage in discussion is unlikely to tell us whether the student has understanding or not." Evidence that students have understanding does mean that the students are able to produce knowledge analytically and synthetically. Testing which does not help uncover students' abilities to perform creatively and argumentatively, it is likely to impede the process of transforming students to effective intellectuals and autonomous thinkers, mainly when it comes to speak about national and official exams.

It is to be mentioned that neglecting problem solving in the exams is neglecting one of the most important skills that schools should encourage. In this vein, Jonassen (2011, p. 63) affirms that "problem solving is generally regarded as the most important cognitive activity in everyday and professional contexts." Moreover, being national and official, the exams formats will, in a way or in another, impact the teaching/learning process; because the students' success is determined by how well they perform in the exams. In this respect, Pickford and Brown (2006, p.1) warn: "if we focus the tasks we set them on recall and memorization, that's what they'll do! If, however, we want them take a deep rather than a surface approach to the development of practical skills, we need to design practical assignments intelligently." This means that the notion of 'washback' or 'backwash' is at the heart of any assessment system. According to Richards and Schmidt (2010, p. 634), testing washback means "the positive or negative impact of a test on classroom teaching or learning." Ultimately, to make the Baccalaureate exams have a positive impact on the students' learning of creative problem solving, stress should be put on tasks that call on the students to consider information and procedures that guarantee the generation of knowledge, considered to be important for successful participation beyond school contexts. For example, the students need

to display their language skills to convincingly and critically debate novel issues, both orally and through writing.

It is equally worth mentioning that the unique part of the exams that calls on the students to refer to skills dealing with creative problem solving is the “Written Composition” part. However, it is only in the second topic that the students can bear on all the reasoning skills of Quellmalz’s taxonomy, and Guilford’s creativity skills. In more precise terms, in topic two of the ‘Written Composition’ part, the students are not provided with points on which they can build further explanations and details, which is not the case in topic one, where the students are given a set of ideas to develop, and join together to write a good composition. At this level, light should be casted on the fact that in topic one, stress is on ‘inference’ and ‘elaboration’. The former belongs to higher-order thinking skills in Quellmalz’s taxonomy, and the latter, counts among Guilford’s creativity skills.

To strengthen our analysis, examples from the exams are given to illustrate and validate what has been written so far. For example, BAC 2017 begins with the following activity:

- 1- Write the letter that corresponds to the right answer.**
- A-** The soil of Sumer is ...
- a.** salted **b.** fertile **c.** sterile
- B-** The Sumerians developed irrigation using ...
- a.** rainfall water **b.** river flood **c.** sea water
- C-** Cuneiform is a...
- a.** system of irrigation **b.** system of writing **c.** code of laws
- D-** The Sumerian’s spirit of co-operation was manifested through ...
- a.** his consciousness of his rights **b.** irrigation process **c.** his technological progress

Though the activity is related to multiple-choice items which have the advantage of being easy to score objectively, the most visible weakness of such items is that the students can also get the right answer only by guessing (Berry, 2008; Popham, 2003). In addition, the activity which is included in the ‘Reading Comprehension’ part does not seem to test comprehension at all. Evidence is that comprehension has nothing to do with guessing. Rather, comprehension involves students’ personal product in relation to the various meanings that the text carries. The activity, however, does involve neither Quellmalz’s reasoning skills, nor Guilford’s creativity skills. This analysis can be generalized to any multiple-choice item included in the Algerian EFL Baccalaureate Examinations under analysis.

There are many activities in the exams that do not ask students to display personal understanding and intelligence. Therefore, the activities are not in accordance with the principles of constructivism, which reflect intellectual autonomy and active construction of knowledge. The activities noticeably mirror rote learning which is ineffective, because it cannot be a good means in handling everyday-life problems. Shaped differently, language items which do not emphasize critical reasoning cannot prepare students to successfully and effectively perform in real-life situations whose complexity and unpredictability are crucial tenets. Because the assessment items and activities are not complex, poor problem solvers or low-achieving students can manage to solve them.

The following activities are illustrations of the exams activities in which stress is on lower-order thinking skills:

B/ Text Exploration

1- Find in the text words or phrases that are opposite in meaning to the following

a- advantages ≠(§2) b- unaware ≠(§3) c- obligations ≠(§3) (BAC 2017)

1- Find in the text words whose definitions follow:

- a) The conversion of a text from one language to another (§2)
- b) Make a change (§2) (BAC 2018)

The two activities of BAC 2017 and BAC 2018 relate to the cognitive level ‘recall’ in Quellmalz’s taxonomy, and do not involve any of Guilford’s creativity skills. This means that creative problem solving has not been tested. In addition, it was observed that though the activities require students to provide a personal answer, giving the paragraph number where the students can find the answer, makes the activities gravitate more towards guessing than to the provision of personal answers. In fact, it is mentioned in an activity identified in BAC 2017, that the opposite of the noun ‘advantages’ is to be found in paragraph two of the text, giving the students the symbol (§2). In addition, it is mentioned in BAC 2018, that the words corresponding to the definitions are in paragraph two of the text, providing the students with symbol (§2). This analysis is applicable to any similar item included in the four exams under evaluation. The right answers that can be given by the students cannot be considered as a personal product, owing to the fact that the students can come up with answers only through guessing.

The responsibility of test designers is to cater for what makes the tests reflect deep understanding, which is likely to benefit the students inside and outside the school contexts. A correct answer does not mean that creative construction of knowledge has taken place. In our analysis, it was noticed that the exams stress selected-response items that do not tap into the students’ cognitive faculties in terms of critical thinking, creative reasoning, and creative problem solving. This said, the quality of tests lies in their power to stimulate students’ interest to go beyond mere application of already acquired knowledge, to reach originality and flexibility. To back this analysis, one can mention Wiggins (1993, p.27) who highlights that “in the assessment of intellectual outcomes, substantial attention should be devoted to more sophisticated skills, such as understanding of principles, applying skill and knowledge to new tasks, and investigating, analyzing, and discussing complex issues, and problems.” If this is stressed in the exams, the teachers’ practices and the students’ learning styles and revision techniques will be oriented towards the implementation of learning tasks, which best reflect deep and valuable understanding. The more the students are faced with creative and complex problems, the bigger becomes their responsibility to handle that successfully. Students learn content knowledge not just to reproduce it through mechanical drills; rather, the students should permanently be expected to use their content knowledge analytically and contextually.

In addition to the analysis provided thus far, it has been found that the ‘Written Composition’ part of the EFL Baccalaureate from 2017 to 2020 includes aspects of creative problem solving, particularly topic two of the compositions. This is illustrated below:

Part Two: Written Expression (06 points)
Choose ONE of the following topics.
Topic One:

Creative Problem Solving in the Algerian EFL Bacallaureate Exams: An Evaluation

One of the major achievements of the Sumerian civilization was the invention of a sophisticated irrigation system. Using the following notes, write a composition of about 80 to 100 words on how Sumerians developed irrigation and state some of its benefits.

arid land and dry climate / river floods / fields too high to receive water / feeding the population / controlling overflows / construction of dams and reservoirs

Topic Two:

The Minister of Education is visiting your school. You have been chosen to deliver a speech on violence in schools. Write a speech of about 80 to 100 words on that phenomenon.

(BAC 2017)

The results in table 1 show that Topic One in the ‘Written Expression’ of the Bacallaureate 2017 involves Quellmalz’s reasoning skill ‘inference’, which in its turn, involves application and synthesis. As regards Guilford’s creativity skills, the topic turns around ‘elaboration’ in the sense that the students were given points that they could develop and explain better. A point worth mentioning at this stage, is that in the three analyzed examinations, Topic One of the Written Expression relates to Quellmalz’s reasoning skill ‘inference’ and Guilford’s creativity skill ‘elaboration’. Though Topic One in the three exams has aspects of creative problem solving, it would be better if the students were not given cues to use in their composition, and this for inciting the students to create the cues themselves.

Unlike Topic One in which the students were given hints to exploit, in Topic Two of the three exams the students were not provided with clues. This makes Topic Two gravitate more towards creative problem solving than Topic One. Indeed, all the reasoning skills of Quellmalz’s framework (recall, analysis, inference, comparison, and evaluation) and Guilford’s creativity skills (fluency, flexibility, elaboration, and originality) can be used by the students. In other words, Topic Two encourages the students to be creative by deploying a creative approach, which, as Isaksen et al., (2011: 24) write, “implies that you are attempting to advance toward an outcome that is new, unstructured, and open ended.”

In addition, it is useful to mention the topics in 2018 and 2019, for a better illustration and explanation of the importance given to creative problem solving by the test designers.

Topic Two:

You are working for a private company and your manager is unscrupulous, corrupt and nepotistic. Write a letter of about 80 to 100 words to the workers representative to denounce his unethical behaviour.

(N.B: sign as Mr Yasser)

(BAC 2018)

Topic Two:

You are a freelance reporter interested in the phenomenon of illegal emigration. You decided to embark with illegal emigrants to experience the hard conditions of their crossing of the Mediterranean Sea and to find out the reasons behind this risky adventure. Write a web article of about 80 to 120 words to sensitise future adventurers about the dangers of illegal emigration.

(BAC 2019)

The two topics in 2018 and 2019 assess the students’ performance, by asking them to write a composition through which they can show their abilities to treat issues creatively and argumentatively. The two topics deal with real-life issues. Indeed, the topic in BAC 2018 is

about the denouncement of unethical behaviors as corruption and nepotism; while the topic in BAC 2019 turns around illegal emigration. The nature of writing required to tackle the two topics is not only linguistic but also socio-pragmatic, through which the students can demonstrate their understanding of the much more complex and dynamic real world. On the basis of this, it can be argued that Quellmalz's reasoning skills and Guilford's creative skills are incorporated in the activities, insofar as the students can create ideas, analyze opinions, evaluate information, and infer intelligently. This positive aspect of the exams is an indicator of performance-based assessment, whose principles are in line with constructivism and competency-based approach to language teaching.

When the assessment items are in line with the constructivist principles, the students are challenged to create and construct solutions on the basis of their background knowledge. The students, therefore, become active participants in the teaching learning process. In this sense, Brooks and Brooks (1999: ix) note that "constructivist teachers often offer academic problems that challenge students to grapple first with the big ideas and to discern for themselves, with mediation from the teacher, the parts that require more investigation." This should be reflected throughout the activities of the exams.

When the students are assessed stressing their productive faculties, they become more responsible for acquiring skills that display their creativity. The idea is closely related to the positive impact of the testing culture labeled 'positive washback' (Hughes, 2003; Bachman, 1996). This sheds light on the test designers' responsibility to cater for test formats that trigger the students' reasoning skills, and make them feel the necessity to develop their language competencies successfully.

On the basis of the discussion provided, we come up to answer the research questions asked in the introduction. Indeed, with relation to the first research question: To what extent is creative problem solving stressed in the Algerian EFL Baccalaureate Exams? The analysis indicates that creative problem solving is not stressed in the exams at all. In fact, the results show that only 16.66% of the items challenge the students to solve problems creatively.

As regards the second research question: Do the exams items involve higher-order thinking skills or are they just simple drills? The discussion indicates that in most cases the exams items do not involve higher-order thinking skills, and that the mostly involved skill in the exams is 'recall'. Accordingly, the two hypotheses set in the introduction have been refuted.

❖ **Conclusion:** This research paper addressed the issue of the evaluation of the Algerian EFL Baccalaureate Exams comprising four years: 2017, 2018, 2019, and 2020, to find out whether creative problem solving is implemented in the exams or not. The study was carried out following two frameworks: Quellmalz's reasoning skills (1987) and Guilford's creative skills (1956). The main findings indicate that creative problem solving is not stressed in the exams, which reflects traditional approaches of assessment rather than the alternative ones. The percentage of creative problem solving observable in the exams in 2017, 2018, 2019, and 2020 is only 16.66% for each year. The remaining percentage 83.33% turns around the assessment of lower-order thinking skills particularly 'recall'. To remediate the weaknesses, a set of recommendations is now provided.

Creative Problem Solving in the Algerian EFL Baccaureate Exams: An Evaluation

❖ **Recommendations:** the following are recommendations offered to improve the exams regarding the issue of creative problem solving.

1/ Higher-order thinking skills like analysis, synthesis, inference, and evaluation should be stressed in the exams.

2/ Students need to be assessed in terms of creative problem solving so as to prepare them for an effective handling of real-life situations.

3/It is important to consider the notion of washback when designing the exams.

4/ Recall of information is important but it should not be the only activity.

5/ The exams should be in line with the principles of constructivism and competency-based approach to language teaching, by stressing critical and creative answers considered as best indicators of competency and mastery.

7/The number of the items dealing with selected-response formats should be reduced in the exams, and replaced with questions targeting higher-reasoning skills.

8/The ability of students to express their views argumentatively should be valued in the exams.

❖ **Bibliography :**

1. Alderson, J.C., Clapham, C. & Wall, D. (1995). *Language test construction and evaluation*. Cambridge: Cambridge University Press.
2. Bachman, L. F. (1990). *Fundamental considerations in language testing*. Oxford: Oxford University Press.
3. Bachman, L. F. & Palmer, A.S. (1996). *Language testing in practice: Designing and developing useful language tests*. Oxford: Oxford University Press.
4. Baer, J., & Kaufman, J. C. (2006). *Creativity research in English-speaking countries*. In J. C. Kaufman, & R. J. Sternberg (Eds.), *The international handbook of creativity*. New York, NY: Cambridge University Press, 10-38.
5. Berry, R. (2008). *Assessment for learning*. Hong Kong: Hong Kong University Press.
6. Brooks, J. & Brooks, M. (1999). *In search of understanding: The case for constructivist classrooms*. Alexandria: Association for Supervision and Curriculum Development
7. Brown, D. H. (2003). *Language assessment: Principles and classroom practices*. Oxford :Oxford University Press.
8. Brown, J. D. (1995). *The elements of language curriculum: A systematic approach to Program development*. Boston: Heinle&Heinle.
9. Cunningsworth, A. (1984). *Evaluating and selecting EFL teaching materials*. London:Heinemann.
10. Cunningsworth, A. (1995). *Choosing your coursebook*. Oxford: Heineman.
11. Delisle, R. (1997). *How to use problem-based learning in the classroom*. Alexandria: Association for Supervision and Curriculum Development.
12. Duncker, K., S Lees, L. (1945). *On problem-solving*. Washington: American Psychological Association, 58(5).
13. Fitzpatrick, J.L., Sanders, J.R., Worthen, B.R. (2011). *Program evaluation: Alternative approaches and practical guidelines*. New Jersey: Person Education.
14. Frazier, J. & Juza, P. (2008). *Materials Used in the USA in Tomlinson, B. (Edr)*.
15. *English language learning materials: A critical Review*. London: Continuum International Publishing Group.
16. Hughes, A. (1996). *Testing for language teachers*. Cambridge: Cambridge University Press.
17. Hutchinson, T. & Waters, A. (1987). *English for specific purposes*. Cambridge: Cambridge University Press.
18. Isaksen, S. G., Dorval, B. K., & Treffinger, D.J.(2011). *Creative approaches to problem solving: A framework for Innovation and change*. 3rd ed. California: SAGE Publications, Inc.
19. Islam, C. & Mares, C. (2014). *Adapting classroom materials*. In Tomlinson, B. (Ed.). *Developing materials for language teachers*. New York: Bloomsbury Academic.

20. Jonassen, D.H. (2011). *Learning to solve problems: A handbook for designing problem-learning environments*. New York: Routledge.
21. Lewis, A. & Smith, D. (1993). *Defining higher order thinking*. *Theory into Practice* 32 (3), 131-137.
22. Macalister, J & Nation, P.(2010). *Language curriculum design..* New York & London: Routledge.
23. Mares, C. (2003). *Writing a coursebook*. In B. Tomlinson (Ed.), *Developing materials for language teaching*. London: Continuum, 130-140.
24. McDonough, J. & Shaw, C. (1993). *Materials and methods in ELT*. Oxford:Blackwell.
25. McGrath, I. (2016). *Materials evaluation and design for language teaching*. Edinburgh: Edinburgh University Press
26. Medeiros, K. E., Watts, L.L., Mumford, M.D. (2017). *Thinking inside the Box: Educating Leaders to Manage Constraints*. in Chunfang, Zhou (Edr), *Creative Problem Solving Skills in Higher Education*. Chocolate Avenue: IGI Global.
27. Moseley, D., Baumfield, V., Elliott, J., Gregson, M., Higgins, S., Miller, J., Newton, D. P. (2005). *Frameworks for thinking : a handbook for teaching and learning*. Cambridge: Cambridge University Press.
28. Pickford, R. &Brown, S. (2006).*Assessing skills and practice*. London: Routledge: Taylor and Francis Group
29. Polya, G. (1962).*Mathematical discovery on understanding, learning, and teaching problem solving*. New York: Wiley.
30. Popham, J. (2003). *Teach better, test better: The instructional role of assessment*.Alexandria:Association for Supervision and Curriculum Development.
31. Proctor, T. (2006). *Creative problem solving for managers (2nded.)*. London: Routledge.
32. Proctor, T. (2006). *Creative problem solving for managers. 2nded.* London: Routledge.
33. Quellmalz, E. &Hoskyn, J. (1997). *Classroom assessment of reasoning strategies*. In Phye, G. D. (Ed.). *Handbook of classroom assessment: Learning, adjustment andachievement*. London: Academic Press.
34. Quellmalz, E.S. (1987). *Developing reasoning skills*. In J.B. Baron and R. Sternberg (Eds.),*Teaching thinking skills: Theory and practice..* New York: W.H. Freeman and Co, 86-105.
35. Pritchard, A. &Woollard, J. (2010). *Constructivism and social learning*. London: Routledge.
36. Richards, J. C. & Schmidt, R. (2010). *Longman dictionary of language teaching and applied linguistics. 3th ed.* London: Pearson Education Limited.
37. Rossi, P.H., Lipsey., M.W., Freeman., H.E. (2004). *Evaluation: A systematic approach. Seventh Edition*. Thousand Oaks, CA: Sage.
38. Santrock, J.W. (2001).*Educational psychology*. New York: McGraw- Hill Companies, Inc.
39. Sheldon, L. E. (1987). *ELT textbooks and materials: Problems in evaluation and development*. Oxford: Modern English Publications in Association with the British Council.
40. Stufflebeam, D. (2002). *Foundational models for 21st century program evaluation*. In Stufflebeam,D. (Ed.) *Evaluation models: Viewpoints on educational and human services evaluation*. New York: Kluwer Academic Publishers.
41. Tomlinson, B. (2003). *Evaluation and adaptation of materials (15-101)* in Tomlinson B. *Developing materials for language teaching* . London: Cromwell Press.
42. Tomlinson, B. (Ed.). (1998). *Materials development in language teaching*. Cambridge: Cambridge University Press.
43. Tomlinson, B. (2011). *Glossary of basic terms for materials development in language teaching in Tomlinson. Materials development in language teaching*. Cambridge: Cambridge University Press.
44. Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: MA: Harvard University Press.
45. Wiggins, G. P. (1993). *Assessing student performance: Exploring the purpose and limits of testing*. San Francisco: Jossey-Bass Inc.