The Impact of the One Minute Paper CAT on Enhancing EFL Students’ Critical Thinking

The case study of second year license LMD students of English at Larbi ben M’hidi University

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Master in Language Sciences and Teaching English as a Foreign Language

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DEDICATION

In the name of Allah, the Most Gracious, the Most Merciful

This thesis is dedicated to:

My great parents, who thanks to them, I reached this level, may ALLAH bless them,

My dearest brothers and sister, my GOD has mercy on them,

My beloved family, the symbol of love and giving,

My friends who encouraged and supported me,

To all people in my life who touch my heart,

I dedicate this work.
ACKNOWLEDGMENT

“My success is only by Allah”

Qur’an (11,88)

“Men will not get anything unless he works hard”

(Surah al-Najm, 53:39).

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ABSTRACT

The awareness about the implementation of critical thinking as language pedagogy has started recently, research on CT has been broadly carried out in many fields of knowledge, however, English as a foreign language (EFL) has not been a part of the dissection, and it consequently requires fulfilling investigations. Therefore, efforts have been made to seek an appropriate way to develop CT in EFL university classes. Accordingly; we hypothesized that the “One Minute Paper” classroom assessment technique has a positive effect on boosting student’s CT and applicable to EFL university classrooms. A quasi-experimental design has been proceeded to reach the aim of our study. 40 second year license students of English at El Arbi Ben Midi University were the sample of our study. They were divided equally into control and experimental group; the latter received a treatment period in the linguistic module using the OMP while the control group was exposed to the same treatment from the same teacher accept there was no implementation of the assessment technique. We relied on the Watson Glaser CT appraisal as an instrument in the pre-test and the post-test to evaluate their ability to think critically. The results have confirmed statistically, the positive effect of the OMP on students’ CT. In view of that, teachers may make use of this technique in the daily classroom activities in order to help their students to advance their ability to critically think. However; there existed some limitations in this study are also mentioned, additionally, implications for future research are suggested.
List of Abbreviations

- **OMP**: One Minute Paper

- **EFL**: English as a Foreign Language.

- **CATs**: Classroom Assessment Techniques

- **SA**: Summative Assessment

- **FA**: Formative Assessment

- **CT**: Critical Thinking

- **L2**: Second Language

- **V’s**: Versus

- **WGCTA**: Watson-Glaser Critical Thinking Appraisal
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Introduction

1. Statement of the Problem

University students are often passive thinkers recipient rather than critical thinkers and productive in foreign language classes. This due to the fact that most of them suffer from the lack of motivation, stresses, boredom, anxiety, and they have a negative attitude about learning the foreign language. Hence, they may develop a kind of mental block or effective filter which in turn can prevent them from using their full brain capacity, One other direct reason is that some teachers are unaware to push them to do so, particularly those new in teaching proficiency whom do not have a clue about techniques should be used to encourage students’ critical thinking, and move them from passive students to active ones.

On this basis, using the “One Minute Paper” classroom assessment technique can be considered as a valuable, reliable pedagogical tool that provides the adequate circumstances for students to think critically. And a welcome change that breaks the routine of teaching English courses in the Algerian universities.

2. Aim of the Study

This research is basically designed to shed light on the effectiveness of using the “One Minute Paper” as a classroom assessment technique on students’ critical thinking in English classes of El Arbi Ben Mhidi University. On the other hand; foster their ability to think critically and encourage them to be a participant, active and productive learners by integrating them in the teaching process so increasing in class reflection through the implementation of this technique.
3. Research Questions and Hypothesis

3.1 Research Questions

What are the impacts of using the OMP CAT on students’ critical thinking?

How does the OMP formative assessment technique move EFL students from passive and recipient toward productive and critical thinkers?

3.2 Research Hypothesis

According to what have been discussed above, we hypothesized that, if the OMP becomes integrated into everyday classroom activities, the learners’ ability to critically think would improve gradually and significantly.

4. Methodology

The nature of this study entails the use of the experimental method in order to test the hypothesis and to answer the previous question.

5. Population and Sampling

40 Second year license LMD English students of L’arbi Ben Mhidi University.

6. Means of the Study

Pre-test and post-test to the learners to measure the degree of influence of the one minute paper on enhancing students’ critical thinking.

The first takes place before the learners are exposed to the treatment period (the experimental group is exposed to the OMP and the control group continues the same usual method without using the OMP), and the second test will be carried after the treatment.
7. Structure of the Study

The present study is divided on to three chapters, the first two chapters are purely theoretical, wherein the first one; covers the formative classroom assessment procedure and how it can be profiteered to improve the students’ learning. Then it goes through the OMP (the independent variable) as a classroom assessment technique. The second chapter will review the scope of foreign language’s critical thinking (the dependent variable), investigating some areas of research related to the learning and the teaching process, and the relationship of the OMP CAT on the students’ CT enhancement. The second chapter is practical, where it is devoted to the collection and the analysis of the data, and the interpretation of the results of the tests which will be carried out and offered to the students in the first part, while the second part, draws a conclusion about the findings concerning the effect of the OMP CAT on EFL students’ CT
Introduction

Assessment activities are part of the teaching practice that teachers use to evaluate their students; those activities play a vital role not only in the teaching process but also on the student learning. Mostly; assessment is accompanied with the idea of using standardized assessment instruments, that is to say; summative assessment such as tests that has to do only with grading the learners rather than fostering their ability to deal with materials and pushing them to promote their reflective learning. For this reason, it is extremely needed for teachers to use another kind of assessment that may make the student learning better and their achievement, stronger, in other words, teachers should add the formative assessment as another ingredient to their classroom practices, simply because it is considered helpful to provide the students feedback about their performance and learning progress, also, enable them to actively engage in the learning context targeted. That is exactly the focus of this research. In other words, the present study spotlighted on the implementation of the “One Minute-Paper” classroom formative assessment technique as an adequate suggestion to boost the student’s learning through using their critical thinking skill.

This chapter, referred to the definition of classroom assessment and its techniques, tackled the tow practical types of assessment focusing on the formative one and dealing with its importance. The interest is then given to the OMP CAT as a strategy that fits the purpose of the conducted study touching on its pros, cons and caveats.
1.1.1 Classroom Assessment

Classroom assessment refers to a permanent process that involves the teacher to adapt instruction and provide feedback to students eventually or even in the meantime of the teaching and learning operation (Sheinker & Redfield, 2001). According to Hanna and Dettmer, (as cited in Formative and Summative Assessment, n.d) Assessment is the procedure of collecting data. More clearly, a systematic process instructors use to gather data about their teaching and their students’ learning. The purpose is to enable tutors and students cooperatively ameliorate learning in a manner that a teacher adapts his or her material in hand to fit the student needs after he gathers information from the classroom assessment, on this bases classroom assessment is a part of the instruction that reinforce the effective learning. (Dochy & McDowell, 1997). Teachers who use CA, they durably give explicit and implicit feedback to their students, aside from, students also get benefits from the feedback of their own participation and that of their classmates. Before the instructor continues his teaching, he should be sure that his students have understood, and the lecture’s objectives are reached. CA measures the students’ progress as learners and or provides faculty information about their effectiveness of teaching. In brief; assessment is an overlapping part of instruction that has a highly significant role to students learning enhancement, and lecturers teaching effectiveness.

The assessment process can be presented in the following figure:

Figure1.1 The systematic process of assessment (Adopted from Formative and Summative Assessment, n.d)
So the assessment process is based on three steps; assessment, evaluation and decision-making. First of all, data are collected from classroom activities and then accessed via divers forms like; pre-tests, observations, and examinations. After the teacher gathers data, he can then evaluate the students’ performance. The evaluation leads the teacher to judge and determine the general value of an outcome depending on the assessment data collected. Then finally, it comes the decision making process, where he should adopt or develop a new material to recover the recognized gaps, weaknesses or deficiencies.

1.1.2 The Two Maine Types of Assessment

In the past few years, “formative” and “summative” are terms that refer to a balanced assessment system, in which; formative assessment becomes a necessary element that should be done before the summative assessment is implemented. Otherwise, the assessment cannot be considered reliable.

1.1.2.1 Definition of Summative Assessment

It is a process of grading to evaluate what students have learned at the end of a unit, an instructional lesson, a semester, or a year. It includes quizzes, tests, exams… etc. SA appears when teaching and learning are finished, in which there is no additional learning after, except if there are assignments and projects that needs to be completed (Formative and Summative Assessment, n.d.).

1.1.2.2 Definition of Formative Assessment

Unlike summative assessment that occurs when the learning procedure ends, Formative assessment (FA) takes place within the instructional process; it is an everyday classroom activity that provides feedback and the information needed about the students’ understanding and the instructors’ teaching where an adjustment can be made while teaching
and learning are happening (Black, 1999, p. 118). Wiliam and Thompson (2008) noticed, "an assessment is formative to the extent that information from the assessment is fed back within the system and actually used to improve the performance of the system in some way" (p. 61). Regie (2012) explained that formative assessment measures the students’ development of learning. It is characterized on the other hand; by assessing the teachers’ progress in instruction. For instance; using observation or surveying the students while trying a new activity in the classroom to decide if it is appropriate to be implemented again or to alter it according to the students’ needs (p. 5). Looney (2011) says that “formative assessment is now seeming as an integrated part of the teaching and learning process rather than as a separate activity occurring after a phase of teaching”. He meant that formative assessment is an activity that happens simultaneously with the teaching and learning system, unlike those kinds of assessments which appears later, when the educational program ends.

So; it is all about the implementation of the appropriate methods and activities. Formative assessment views how the performance comes to pass and to what extent the teaching methods serve the course’s objective and reaches the intended message. Additionally, formative evaluation provides useful feedback that helps instructors to make decisions about changes within the educational period and not when it is too late.

1.1.3. Formative Assessment Vs Summative Assessment

To deeply understand FA it is needed to separate it from what is not. FA gathers evidence about learning achievement during the instruction to give feedback that helps the teacher to develop the coming lesson. Whereas, SA summarizes the students’ production at the end (Baume, 1998, p. 8). Scriven (as cited in Mussawy, 2009) the function of formative assessment is to advance the educational instruction while summative assessment is to evaluate the learners’ accomplishment. Harlen (as cited in Mussawy, 2009) SA is used
“in deciding, collecting and making judgments about evidence relating to the goals of the learning being assessed” (p.11) where there is no consideration to how the information has been learned, and how it should be used. It is argued that, FA focuses on improving learning and developing skills; whereas, SA is about deciding what the students’ level is, instead of stimulating their learning (Boud, 1995, p. 36). We may distinguish FA formats from SA in the following way: FA is a “practice” students do not undertake on “grade book fashion” that has a limited feedback which do not support the students learning. FA are instructional activities and techniques used continuously in everyday classroom activities in which it cannot be separated from the instruction the teachers use to gather information on students’ understanding and then rely on to inform the instruction, share them with the students to engage them to be self reflective learners, those instructional activities include, classroom discussion, conversations with students, questioning in each session, class work and daily homeworks (Nitko, 2004). FA is not only about the collection of information, but it is also about what they do with the information they have collected. That is to say, teachers use the feedback they collected from their learners in improving the teaching and learning process. Chappuis and Stiggins (2004) stated that, it is perceived that students are acting passively in the traditional form (summative assessment) instead of actively interact in the new form (formative assessment). In other terms, in FA learners have a role in regulating their learning progress, and are able to assess their own achievement and that of their colleges in the classroom.

To sum up, if teachers are aiming at assessing the students’ production during the instruction, they are engaged in formative assessment. And if instructors deciding to assess the final product, they are engaged in summative assessment.
Table 1.1 FA Vs SA Adapted from (Summative versus Formative Assessment, n.d)

<table>
<thead>
<tr>
<th>Formative</th>
<th>Summative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow learners to figure out their strengths and weaknesses</td>
<td>There is no additional formal learning at this stage except for assignments and completion of projects.</td>
</tr>
<tr>
<td>Inform the instructor about where students are facing problems when learning.</td>
<td>Egg; tests a midterm exam or end of course exam, a final project, a presentation or report.</td>
</tr>
<tr>
<td>Egg; observations, conferences, questioning.</td>
<td></td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td></td>
</tr>
<tr>
<td>Grading and judging the students’ achievement.</td>
<td>Notifying teaching and improving learning (giving feedback).</td>
</tr>
</tbody>
</table>

1.1.4 The Importance of Formative Assessment

As it has been mentioned before; summative assessments are insufficient and they may be considered purposeless because they have nothing to do with the learners’ achievement and the students’ learning skills progress. Formative assessment refers to performance assessment, i.e.; the application of knowledge and skills rather than rote memorization of facts (Stiggins, 2005). Clear examples of performance assessment techniques are; oral presentations, debates, and demonstrations, role playing, and research paper and experiments. This kind of assessment involves students in the production process that it is more complex (Nitko, 2004). There are soft skills that cannot be measured using summative assessment. Formative assessment that provides continuous feedback, however, can strengthen students’ soft skills. FA “measure students’ learning that embeds both quantitative and qualitative features” (Herrera et al. 2007, p. 25) this means that, FA is considered more authentic when it is
compared to the traditional method (summative assessment). Every day beneficial feedback engages students to test their errors and learn through observation and be more critical self reflectors. The chief aim of assessment is to improve students’ learning and progress instead of only grade production (Baume, 1998, p. 6). There is no doubt that it is essential to assess in order to grade performance, but still grading as a secondary activity to reach the goal of learning quality development. FAs that provide feedback raises powerfully the students’ motivation, influences strongly their achievement, attract their interest, engage them in the learning process, and create challenging, responsible and independent students (Ramsden, 1992, pp. 184-185, 193). Teachers using formative assessment techniques are automatically ready to meet diverse students’ needs, through differentiation and adaptation of teaching to achieve a greater equity of students’ outcomes. FA promotes the goals of lifelong learning; develop the students’ own learning to acquire more skills. Chappuis and Stiggins (2004) stated that, it is perceived that students are acting passively in the traditional form of assessment (summative assessment). In other terms, that learners has the role in regulating their learning progress, and are able to assess their own achievements and that of their colleges in the classroom, and shier their instructor in criticizing and evaluating their work inside the classroom. Another significant issue that makes FA highly demanded is the negative remaining that summative assessment may cause, like, it is possible that some "students will fail in the state-mandated test" (Wiliam & Thompson, 2008, p. 61). Black and Wiliam observed the unfavorable downside of grade making, regarding that, when students get bad marks in some terms, a misbelieve may be created between the learner and the instructor, that she or he is not skillful or not smart enough. Moreover, educators have declared that, if quiz or tests are only implemented at the end of a term, it will be hard to adapt instruction and boost learning. (Wiggins & McTighe, 2007; Black & Wiliam, 1998; Herrera, Murry & Cabral, 200
Figure 1.2 Formative assessment cycle (adopted from Mussawy, 2009)
1.2.1 Classroom Assessment Techniques

1.2.1.1 Definition of Classroom Assessment Techniques

Are the systematic process created to enable the teacher to know the effectiveness of his or her teaching method, taking evidence from what students are learning and how well they are receiving the information in the classroom. Accordingly, classroom assessment techniques “help teachers find out what students are learning in the classroom and how well students are learning it” (Anglo & Cross, 1993, p. 4). CATs are every day classroom activities the teacher implements to be aware durably about his students learning. As it is mentioned in Anglo’s and Cross’s book (and as cited in Shakil n.d)

“These CAT’s are designed to encourage college teachers to become more systematic and sensitive observers of learning as it takes place every day in their classrooms. Faculties have an exceptional opportunity to use their classrooms as laboratories for the study of learning and through such study to develop a better understanding of the learning process and the impact of their teaching upon it.” (p. 2)

subsequently, both teachers and learners are indented to assess the learning-teaching progress through the implementation of the classroom assessment techniques, at the same time; thus assessments inform the instructor about whether or not their way of teaching was effective (cf. Hattie & Timperley, 2007). According to Greive (2003, p. 48), “classroom assessment is an ongoing sophisticated feedback mechanism that carries with it specific implications in terms of learning and teaching.” Greive additionally clarified, “The classroom assessment techniques emphasize the principles of active learning as well as student-centered learning.” That is to say, CATs provides students with feedback about their progress as learners, on the other hand, informs teachers about their teaching efficacy. According to a report by the Study Group on the Conditions of Excellence in American Higher Education (1984), “There is now
a good deal of research evidence to suggest that the more time and effort students invest in the learning process and the more intensely they engage in their own education, the greater will be their satisfaction with their educational experience, and their persistence in college, and the more likely they are to continue their learning” (p. 17). Angelo and Cross and (as sited in Shakil n.d), supported the same idea saying that, “Active engagement in higher learning implies and requires self-awareness and self-direction,” to clarify, CATs do not only occupies the teachers to prompt the teaching and learning process, but also helps students to become more effective and efficient learners and aware about their educational development.

### Table 1.2 Examples of CATs (adapted from a table on the National Teaching and Learning Forum, 2008).

<table>
<thead>
<tr>
<th>CATs</th>
<th>Method</th>
<th>Feedback</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge probe</td>
<td>Before starting the lecture ask students some (open, or multiple choice) questions about it. To assess their existing background.</td>
<td>If open ended, you could use peer assessment, if multiple choice, use vote pads and then group discussion.</td>
<td>Prep: low In class: medium Analysis: low</td>
</tr>
<tr>
<td>Minute paper</td>
<td>Close the session by asking “what was the most important thing you learned in class today? What question is an answered?</td>
<td>Be sure that they capture the intended message, collect and review responses to comment on them in the next class. They can be also discussed in partner, peer review, discussing misperceptions</td>
<td>Prep: low In class: low if collected, higher if peer assessed Analysis: low</td>
</tr>
<tr>
<td>One-sentence</td>
<td>At any time during class ask students to write one sentence about an important point in the</td>
<td>Get sure that students grasped the message. Vote beds can be</td>
<td>Prep: low In class: low Analysis: low</td>
</tr>
</tbody>
</table>
**summary** topic that is expected that they have an idea about it to test familiarity about the topic

**Directed paraphrasing**

To assess students’ comprehension ability and how well they transfer concepts. Write down a summary of the principle taught in the lecture

Assessed by the teacher or by peers, make sure students dealt with the principal points.

Prep: low In class: medium Analysis: medium

**Application cards**

Ask students to write any think they didn’t understand in the lecture

Select a collection of examples of the students work to present them to the whole class, or ask peers to assess and discuss

Prep: low In class: low Analysis: med

**Muddiest point**

Ask students to write to apply what it has been already explained by the teacher in the cards for a theory, procedure or a principle

After collecting what was written, ask peers for discussion, ore use vote hand held voting predetermined items.

Prep: low In class: medium Analysis: low

---

1.2.2 The One Minute Paper CAT

1.2.2.1 What is the One Minute Paper?

The “One Minute Paper” or “The Minute-Paper”. It is also called;”The Half Sheet-Response” a formative classroom assessment technique, an in class reflection exercise provides a rapid feedback on whether the students are understanding or not. It is a technique used as an evidence of the student participation and engagement (Soetaert, 1998). It is a tool that engages students, and provides the teacher with early feedback on their learning and
whether his teaching was effective (Vonderwell, 2004). The OMP requires no technology and provides only a pen and an index card, in which the student briefly write down answers to two questions; usually, what was the most important thing you learned? What question is answered? The OMP does not cost neither efforts nor time comparing to its beneficial results. The OMP’s questions are not exclusively used like the two forms illustrated, the instructor may manipulate them depending on the course objective (Angelo and Cross 1993; McKeachie, 2002), in simpler words; the questions used in the OMP may vary to several formulas in order to specifically refer to a particular point in a lecture. Also to meet the teaching and learning needs.

1.2.2.2 Potential Benefits

The obvious advantages of the OMP simply appear in its name, that is to say; it can be completed in a very least period of time using simple tools and doing less effort. According to Stead, (2005) the usefulness of the OMP hides on its worthy effect on the teaching and learning process. It creates the active learning which is mostly does not exist in large groups. So, it has the feature of promoting the students’ interaction, consolidates active listening in the classroom. The OMP gives students a chance to reflect on what has been presented by the teacher. Angelo and Cross (1993) claimed that,

Despite its simplicity, the Minute Paper assesses more than mere recall. To select the most important or significant information, learners must first evaluate what they recall. Then, to come up with a question, students must self-assess—asking themselves how well they understand what they have just heard or studied (par, 3)

Since the OMP’s second question stimulates to ask a question writing it down on the paper, it is considered extremely helpful to shy students who face difficulty when speaking in front of public.
Besides; the fast inclusive feedback that the OMP provides about the class and the teacher; which as well, allows the teacher to know what was not fully understood, so that; he or she has to make things clearer at the very next session to avoid misperception (Harwood, as cited in Stead 2005). If the OMPs are anonymous, the student may reply comfortably without taking into account what the teacher may consider inadmissible. And if the responses are signed, then it is an evidence of the students’ active attendance, which is more useful than signing a list. (Becker as cited in Stead, 2005). Additionally the OMP is a good medium that improves the students writing skill, simply because it is a writing activity that stimulates students to write what they have understood by their own styles, summarize the lecture’s content and paraphrase what have been read.

A practical evidence from students’ opinions of the one minute paper’s benefits is founded in Weaver and Cotrell’s (1985) survey that had been carried out to 150 students, where the majority of responses were positive and enthusiastic and only less than five replies were negative (p. 24).

1.2.2.3 How does it Work?

According to Anglo and Cross, (1993) at the end of a class the lecturer uses the OMP to close the session. At early time for about two or three minutes, he proposes for his/her students to reply to the following questions presented in the formulation illustrated below in a half sheet of paper.
The students then should respond briefly, according to what they have already heard and understood, assessing themselves about how well they grasped the message intended. It is optional whether the half sheets are signed or anonymous. Then the instructor gathers the papers back to review the responses looking for the most frequent questions and notice any useful comments. In which; he or she has to decide whether there are any needed changes or adjustments to make. At the entry of the immediate session, he/she should start debating and discussing with students about the incomprehensible points was suggested in order to move to the next lesson avoiding misperceptions and ambiguity. It should be noted that; if the focus is on students understanding of a lecture, the last few minutes of class may be the best time. If the focus is on prior homework assignment, however, the first few minutes may be more appropriate. The feasibility of this technique during the lecture is also possible, when the tutor aims at engaging the learners and creating in class-reflection. (Anglo and Cross, 1993)
1.2.4 The Obstacles we May Face

Regardless to the benefits that this technique contains; the OMP is not that easy as it seems, designing comprehension questions that are related to what the students have dealt with is not facile task. This technique needs accurate management and it may not suit some learning experiences (Anglo & Cross, 1993). In simple expressions, it is not widely applicable, the student may understand the question posed in a different way than the teacher intends. Anglo and Cross (1993) also clarified, Sometimes it takes a longer time than it is expected when responding to the OMPs, often it is impossible for a practitioner to reply to all the questions raised and give clarification to each student’s misunderstanding; so that, individual disappointment may appear.

1.2.5 How to Avoid Such Obstacles

Anglo and Cross (1993) also provided some advices to avoid the OMP’s misapplication assuming that, students who are unfamiliar with this technique may misuse it at the beginning. So, to handle this problem and achieve the learning goals of this technique, it is necessary to accept their starting falter. That is to say, students may fail in responding appropriately to the OMP, maybe because they didn’t understand how to put it into practice yet, so it is a matter of time at which the students will be more experienced with the technique, and the teacher’s wisdom to direct his student to the right use. Using the technique flexibly inside the classroom, like, using it at different times; at the start of a class, during the lecture or at the end of the session, depending on the purpose of what the technique is used for. Another recommendation is to set a definite time that will be pended on preparing the feedback. In other words, some students’ questions need a longer time to provide their answers than letting them for the next session i.e. at the last minute. Furthermore, to avoid temper expectations, and prevent individual disappointment, it is fitly for a teacher to inform
his students previously that he will only respond to the most common issues raised in their
minute papers even though he can deliver more. Setting a clear plan to implement the
technique, five to ten minutes to accomplish it and time later to provide feedback and discuss
the results. It is suggested by Almer (as cited in Stead, 2005) that, often, it is best if students
do not write their names in the index cards, except if there is a convincing reason that leads
the teacher to know the respondent’s owner. Students likely to be aware about how much time
they have to spend when responding, mostly; two to five minutes in each question are enough,
the kind of answers they should conduct (short sentences, words, phrases...), and when they
receive feedback. It is optimal to use questions that are directly related to the course content to
allow the students to link their ideas and corporate information. The effectiveness and
successfulness of this technique is actualized when the instructor does his/her best to reflect
on investments on time and develop new materials in response to it and make them ready for
the next session. (Anglo & Cross, 1993)

Conclusion

According to what have been reviewed in the FA’s literature, it is clearly noticed that
this genre of assessment has significant features that cannot be found in other kinds of
assessment and which are extremely needed in the educational setting particularly in EFL
classes. On these bases, the OMP is given as the most adequate formative CAT in which it
provides lecturers with instant and useful feedback and then benefit from to prompt learners
to be self reflectors, in specific terms, engage them in thinking critically while learning.
Hereupon the coming chapter will be allocated to handle the critical thinking process.
CHAPTER TWO

THE CONCEPT OF CRITICAL THINKING

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Introduction

Recently, critical thinking has become very interesting in educational sector, educators start raising their awareness about the crucial importance of teaching thinking skills, as opposed to dealing with content and information that was the focal point in the past. Currently, the focus is on “how to think” not just “what to think” (Schafersman, 1991). In EFL Classes, learning the language features only is insufficient to reach the highest level of language performance. Accordingly integrating CT in English language curriculum is necessary to encourage the learners reflectively learn and critically think through the language. It can be said that teaching thinking skills may happen indirectly or implicitly while concerning with the course content which is related to their subject of specialty, but this does not assure that students are understanding and make use of those thinking skills processes as it should be. That is the reason why English language teachers have to turn their interest in teaching those skills directly and explicitly.

In light of what have been said, this section will be about the definition of CT, CT elements, the teachability of CT, questioning as a useful method to teach CT, CT transferability, CT in EFL classes, explicit CT activities in EFL classes, and strategies to assess CT.
1.2.1 What is Critical Thinking?

Critical thinking has been defined by various philosophers, psychologists and educators. Generally, the philosophical approach focuses on the qualities and characteristics of the thinker rather than on the behaviors or the actions he/she may do (Lewis & Smith, 1993; Thayer-Bacon, 2000). According to Facione, (1990) a perfect critical thinker is the one who is naturally curious, open minded, stretchable, eager to have knowledge about everything, accepts others points of views, ready to comment others judgments and respect diverse perspectives. Socrates, the founder of critical thinking teaching practices, a long time ago proceed a method of questioning in which the receiver of that question my fail in providing rational adequate justification about his/her answer. Even though those who are well educated, they may be deeply confused and unreasonable. He suggested the significance of posing worthy questions that stimulate deeper thinking before our belief of ideas that seem valuable and acceptable (Paul, R., Elder, L., & Bartell, T., 1997). So Socrates wants to indicate that critical thinking is to think reflectively through asking open debatable questions that need reconsideration and profound explanation. He emphasized that thinking critically is to be more reasonable and logical and not externally seeking on ready-made facts which may lack concrete evidence and rational justification to support our belief.

Unlike the philosophical notion, the psychological approach, focused on the actions and the behaviors the critical thinker may perform. As it was mentioned by Lewis & Smith, (1993) CT is a set of skills or actions critical thinkers may perform. Since the thinking process is unobservable, psychologists depend on the products that may result from the behaviors and the thinking skills such as; analyzing, interpreting information and forming good questions. Sternberg (1986) defined the CT as “the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts” (p. 3). In other words, CT is a cognitive operation the person needs as a first step in order to exceed the
complexities, to put adequate decisions in his life and to receive new information. Halpern (1996); offered the same observation of Sternberg supposing that critical thinking is the ability to solve problems, make decisions, and formulate inferences (As cited in Reed, 1998, p. 22). Willingham (2007) defined the concept of thinking as “seeing both sides of an issue, being open to new evidence that disconfirms your ideas, reasoning dispassionately, demanding that claims be backed by evidence, deducing and inferring conclusions from available facts, solving problems, and so forth” (As cited in Janpour and Khatib, 2012, p. 31).

Finally CT is widely discussed by those who are specialized in the field of education, like Benjamin Bloom (1956) and his followers suggested a taxonomy that provided a useful structure for educators in order to depend on when teaching higher order thinking. CT is a significant skill that has to be found in all aspects of the educational process (Mason & Washington, 1991). Learners must have the skill that allows them to criticize the information and the recourses when reading the author's works and give arguments and express their point of view while writing (Spratt, as sited in Shreir & Khalk & Nabawy, 2014). According to Galder (2005, p. 1) “almost everyone agrees that one of the goals of education, at whatever level, is to help students develop general thinking skills, especially critical thinking skills.” That is to say, critical thinking is a skill that needs to be learned and demands practice through an organized instruction.

1.2.1.2 Critical Thinking and the Bloom’s Taxonomies

Benjamin bloom divided human thinking into six parts considering them the central core of the thinking process; knowledge, comprehension, application, analysis, synthesis, and evaluation. Those categories are arranged hierarchically, so that, the last four objectives of the taxonomy are representing higher order thinking, and the advance from the first targets (knowledge and comprehension) to the last four goals (application, analysis, synthesis, and
evaluation) epitomize a convert from lower order thinking to higher order thinking. Meaning that thinking at the higher level is dependent on mastering the skills at the lower level. (Kennedy et al., 1991)

1) Knowledge: the lowest level of the taxonomy, recalling or remembering fundamental facts, knowing the main ideas being taught, for example; defining, explain and summarize information.

2) Comprehension: interpretation of information, translating the information into different formats, differentiation or extrapolation of knowledge, understanding and grasping the meaning.

3) Application: application of the learned information to new situations, using the information to solve problems, apply, illustrate, demonstrate, and show
4) Analysis: Breaking down knowledge into parts, understanding the organization structure of the information, examining the relationships between the parts, analyze, compare, explain, classify the information.

5) Synthesis: combining elements (elements, component), integrating the new information into the previously existing knowledge, using the given facts to create new theories and making a prediction. Redesign the information, rearranges, combine, and create.

6) Evaluation: the highest level of cognitive thinking. Judging the value of the material, the method and debating the pros and cons of the information. Assess, judge, recommend, debate, decide etc…

So, as it was observed, thanks to the bloom’s taxonomy the thinking process turned into a tangible operation that allows teachers consciously teach and assess and measure the thinking skills on one hand. On the other hand, the taxonomy contributed in raising the student awareness in learning such skills and self assess their thinking progress.

1.2.2 Critical Thinking Elements

Nosich, (2009) mentioned three complementary elements of critical thinking are:

- **Critical thinking involves asking questions.** Posing worthy questions that need profound answering, being aware about vague areas that require wider clarification, namely; raising important unexpected questions that are directly touching the matter.

- **Critical thinking involves trying to answer those questions by reasoning them out.** That is; the answer to such questions is not simple or from the first thing that comes to the mind, instead; there should be a precise thinking and careful reasoning and not depending on the personal opinion and giving an obvious answer without making an effort to think about.
• **Critical Thinking Involves Believing the Results of Our Reasoning.** After making our efforts to internalize the results, then we can believe them, because it becomes reliable thanks to the accurate reasoning that was done. This still not enough; what follows is applying the action we realize is the most reasonable.

1.2.3 Teaching Critical Thinking

Human beings are not born with the ability to think critically. Therefore, CT is a skill that needs to be learned and required to be progressed, practiced and integrated into the curriculum constantly and employ students to actively learn and spontaneously reflect. To enhance adult learning, their teachers have to aid them develop their self reflection and critical thinking skills (Johnson 2012). Jonson also claimed that “It is necessarily thinking in a critically reflective manner about the adult’s beliefs that do not occur naturally or in a classroom learning process.” (Johnson 2012). In fact, traditional instructional methods depend purely on receipting facts and memorizing information rather than using enough conceptualization and attempting to animate thinking. “Memorizing is not learning”. (Rusten & Schuman, Slideshare May 2, 2012). Concerning teaching the course content and proceeding techniques that support memorization, critical thinking in this case cannot be strengthened. Instructors instead may conduct instructional strategies that reinforce students’ higher order thinking skills (Duplass & Ziedler, 2002; Hemming, 2000; Wong, 2007). Even though, that content which requires memory, such as the definition of the vocabulary, considered as the application of learning that stimulates thinking. Bailin, Case, Coombs and Daniels (1999) stated that “background knowledge in the particular area is a precondition for critical thinking to take place.” (p. 271).

In fact, several studies and many researchers have agreed that critical thinking abilities are teachable. Early, CT was taught as a stand-alone course, and then shifted to be
taught regularly, integrated into regular instruction by infusing the teaching of thinking into content instruction, whereas, recently, it has been claimed that critical thinking should be instructed in combination of the two notions.

Proponents of the general approach declared that critical thinking should be taught separately as an explicit instruction so that critical thinking skills are directly prompted and not with a combination of specific subject matter course, but recognized from students’ daily lives. Van Gelder (as sited in Lai, 2011) admitted that students have consciously to practice critical thinking skills through particular exercises “deliberate practice” which exceptionally appeared when critical thinking is structured explicitly and as a separate part of the curriculum. “The insight of Robert Ennis is the need to make this explicit in an organized way and taught separately if we are doing a good job of helping students learn how to evaluate ideas – that is, think critically” (Swartz, 2014, pH 8). Therefore, through 1990s into 2000s, there were courses that were called “critical thinking” where the focus was particularly on techniques that help the students to identify, analyze, and evaluate arguments. One example of these courses is Halpern’s course on critical thinking (Halpern & Riggio, 2003).

Actually, this separated CT courses confronted some problems. The first is, having a CT as separated curriculum leads to an overcrowded program in a school, at which it requires extra rooms to be carried out and most schools have little space where such courses can be accomplished. The second problem, which is the most serious, disturbed transferability, that is less likely to be acquired when students are only exposed to CT as a stand-alone course. Because teachers do not mostly provide opportunities where CT skills have been learnt can be practiced with examples from different courses or with changing situations they may face in their real life (Swartz, 2014). Accordingly appears the approach of infusing the teaching of thinking into content instruction in which students are introduced to the thinking skills and allowed to practice the skills were learnt. Halpern (2001, p. 278) appears to support this idea,
arguing that the thinking skills in instruction, taught as a “broad-based, cross-disciplinary” course, are considered as the best way of teaching the reflective thinking effectively. So teachers are involved to plan courses where they have to be able to teach them simultaneously with practicing the thinking skills. The students then are exposed explicitly to strategies to develop their thinking skills at the same time using the higher order thinking in the content they are receiving. In simpler terms, explicit thinking strategies, associated with curriculum, will help students to reach the deeper understanding and the skillful thinking with the readiness to transfer.

Last but not least, the mixture approach has been raised, an approach that joined the general and subject-specific approaches together, stand-alone instruction in general critical thinking skills in the context of specific subject matter are implemented hand in hand in the classrooms. Direct and specific instruction in critical thinking skills can be collected in both the general and specific components (Ennis, 1989). The notion also was corroborated by Facione (1990) when he declared that “critical thinking principles can be found in the context of domain specific content, and also in content inspired from events in everyday life”(p. 10).

Questioning is one of the techniques that necessitates students to analyze, synthesize, and evaluate the information in order to solve problems and make decisions instead of focusing solely on repeating the information. Because students must use critical thinking as a mental habit to think about how and what to think and not accept what is written or spoken without critically thinking about it (Scriven & Paul, 2008; Schafersman, 1991; Templeaar, 2006).

1.2.4 The Art of Questioning

Paul and Elder in 2006 defined critical thinking, saying that it is: “analyzing and evaluating thinking with a view to improve it” (p. 4). Paul and Elder offer students to ask and
respond to questions that prompt the learners to examine their beliefs and investigate reasoning and evidence suggested for statements that have been offered as a fact. Indeed, questioning had been used long ago as a method of teaching. Gall (1970) informed that the instructional time in schools last century passed nearly four-fifths of the time exposed to asking and answering questions, the educator asks approximately 400 questions in each day. But the query still posed is whether asking the questions on itself considered sufficient for students to be assisted in executing critical thinking as it had been described by Paul and elder in 2006? That is to say, carrying out investigations of conceptions, examination of evidence and making reasoning. Gall (1970) and other researchers reached, the fact that, even though the process of asking and answering questions is applied in schools, the process of critical thinking is not validly prompted. After he reviews the quality of questions raised in the classrooms he realized that during the early twentieth century, the category of the question raised was frequently repeated, he observed that about 60% of the questions posed by instructors classified as “fact recall”, 20% of them categorized as “procedural” and only around 20% of the questions certainly stimulates students to think. Later researchers as (Savage, 1998) have claimed that most of the time was spent in asking questions in classrooms; more than 70% of the questions asked demand memorization by rote, in addition to that, more than 80% of the questions were about realities requiring short term memory and which are exposed to be forgotten by students.

The majority members of researchers agreed that questioning has a basic role in the process of critical thinking promotion. But still it does not serve the purpose. To turn students into “self-directed, self-disciplined, self-monitored, and self-corrective” thinkers (Paul & Elder, 2006, p. 4), tutors should give questions that lead learners to think about their thinking, examine their thoughts and investigate their interpretations and assumptions. As it was stated by Walker (2003) “Questions are only as good as the thought put into them and should go
beyond knowledge level recall. Questions should be designed to promote evaluation and synthesis of facts and concepts” (p. 264).

Another researcher, Ikuenobe (2001) stated “Questioning implies a process of continuously opening up issues about the reasonableness of a belief; it requires providing better evidence or counter-evidence” (p. 331). This means that the question asked by the teacher should be worthy and ambiguous and needs convincing statements to be proved or rejected. Returning to the Socratic method of questioning used to enhance critical thinking (Ikuenobe; Metaphysics Research Lab, 2005; Overholser, 1992). He stated that, when starting solving a problem, a question should be asked first, after finding the answer, then the solution of that problem is discovered. This procedure is widely used in the scientific method where the statement of the problem should be stated first in a form of a question. This method provided by Socrates allows raising a set of questions that guides a person to clarify and states his beliefs (Metaphysics Research Lab, 2005). Overholser (1992) stated that: “the elements of "applied Socrates" are very appropriate for classroom settings and can promote an active learning environment in which students learn to evaluate information and develop a more sophisticated approach to various problems. Although empirical support is needed to evaluate and refine the benefits of the Socratic Method, it is clear that it promotes creative and critical thinking and fosters a collaborative learning atmosphere” (p. 19).

Walker (2003) suggested for instructors to imitate Bloom’s Taxonomy levels of analysis, and evaluation, to pose a higher level questioning when aiming at promoting critical thinking. In other words, asking questions that require for students to do reasoning, investigating assumptions and providing arguments. Besides avoiding direct questions with one set answer.
Another method suggested by King (1990), is carrying out peer interaction and exchanged questioning as a technique for developing critical thinking abilities. After exposing the lecture, students are divided into small groups and each member of a group is allowed to mention his/her questions and the other groups try to provide an answer to the questions that have been raised. Group discussion creates an agreeable atmosphere to actively ask critical thinking questions.

1.2.5 Transferability of Critical Thinking

CT’s researchers have shown inconsistence about if the critical thinking skills are transferable or not. For instance, some researchers agreed that students may demonstrate competence of critical thinking in one context and fail to do so if they were exposed to another (Willingham, 2007). This is not too different from that of the domain specificity which assumes that students who use critical thinking in completely domain-specific are less able to transfer their critical thinking skill from one situation to another (Ennis, 1989). Similarly, others hold that it is rare to find a student who spontaneously transfers his/her CT skill to new context (Kennedy et al., 1991; Pithers & Soden, 2000; Willingham, 2007). Contrarily, there are other scholars who were expecting the possibility of students transfer; this may happen, especially if students enjoyed the opportunity to practice critical thinking skills in diverse contexts and domains, particularly when they are taught to transfer those abilities (Kennedy et al., 1991).

Evidence from an experimental study has proven the students' success in transferring their ability of critical thinking. Halpern (2001) interpreted the findings of his study, which aimed at discovering whether college students are able to transfer their CT skills learned in the domain of a specific discipline to a new context several months later when the course had finished. He ended up with the fact that the majority of students in this study did successfully
implement the reasoning they had already acquired to other different topics several months later. So, if students are not given the opportunity to use their CT that have been taken in one course and connect it with other courses they are not able to transfer their ability to wider domains. For that reason, teaching CT should contain a direct instruction where students are trained to use what they have learned about critical thinking skills in other examples of other courses or in other situations that evoke the use of CT in their real lives far from school.

Perkins and Salomon (1989, 2001, 2012) indicated that most schools were teaching knowledge and skills in “inert” way, that is to say, ideas and abilities used to teach in cramped manner, in one context only. In Perkins expressions, “thus priming it as a mechanism for transfer. Metacognitive thinking can thus support not only forward-reaching transfer to future situations, but also backward-reaching transfer, where thinking strategies used in previous situations are prompted before encountering new situations.” (Swartz, 2014, p33).

1.2.6 Critical Thinking in EFL Classes

CT becomes a necessity, a part and parcel in English as a foreign language (EFL) curriculum (Davison & Dunham, 1997; Shirkhani & Fahim, 2011; Sun, 2015; Tang, 2016). EFL learners need CT to read between the lines, to write essays using strong arguments, to suggest their opinions using logic, to express their ideas using convincing proofs and to meet with the others oppositions. (Zhao & Pandian & Singh, 2016). Indeed, “using the language and knowing the meaning do not lead the learners to be proficient, instead, they need to display creative and critical thinking through the language to express their ideas creatively and critically” (Maibodi & Fahim 2012 p. 38). Murcia (2012) advocates the same assumption saying that, thinking critically while using L2 when discussing the topics in class enhances the application of the target language (L2). On the other hand, it necessitates the use of cross disciplinary critical thinking skills, for instance, inference, explanation, analysis, evaluation
and self-regulation (Facione, 2011) It has been discovered that, exposing learners to practice thinking activities may help them to be good language communicators, and creative in which they can produce variant styles of language when they speak or write the foreign language. The inclusion of thinking skills within the EFL curriculum makes the learning of the language easier, like observing the inferences between different languages’ items (Alnofaie, 2013). Critical instruction, gives the learner the opportunity to impose him/her self to express independently their language experience (Norton, as cited in Alnofaie, 2013). This refers to implicate learners in the decision-making of their language syllabus and self assess their language achievement. To sum up, the integration of CT in to EFL curriculum enables the foreign language learners to communicate in the target language and adjusts them for the real world.

1.2.6.1 EFL Critical Thinking Classroom Activities

Here are some selected strategies for teaching CT in EFL classrooms, which are effective when implemented properly. To put it another way, explicit instructions, such as; questioning, writing, in addition to that, reflective and cooperative learning activities.

1.2.6.1. a. Teachers and Learners Questioning

Questioning is the most significant technique used by teachers to stimulate learners critical thinking. Questions raised by the teacher can be classified into two types: lower level and higher level questioning. Questions of lower level referred to as literal questions that indicate general facts have been taught by the teacher. Whereas higher level questions are about the use of the information learned to produce a response, students are required to infer, analyze, and evaluate. The level of the student responses depends indeed on the level of the question posed by the teacher, if the teacher asks a high level question; students on the other hand increase the level of their responses (Orlich et al., 2013).
Closed/open questions and display/referential questions are commonly used in English language teaching settings. Concerning closed questions are questions that do not require more than one or a limited number of responses suggested. On the contrary, open questions may have several possible responses. For closed responses, the educator knows the answer previously, while the open questions depend on the students of the information often does not already have the information (Wu, 1993). Generally, language teachers most of the time ask the low level questions that do not challenge students to produce more complex linguistic responses. Besides, the higher level questions are rarely used. Tan (2007) argued that “place the students in a passive position by depriving them of opportunities to think independently and critically” (p. 100).

The best known “Socratic questioning” is another strategy to encourage students to use their critical thinking skills. It is known as probing questions. Wu (1993) discovered that asking follow-up probing questioning techniques was useful in which students were providing long and complex responses.

An important issue teachers should bear in mind is that they have to permit sufficient wait-time to their students to accomplish their responses using reasoning (Orlich et al., 2013); this technique is particularly used when the questions raised are classified in higher level and students tend to think critically.

Not only teachers are supposed to ask questions, but also students on the other hand should improve the quality of their questioning and pose them in the classroom. Reciprocal peer questioning is an adequate strategy used to engage the student in the critical thinking process and prompting their reading skills where students are allowed to work with peers or small groups to pose the questions still raised in their minds and respond to the ones raised by the others. This technique could aid students to enhance their ability to analyze and
understand texts (Simpson, 1996). Thanks to this technique, students are expected to regularly pose and answer the higher level questions of others or their own; they develop the habit of questioning and then start to become critical thinkers.

1.2.6.1. b. Group Discussion

Classroom discussion is “a teaching technique that involves an exchange of ideas, with active learning and participation by all concerned” (Orlich et al., 2013, p. 244). It is an effective method in terms of creating a deeper learning and fostering critical thinking. Because, when students are engaged in group discussion, they are spontaneously clarifying their ideas and reflecting on others thoughts (Dallimore, Hertenstein, & Platt, 2008). When aiming at improving students’ critical thinking involved in EFL classes, it is important to integrate them in collaborative discussion to exchange roles like, listening consciously, providing accurate responses, building on others ideas, asking worthy questions, indicating agreement and disagreement (Gunning, 2008).

1.2.6.1. c. Debate

The debate is one of the discussion strategies in a formal way, a powerful tool that develops critical thinking in classrooms. It compels students to carry out a deep research on particular topics, ask notable questions, deduce using strong arguments and reveal contradiction Halvorsen (2005) advocates using debate as a classroom activity in EFL classes, he sees that; using a debatable topic for students to controvert, facilitating critical thinking improvement.
1.2.6.1. d. Writing Assignments

Writing assignments are a practical activity that involves students to critically think while writing. Emig (1983, cited in Walker, 2003, p. 266) assumed that exposing students to write may improve their critical thinking skills. Additionally, it is better if the assignments are short focusing on the process of thinking (Oerman, 1997, as cited in Walker, 2003).

1.2.7 Critical Thinking Assessment Strategies

Several assessment techniques are obtained to assess the student’s ability to think critically. Anglo (1995) suggests for educators to use classroom assessment in order to regularly check the development of the students’ learning and the level of their thinking. The assessment methods are used after taking into consideration the teaching and learning styles, types and objectives, to decide about the suitable kind of assessment that should be used.

1.2.7. a. Minute Papers

As it has been defined in section one, this exercise is an easy and quick way to increase student engagement. A writing activity applied at the end of class. The technique aimed at leading students to reflectively learn, pay clear attention to class content where there is instant feedback about whether students have grasped what they have learned (Angelo, 1995). Students are asked to answer a couple of questions to stimulate self assessment, then their responses can be addressed at the beginning of the next class. After they were reviewed by the teacher, a classroom discussion will be held where students may actively reflect with their educator to each other responses.

1.2.7. b. Opportunities for a Transfer of Learning

Learning to integrate critical thinking into classroom activities, teachers offer students to apply what they have learned in other different situations. Halpern (1993) states “the goal
of critical-thinking instruction is to produce students who have become better thinkers in the real-world contexts, that extend beyond the usual in-class exam” (1993, p. 273). Students are challenged to use their critical thinking in extent situations that differ from that of the classroom. This allows them to reach the higher order thinking as they fix their knowledge for the long term

1.2.7. c. Essays

Students are given a writing task from a posed scenario in which they have to write a well constructed extensive piece of writing and then it is evaluated later by the teacher. The students’ critical thinking level will be dictated by the essay degree of structure (Ennis, 1993). This highly structured activity assesses the students’ skill of producing logical lines, defending or refusing an argument, and using objective reasoning.

1.2.7. d. Multiple Choice Test Items

Multiple choice test items are applied by tutors as the best way to assess students’ understanding of the course content, and a quick tool to grade their levels (Ennis, 1993). The test contains suggested answers without justifications, other tests require justification, and others require justification on wrong answers only, and it is possible to find justifications even with correct answers.

1.2.7. e. Visual Representations

This kind of assessment evaluates the students’ interpretation of the information received and at what extent he is able to apply that information in real life situations. The teacher orders his students to draw a brain chart of what they have learned. This technique illustrates how students formulate meaning and even create new information. Ennis (1993) represents a set of characteristics describing them as the central to define critical thinking,
formulating a sound position on a matter, moreover expecting different points of view in addition to that; there is also the capacity of drawing conclusions about and recognizing the value of the learned information. Those high level thinking skills used to achieve a deeper level of understanding. Concept mapping shows how well the student conclude the information learned on a map and how he may transfer his idea into a concrete image and communicate it with others, the instructor uses concept mapping to make his students thinking explicitly and then assess their mental activity.

Another test of similar function is called Gowan’s Vee Diagram which assesses the students’ ability to “unpack, analyze, and critically evaluate complex knowledge and value claims” (Mintzes & Novak, 2000, p. 41,). This assessment tool sees how the student formulates information and ideas he understood in a form of a diagram. The test exposes the student’s mental anatomy and whether he is able to apply what he has learned in other situations. This tool permits the teacher to gain a feedback that has a chief role in developing students’ critical thinking (Angelo, 1995, p. 7,). The information gained after using this assessment tool can be shared with students, so that they discuss it and by this way learners may develop a greater autonomy.

1.2.8 Why the One Minute Paper?

When students are asked about their thought, they may start thinking about their thinking. Research on questioning methodology affirms that teachers must give students an amount of time to respond (Brown & Kelley, 1986; Hemming, 2000). In this context, the majority of students spend at least 8 to 12 seconds to finish the formulation of their responses, particularly if they were in a situation that require them to think critically (Schafersman, 1991). Because thinking demands time and patience, instructors must grant student sufficient time to critically think. So, the OMP considered as the suitable technique that teachers may
use in their instruction to allow their students to think critically taking their time needed (Gibbons, 2007).

The OMP’s second question prompts the learners to ask questions, and this immediately leads them to improve their higher order cognitive skill (Harwood, 1996, p. 229). So, the one minute paper classroom assessment technique prompts students to deeper thinking and engages them into higher order meta-cognition than in rote-learning or memory oriented classrooms. In addition to that, the technique creates a suitable atmosphere that engages the students in group discussion where they are allowed to negotiate and debate their points of view, solve problems, and make decisions. And this automatically what makes them synthesize, evaluate, and analyze. “These kinds of discussions are often characterized as creating a community of inquiry and include forms of ‘Socratic’ dialogue, good questioning and linking techniques”. (Swartz, 2014 p. 22)

Such a technique grant the opportunity of opening discussions in class also would facilitate to encourage bi-directional communication. Vonderwell (2004) declared that the OMP has an effective role in enhancing communication between tutor and student. He stated also, “Opening the communications and feedback lines through interpersonal outreach strategies can help foster a learner-centered environment.”

The OMP considered as an in-class participation assignment in which students would actively deal with the topics and express their opinions, it can also sharpen critical thinking abilities and inspire higher-order thinking activities like analysis and evaluation (Gibbons, 2007, par. 7). This index card contains questions that challenge students to use their CT to judge, analyze, and evaluate the information received in the lecture, the major aim behind that is to encourage them to critically think, not necessarily to find the adequate answer.
“students are progressing toward higher-order thinking, responding to questions that ask them to critically analyze course materials. These include: "Whose arguments are more convincing, those of the Federalists or the Anti-Federalists, and why?" and "Which is the most powerful branch? Explain." Their responses reveal concerted efforts to think critically about the material and a willingness to take risks by trying out new ideas. In order to perpetuate this comfortable learning environment, constant reminders are offered that their task is not to articulate the right answer, but rather one that is thoughtful” (Gibbons, 2007, par. 12)

Here are some evidences that assure that the OMP challenges students to think critically and to actively engage in course material

“Students responded that it was "nice to be critically thinking, and make connections in class." One student noticed: "I find myself thinking more critically [and] analyzing the subject so that I have fully-formed thoughts if they are needed on note cards." Students also deemed the notecards "invaluable" because they created "the chance to actively think as opposed to being dictated to in a 'traditional' setting." On this point, a student added that they were "more effective than having lecture and lecture and so on ... a nice break while still thinking about the subject." Students also credited the exercise with spurring them to actively engage course materials, indicating they are "helpful in getting me to think more directly about the material" and "look a little deeper into the meaning of the documents that we read." (Gibbons, 2007, par. 15)

1.2.9 Literature Review Related To CT Studies Using WGCTA

The Watson-Glaser's Critical Thinking Appraisal. It is the most popular standardized test designed by Goodwin Watson and Edwin Glaser and has been developed over 85 years. For the period of the 21s, CT becomes an area of interest in several domains, particularly in
both; academic and applied settings. Lately, CT appraisals have been used widely to test several educational and occupational outgrowths. Whereas, the accurate definition of what the CT skills exactly are, remains till nowadays under the debate. The trustworthy definition that is popularly used in measuring, and the one that will be intended in this study is the one founded in the WGCTA principles. Clearly, CT is a complementary element of skills, information, and attitudes that stimulate a person to produce inferences, deductions, interpretations, recognize assumptions and evaluate arguments (Watson & Glaser, 1980)

The WGCTA have been used numerously in educational settings it considered helpful to evaluate the CT ability of students at any level after training and being exposed to a CT instructional program, in addition to preceding a research about the concept of critical thinking process (http://www.psychcorpcenter.com/wgct.htm). The WGCTA is also extensively founded in studies about success in many educational sides to CT such as, the studies that determine the successful strategies in teaching CT skills (Wood, 1981; Heraty & Morlry, 2000). Another study that is also used the appraisal to measure the educational program of health lectures (Sandor, Clark, Campbell, Rains & Cascio, 1998).

Conclusion

Fortunately, thanks to the researchers’ efforts after a long period of time, nowadays, CT can be taught; moreover, it can be even assessed and measured. It has been proved that, the need to recognize, analyze, synthesize, judge, make decisions and solve problems is needed in different educational fields. Particularly, in the foreign language learning environment, hence, the necessitation to apply CT skills in EFL classrooms is undeniable. Accordingly, the EFL teachers’ duty is to be aware of the CT importance on their learners’ outcome, and select successfully a strategy from the plentiful proposed strategies in order to help them boost their CT skill.
CHAPTER THREE
Filed Work

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Introduction

The preceding two chapters touched on general context of the OMP CAT and its relation with learners’ CT enhancement. Although, after carrying out a deep search, there was no empirical study on the influence of this technique on CT. This chapter is dedicated to the research design implemented that aims to investigate the effectiveness of the OMP in empowering EFL learners’ ability to critically think. It is divided into three parts; the first part contains the description of the experimental design implemented, the choice of population, the procedure relying on, and the instrument used. The second part is devoted to the results founded and its analyses. Finally, the last part includes the discussion of the data, the limitations of the study, and further suggestions for implementation.

3.1 Methodology

3.1.1 Sample Population

The population targeted in this study was 2nd year license of the Algerian English department of Larbi Ben Mhidi University. The selection of 2nd year students rather than 1st year or the other higher levels was under particular considerations. The first reason is that, since the present study is aiming at investigating the impact of the OMP CAT on enhancing students critical thinking, then, 2nd year license students are the most appropriate, because they are post beginners i.e. their level is not too high, and this may help in achieving the validity and reliability of the results, in the fact that, our purpose is to move students from low level thinkers to high level thinkers (critical thinkers). On the other hand using such a technique at this stage considered not too late in order to prepare students to critically think during the rest of their career and even in their future life. Most importantly, in 1st year stage of learning the foreign language, there is deficiency of CT because students are occupied with memorizing vocabulary and grammar rules and there are not sufficient opportunities to think.
critically, consequently, it is affirmed that CT is more likely to take place in post beginners level (2nd year students) because there are more areas for discussions, reflections, giving comments, and sharing opinions with their classmates and teachers, and even students are qualified to do so (Alana, 2010). The suggested technique (the OMP) provides all those conditions.

Additionally, the students’ level at this phase is not too low in which they may be unfamiliar with the critical thinking process, i.e. they are aware enough about what is meant by the concept of critical thinking; accordingly, they may interact easily with the technique using that concept.

Accessibility and the big member of 2nd year students are also considered one of the reasons, where facilitations from the teacher in giving some of his time to conduct the technique in his sessions were possible. And the largest member of the population on the other hand may be helpful in terms of abundance that facilities the selection of the sample.

3.1.2 Research Design and Instruments

3.1.2.1 Research Questions and Hypotheses

Does the OMP CAT have any effect on developing EFL students’ critical thinking?

How does the OMP formative assessment technique move EFL students from passive and recipient toward productive and critical thinkers?

According to the previous questions the following hypotheses came up.

The Alternative Hypothesis (H1)

H1: The implementation of the OMP (CAT) would enhance EFL students’ critical thinking.

The Null Hypothesis (H0)
H0: The OMP (CAT) would not have any effect on EFL students’ level of critical thinking.

To accomplish the research aim, a quantitative study should be carried out following the quasi experiment pre-test, post-test design

3.1.2.2 Research Design

3.1.2.2.1 Choice of the Quasi Experimental Design

It was worth mentioning that this research is aimed at investigating the impact of the OMP CAT on enhancing EFL students’ critical thinking. A quasi experiment has been chosen where there was no randomization in selecting participants to treatment and control groups because of some practical and ethical barriers such as time constraints and administrative restrictions that made the conduction of a true experiment excessively impossible, however, the experimental approach has been carried out is generally well accepted if done well and presented clearly, that is to say, making explicit the limitations and how they affect the results. (Ladico, Spaulding, & Voegtle 2006, p. 185)

Table 3.3. Nonrandomized Control Group, Pretest–Posttest Design (adapted from Ary, Jacobs, and Sorensen, 2010, p. 316)

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest</th>
<th>independent variable</th>
<th>post test</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Y1</td>
<td>X</td>
<td>Y2</td>
</tr>
<tr>
<td>C</td>
<td>Y1</td>
<td>/</td>
<td>Y2</td>
</tr>
</tbody>
</table>
Like it is illustrated in the table, pretest (Y1) is given to both groups E (experimental group) and C (control group), the treatment (X) was administered to improve critical thinking to experimental group only, and then critical thinking post test is given to both groups to define the effect of the IV(OMP) on the DV(students’ critical thinking).

Other impotent reasons behind choosing the experimental approach rather than the other approaches is that, first, the majority of the founded studies about the concept of CT in the educational settings were descriptive studies, like questionnaires, interviews, correlation studies, and so on. Whereas, the empirical studies about that concept were very rare, because of the belief that CT is hard to be assessed or measured, whereas in fact, this was anciently. Newly, researchers did their best to create valid tests to test people’s thinking tangibly; one of them is the Watson-Glaser's Critical Thinking Appraisal, the one used in our experiment.

The second reason which is more practical is that, the OMP technique (our research IV) is a new technique that had never been used in our department so; neither teachers nor students have been experienced using this technique. Accordingly we cannot get benefit from them to collect the data if we conducted an interview or questionnaire, as an example. Consequently, there was a need to implement the OMP with some sample from that department and we affirmed our decision to conduct an experimental study.
The following figure will represent the present studies’ quasi-experimental approach.

**Figure 3.4 Outline Of the Research’s Plan**

**3.1.2.2.2 Instruments**

The Watson-Glaser's Critical Thinking Appraisal (WGCTA) (Form B) was implemented to evaluate Students’ critical thinking ability. The original test comprises 85 questions, but only 45 needed questions was chosen. (See Appendix.1 The Watson Glaser Critical Thinking Appraisal). The test consists of 5 sections as clarified in the following table:

**Table 3.4. the sections of CTA along with the corresponding descriptions (Watson and Glaser, 1980)**
The five subtests were given in a form of an exercise; it includes a statement of arguments, problems, assumptions, and interpretation of data like thus founded in the classroom, at work, and magazines and newspaper articles on daily facts (see Appendix.1 Critical Thinking appraisal). The WGCTA includes items’ content of diverse types such as, natural content like weather, scientific facts, and other issues that most people do not have previous idea or strong believe, disputed content, items of logical content related to economical, political, and social affairs that evoke the strong perception (Watson and Glaser, 1980).

Participants were offered to read the instruction preceding each section and answer the questions. There are total of 45 questions in this test and the answerer should aims to correctly answer as many questions as he can within 40 minutes.
Subtest one: Inferences

The questions in this section will start with a statement of facts that have to be considered as true. After each statement the answerer will be presented with possible inferences which might be drawn from the facts in the statement. He will analyze each inference separately and decide on its degree of truth. For each inference, 5 possible answers will be provided: True, Probably True, More Information Required, Probably False, and False.

Subtest two: Assumptions

In this section the answerer will be provided with a number of statements, each statement will be followed by a series of proposed assumptions, he has to choose which assumptions are logically justified based on the evidence in the statement. For each assumption there are 2 possible suggestions: “Assumption Made” or “Assumption Not Made”.

Subtest three: Deduction

In this section, a statement will be provided following by a series of suggested conclusions, where the answerer must choose the statement to be true after reading each conclusion than he have to tick, “Conclusion Follows” or “Conclusion Does Not Follows”.

Subtest four: Interpreting Information

In this section the questions will consist of a passage of information, followed by a set of conclusions. If there is a doubt that the conclusion is most reasonable, then the answerer will tick, “Conclusion Follows”, if he thinks that the conclusion is unreasonable, he will select “Conclusion Does Not Follows”
Subtest five: Analyzing Arguments

In this section, each question is followed by a series of arguments, if the argument seems convincing, the answerer will choose “Strong Arguments”, and if the argument seems unconvincing then he will select “Weak Argument”.

The test is on 45 points, one point for each correct answer, if the answerer ticked the wrong suggestion he will get 0.

To achieve the reliability of this appraisal, we informed the students that the test has no influence on their averages in order to avoid stress and anxiety, yet we explained the importance of their participation in our study. We clarified the aim of our research and what is required of them during the first 12 minutes to situate the students in the framework of research. Most of the students finished in less than 40 minutes.

3.1.3 Procedures

3.1.3.1 Pre-test

A WGCTA was given as a pre-test (see Appendix.1) at the first session to the control group on Monday 18 February and experimental group in the following day on 19 February the year of 2018 to test their critical thinking ability and to determine whether students' abilities of both groups were equivalent or not. The critical thinking test will assess their ability to make inferences and assumptions and to reason logically with arguments (see Table.3.4)

3.1.3.2 Treatment Period

The treatment period absorbed 6 sessions from 26 February to 09 April after the holidays, one session of an hour and half each week. In fact, it would be better if we expended more than 6 sessions, at least 8 sessions instead, but unfortunately this was impossible...
because of the constricted time, and students were studying the linguistic module one session per a week only.

3.1.3.2.1 The Experimental Group Treatment

In the first session after the pre-test immediately, the experimental group undertook the linguistic lessons with the exposure of the OMP classroom assessment technique. After they dealt with the lecture they were asked by the researcher to respond to the OMP’s questions expending one minute of time while responding and then hand the papers back. When the technique was implemented at the first time, the students only answered its questions in the last five minutes. Whereas, in the next sessions, there was a discussion about the questions raised in the previous class at the first few minutes before starting a new lecture. The OMP’s questions were as the following:

<table>
<thead>
<tr>
<th>1-What was the most important thing I learned?</th>
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<td>......................................................................................................................................................</td>
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<td>......................................................................................................................................................</td>
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<table>
<thead>
<tr>
<th>2-What question is unanswered?</th>
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<td>......................................................................................................................................................</td>
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Or;
As it is noted the questions raised in the OMPs are questions that impose the students to think critically, that is to say; infer, synthesize, analyze, summarize, evaluate, and raise higher level questions. They are questions chosen purposely for that sake and to reach the aim of our study.

It should be noted that the choice of the linguistic module in particular rather than the other modules was as a result of that in the linguistic lectures in general and the 2nd year linguistic program at El Arbi Ben Mhidi university in particular contains large areas that evoke students to think critically, the content was referring to the linguists theories about the language where students have to criticize, analyze, and evaluate those theories using their critical thinking. To clarify, when the OMP was under implementation, the targeted sample
was receiving the lectures of Bloomfield when he excluded the study of meaning and he was only interested in the structural description of the language (Behaviorism). The students then were discussing giving their opinions about the Bloom’s notion, its weaknesses and strengthens and asking a worthy critical questions about it in their OMPs. (See Appendix.2).

The researcher contributed in attending the whole session through the treatment period, observing the technique’s proceeding, focusing on how well the students are interacting and participating in the discussion. Accordingly, it has been observed that the students consent positively with the technique either in responding interestingly to its questions (see Appendix.2) or in participating interactively in the dissections. The discussion and the lecture presentation were administered by the teacher and the researcher took part in fulfilling the management of the experimental tool IV; the OMP at the end of class. When she reverts home, she commences analyzing the students’ responses taking into consideration the most frequent questions were raised in addition to the important comments. The students’ analyzed replies were then given to the teacher in the coming session to discuss the questions raised and provide the answers in a form of in class group discussion.

3.1.3.2.2 The Control Group Treatment

The control group on the other hand was taking the same linguistic lectures by the same teacher, but in a traditional way i.e. without any exposure to a classroom assessment technique.

3.1.3.3 Post Test

After accomplishing the treatment period, we earmarked another session for the post-test. The same critical thinking pre-test was administered to both groups. This post-test is conducted in order to test and compare whether our implemented tool (the OMP) had an effect of fostering the students’ critical thinking.
3.2. Data Analyses

To test the research’s hypothesis, an experimental study was required, the latter dictates for both groups to conduct a pre-test and a post-test. Besides, we relied on “the inferential statistics” where we adopted the two types of T-test. The first one called: “the Independent T-test” used to compare the scores of different groups (Control and Experimental group). While the second is the “Paired Sample T-test”, it calculates the difference between the pre-test and the post-test of each single group. The T-test aims to discover if there is a significant difference that is to say; (calculating the alpha). Our study’s alpha is $\alpha = 0.05$, there is only 5% degree of risk that the difference is from another facture, and 95% degree of confidence in the obtained results are due to the treatment (the implementation of the OMP) and not due to chance. From there, we will compare the (p-value) to alpha; if the p-value is less than alpha ($p < 0.05$) then the null hypothesis should be rejected because of the significant difference between the two means, whereas, if the p-value is greater than alpha ($p > 0.05$), then the null hypotheses would be accepted, because there is no significant influence of IV of our study (the OMP) on the DV (students’ CT)

3.2.1 Results of the Pre-test

Table 3.5. Participants’ Scores in the Pre-test

<table>
<thead>
<tr>
<th></th>
<th>Control Group</th>
<th>Pre-test</th>
<th>Excremental Group</th>
<th>Pre-test</th>
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<tbody>
<tr>
<td>1</td>
<td>21</td>
<td>1</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>19</td>
<td>2</td>
<td>16</td>
<td></td>
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<td>3</td>
<td>23</td>
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<td>4</td>
<td>20</td>
<td>4</td>
<td>16</td>
<td></td>
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<tr>
<td>5</td>
<td>23</td>
<td>5</td>
<td>18</td>
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The (Table 3.5) represents the pre-test scores of the experimental and the control group. The pre-test is designed to know the level of participants in both groups before the treatment.

In this part, the means ($\bar{X}$) and ($\bar{Y}$) were calculated and compared as it was shown in the previous (Table 3.5) to find out the difference between the obtained results in the

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<td>15</td>
<td>6</td>
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<td>18</td>
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<td>8</td>
<td>23</td>
<td>8</td>
<td>19</td>
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<td>9</td>
<td>19</td>
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<td>16</td>
<td>12</td>
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<tr>
<td>20</td>
<td>24</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

Mean = 19
SUM = 380
SD = 3.641
Variance = 13.263

Mean = 19.7
Sum = 394
SD = 3.147
Variance = 9.905
experimental and control group. In fact the data of our research were calculated using the SPSS program, whereas the procedure will be explained manually as the following

\[ X = \frac{\sum x_i}{N_1} \] ................................. Mean of the experimental group.

\[ Y = \frac{\sum y_i}{N_2} \] ................................. Mean of the control group.

\[ d = x_1 - x_2 \quad \text{Or} \quad y_1 - y_2 \] ................................. Difference between the individual scores.

\[ d = X - Y \] ................................. Difference between the means (katz, 2006, p. 31).

So after we applied the equations we concluded the following

\[ X = \frac{\sum x_i}{n_1} \rightarrow X = 19.7 \]

\[ Y = \frac{\sum y_i}{n_1} \rightarrow Y = 19 \]

\[ d = Y - X \rightarrow d = 0.7 \]

 Accordingly, the two groups’ means in the pre-test are:

- Control group \( \bar{X} = 19 \)

- Experimental group \( \bar{Y} = 19.7 \)

- The difference between the two groups’ means is \( d = 0.7 \)

This indicated that the two groups’ level in the pre test is approximately similar \( \bar{X} \approx \bar{Y} \), the experimental group with a mean (pre) \( \bar{x} = 19.7 \) and the control group with a mean (pre) \( \bar{y} = 19 \) and the mean difference \( d = 0.7 \) is not significant. Besides, the minimum score for
the control group is (11) and for the experimental group is (10). Whereas, the maximum score for the control group is (24) and for the experimental group is (24). In order to confirm these results, comparing the means only is not enough, “the independent-sample t test” is required.

To do it, we may allow the procedures suggested by Dress (2007)

The null $H_0$ and the alternative $H_1$ hypotheses:

$$H_0: u_1=u_2 \quad \quad H_1: u_1 \neq u_2$$

Calculating the means, $\bar{X}$, $\bar{Y}$ and the variances: $S_X^2$, $S_Y^2$:

$$X = \frac{\sum x_i}{n_i} \quad \rightarrow \quad X = 19.7$$

$$S_X^2 = \frac{\sum x_i^2}{n_i} - \bar{X}^2 \quad \rightarrow \quad S_X^2 = 9.905$$

$$Y = \frac{\sum y_i}{n_i} \quad \rightarrow \quad Y = 19$$

$$S_Y^2 = \frac{\sum y_i^2}{n_i^2} - \bar{Y}^2 \quad \rightarrow \quad S_Y^2 = 13.263$$

Calculating t value:

$$T = \frac{\bar{X} - \bar{Y}}{\left(\frac{S_X^2}{N_1} + \frac{S_Y^2}{N_2} \right) \left(\frac{1}{N_1} + \frac{1}{N_2}\right)} \quad \rightarrow \quad T = 0.65$$

Comparing the $t_{table}$ with the $t$ value ($t_{statistic}$):

Degree of freedom dll $N_1 + N_2 - 2 \quad \rightarrow \quad dll = 38$
\[
yields \quad \text{t}_{\text{table}} = 2.02 \quad \text{when } \alpha = 0.05 \text{ (95%).}
\]

\[
yields \quad (t_{\text{statistic}} < \text{t}_{\text{table}} \text{ since } t_{\text{statistic}} = 0.65)
\]

The following table will summarizes the t-test of control verses experimental group in the pre-test

**Table 3.6 Independent Samples Test control Vs Experimental group pre-test**

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.692</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>.650</td>
</tr>
</tbody>
</table>

The total number of both participants from both groups is 40. Therefore, when entering at t table a degree of freedom at df= 38 and the level of probability at \( \alpha = 0.05 \), we get the critical t value of 2.021. Evidently the t statistic < t observed: \( 0.65 < 2.02 \)

The results confirm that there is no significance between the two groups in the pre-test. As a result, students in both groups have approximately the same level. Subsequently, there is no doubt that the development or the changes that may arise in the post-test are due to the treatment period, i.e., our implemented technique (the OMP). The finding will be clarified by the following diagram:
Figure 3.5 Pre-test Scores Distribution

3.2.2 Results of the Post-test

This test is organized to know the level of EFL students in both groups after the treatment period.

Table 3.7 Control Group versus Experimental Group Scores on the Post-test

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Post-test</th>
<th>Experimental group</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>2</td>
<td>22</td>
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<tr>
<td>3</td>
<td>23</td>
<td>3</td>
<td>25</td>
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<tr>
<td>4</td>
<td>22</td>
<td>4</td>
<td>23</td>
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<tr>
<td>5</td>
<td>23</td>
<td>5</td>
<td>21</td>
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<tr>
<td>6</td>
<td>17</td>
<td>6</td>
<td>27</td>
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<tr>
<td>7</td>
<td>20</td>
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<td>26</td>
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<td>8</td>
<td>24</td>
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<tr>
<td>9</td>
<td>21</td>
<td>9</td>
<td>26</td>
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<td>10</td>
<td>20</td>
<td>10</td>
<td>27</td>
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<td>11</td>
<td>17</td>
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<td>12</td>
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<td>24</td>
<td>14</td>
<td>39</td>
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<tr>
<td>15</td>
<td>21</td>
<td>15</td>
<td>29</td>
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<tr>
<td>16</td>
<td>20</td>
<td>16</td>
<td>35</td>
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<tr>
<td>17</td>
<td>14</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>18</td>
<td>12</td>
<td>18</td>
<td>37</td>
</tr>
<tr>
<td>19</td>
<td>16</td>
<td>19</td>
<td>40</td>
</tr>
<tr>
<td>20</td>
<td>19</td>
<td>20</td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean=19.80</th>
<th>Mean=27.85</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum=396</td>
<td>Sum=557</td>
</tr>
<tr>
<td>SD=3.3</td>
<td>SD=5.696</td>
</tr>
<tr>
<td>Variance=10.9</td>
<td>Variance=32.45</td>
</tr>
</tbody>
</table>

This table represented the post-test scores of the experimental and the control groups. In the post-test, the students’ scores have changed globally and individually. The experimental group with a Mean (post)= 27.85 and the control group with a Mean (post)= 19.8. It can be observed that the scores of the experimental group are higher than the scores of the control group. It can be also noticed that the highest score for the control is (24) and for
the experimental group is (40). Whereas, the lowest score for the control group is (12), and for the experimental group is (21). These results will be confirmed later in the paired sample T-test (see Table.12). For more clarification the following figure is drown:

![Figure 3.6 Post-test Scores Distribution](image)

**Figure 3.6 Post-test Scores Distribution**

### 3.2.3 Control Group’s Difference Scores between the Pre-test and the Post-test

**Table 3.8 Control Group pre-test Vs Post-test**

<table>
<thead>
<tr>
<th>Control group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>19</td>
<td>18</td>
<td>-1</td>
</tr>
<tr>
<td>3</td>
<td>23</td>
<td>23</td>
<td>0</td>
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<td></td>
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<tr>
<td>4</td>
<td>20</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>23</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>15</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>18</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>23</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>19</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>18</td>
<td>20</td>
<td>2</td>
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<tr>
<td>11</td>
<td>19</td>
<td>17</td>
<td>2</td>
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<tr>
<td>12</td>
<td>21</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>22</td>
<td>20</td>
<td>-2</td>
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<tr>
<td>18</td>
<td>15</td>
<td>12</td>
<td>-3</td>
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<tr>
<td>19</td>
<td>17</td>
<td>16</td>
<td>-1</td>
</tr>
<tr>
<td>20</td>
<td>24</td>
<td>19</td>
<td>-5</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean= 19</td>
<td>Mean= 19.7</td>
<td>Mean difference= 0.8</td>
</tr>
<tr>
<td>Sum= 380</td>
<td>Sum= 394</td>
<td>Sum= 22</td>
</tr>
<tr>
<td>SD= 3.642</td>
<td>SD= 2.633</td>
<td>SD= 2.633</td>
</tr>
<tr>
<td>Variance= 13.263</td>
<td>Variance= 10.905</td>
<td>Variance= 6.937</td>
</tr>
</tbody>
</table>
In order to see whether or not the control group scores have changed in the posttest, the following comparison of the means ought to answer this question:

\[ \bar{Y}_{pre} = \frac{\sum y_i}{n} \rightarrow \bar{Y}_{pre} = 19 \]

\[ \bar{Y}_{post} = \frac{\sum y_i}{n} \rightarrow \bar{Y}_{post} = 19.8 \]

\[ \bar{d}_{cont} = \bar{Y}_{post} - \bar{Y}_{pre} \rightarrow \bar{d}_{cont} = 0.8 \]

As revealed in (Table.3.8), the control group scores in the post-test are higher than the control group scores in the pre-test. It is found that the pre-test mean is (\(\bar{Y} =19\)), and the post-test mean is (\(\bar{Y} =19.8\)). The difference between the pre-test and post-test scores for each participant has been calculated in (Table.3.8) The mean difference score is (\(d=0.8\)).

![Figure 3.7](image) Scores, Differences in the Pre and Post-test for Each Participant in the Control Group
(Figure.3.7) has expressed clearly the difference between the control group scores in the pretest and posttest, it is also observed that; the students’ difference scores is not stable i.e.; it differs from one student to another. To see whether this difference is significant, we were obliged to use the paired sample t-test as it is shown in the following table.

**Table.3.9 Paired Samples T-test control group pre-test Vs post-test**

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1 conpostContrpre</td>
<td>.80000</td>
<td>2.74533</td>
<td>.61387</td>
<td>- .48485</td>
<td>2.08485</td>
<td>1.303</td>
<td>19</td>
</tr>
</tbody>
</table>

(Table.3.9) has expressed evidently the non-significant difference between the control group scores in the pretest and posttest, at which, When we entered at t table a degree of freedom at 19 and the level of probability at 0.05, we get the critical t value of 2.861. Evidently the t statistic < t observed: 1.303 < 2.861

So, the control group pre-test and post-test have approximately the same level.

This indicated that, the traditional method used in this group has no effect on student CT development.
### 3.2.4 Experimental Group’s Difference Scores between the Pre-test and the Post-test

#### 3.2.5 Table 3.10: Experimental Group pre-test Vs Post-test

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>23</td>
<td>7</td>
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<tr>
<td>5</td>
<td>18</td>
<td>21</td>
<td>3</td>
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<td>6</td>
<td>22</td>
<td>27</td>
<td>5</td>
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<tr>
<td>7</td>
<td>20</td>
<td>26</td>
<td>6</td>
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<tr>
<td>8</td>
<td>19</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>26</td>
<td>6</td>
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<tr>
<td>10</td>
<td>20</td>
<td>27</td>
<td>7</td>
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<tr>
<td>11</td>
<td>21</td>
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<td>8</td>
</tr>
<tr>
<td>12</td>
<td>22</td>
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<td>8</td>
</tr>
<tr>
<td>13</td>
<td>21</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>24</td>
<td>39</td>
<td>15</td>
</tr>
<tr>
<td>15</td>
<td>20</td>
<td>29</td>
<td>9</td>
</tr>
<tr>
<td>1</td>
<td>22</td>
<td>35</td>
<td>13</td>
</tr>
<tr>
<td>17</td>
<td>17</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>18</td>
<td>22</td>
<td>37</td>
<td>15</td>
</tr>
<tr>
<td>19</td>
<td>23</td>
<td>40</td>
<td>17</td>
</tr>
</tbody>
</table>
Foremost, starting by calculating the means and their difference in pre and post-test:

\[
\bar{X}_{\text{pre}} = \frac{\sum x_i}{n_2} \quad \rightarrow \quad \bar{X}_{\text{pre}} = 19.7
\]

\[
\bar{X}_{\text{post}} = \frac{\sum x_i}{n_2} \quad \rightarrow \quad \bar{X}_{\text{post}} = 27.85
\]

\[
\bar{d}_{\text{cont}} = \bar{X}_{\text{post}} - \bar{X}_{\text{pre}} \quad \rightarrow \quad \bar{d}_{\text{cont}} = 8.15
\]

From (Table.3.10), we can realize that there is a visible difference between pre and post-tests’ means of the experimental group. This difference is belonged to students’ progress during the treatment period. For more explanation, the following figure symbolize the comprehensive differences between each individual pretest and posttest scores in the experimental group.
Figure 3.8 Scores Differences in the Pre and Post-test for Each Participant in the Experimental Group

Relying on the results of the (Table 3.10) and the (Figure 3.8), it has been clarified that the experimental group scores in the post-test are higher than the scores of the pre-test. The mean of the pre-test is ($\bar{X}_{\text{pre}} = 19$), whereas, the mean of the post-test is ($\bar{X}_{\text{post}} = 27$). The difference between the pre-test and post-test scores for each student have been calculated in (Table 3.10), the Mean Difference score is ($d = 8.1$). To examine the validity of our hypothesis and the effect of our experimental tool (the OMP), we adopted the Paired Sample T-test.

Table 3.11 Paired Samples Test

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>T</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Deviation</td>
<td>8.15000</td>
<td>4.24605</td>
<td>.94945</td>
</tr>
</tbody>
</table>

Pair 1: Experimental Group Post-test - Experimental Group Pre-test
The total number of the targeted group for the treatment is 20. Therefore, the degree of freedom (DF = N - 1) is 19, and the level of probability is (p = 0.05). Consequently, the t value would be 2.093. So, in comparing the t statistic and the t table, 8.58 > 2.093 From these results, it is seen that there is a significant change from the pre-test to the post-test. So, undoubtedly the participants in the experimental group have benefited from the treatment period (the OMP). In view of that, the main hypothesis is accepted, thus the null hypothesis is rejected. In other words, the treatment (the OMP technique) had a significant effect on the experimental group.

However, in order to investigate the significance of the difference between the experimental and the control group’s post-test means, an independent sample t-test is calculated.

### Table.3.12 Independent Samples T-test

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>4.247</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>5.468</td>
</tr>
</tbody>
</table>

The total number of both participants from both groups is 40. Therefore, when entering at t table a degree of freedom at 38 and the level of probability at 0.05, we get the critical t value of 2.021. Evidently, the t observed is higher than the critical value: 5.468 >
2.021, it is found that the $t_{\text{statistics}} > t_{\text{table}}$. This results at the rejection of the null hypothesis. In essence, there is a 95% probability that the observed mean difference was due to the manipulation of the independent variable. Moreover, there is only 5% probability due to chance. Thus, the use if the OMP has enhanced students’ critical thinking.

3.3 Discussion

The conducted study was empirical where we relied on the pre-test/post test design to examine the impact of the OMP on developing EFL university students’ critical thinking. This design is aimed to confirm the previously mentioned hypotheses, in view of that; according to the research findings, it has been dictated that the null hypothesis should be accepted.

After we did our statistical analyses using the SPSS program to measure and compare the scores of the control and the experimental group in the pre-test and the post-test phases, we came up with the following results. At the outset, from the (Table3.5) and (Figure3.5) it has been confirmed that the experimental and control group started the treatment with approximately the same level, $\bar{X} \approx \bar{Y}$ where $\bar{X} = 19.7$ and $\bar{Y} = 19$ consequently the mean difference $d = 0.7$ is not significant. Moreover, the minimum score for the control group was (11) and for the experimental group was (10). On the other hand, the maximum score of the control group was (24) and for the experimental group was (24) too. The inferential analysis of “the independent-sample t test” was carried out among the pretests of both groups in order to confirm the results. To be exact, "$t_{\text{statistic}} < t_{\text{table}}$", that is to say, the null hypothesis is accepted and the difference between the two groups is not noteworthy. Hereof, we assured that any appeared progress or variation in the pretest scores of the experimental group would be related to the manipulation of the independent variable (the OMP).

Then another descriptive statistical analysis used in the control group scores of the pre-test and post-test. This analysis discovered that there was a slight but not significant
advancement of the control group participant’s mean in the post-test, the pre-test mean was (Ȳ =19), and the post-test mean was (Ȳ =19.8). The mean difference score was (d=0.8). To be precise the majority of the control group participant’s scores have been increased, on the contrary, some of them decreased to lower marks and a few of them they get the same mark they got in the pre-test. As a result, it is concluded that the reason behind student who their marks improved was due to other effects rather than the outcome of the traditional method, like; they get familiar with the test because they previously took it as a pre-test, they concentrated more comparing to the pre-test, they were more motivated and so on. The later assumptions were confirmed after we adopted the “paired sample t-test” at which the degree of freedom was 19 and the level of probability was 0.05, we get the critical t value of 2.861. Evidently the t statistic < t observed: 1.303 < 2.861. Accordingly, we accepted the null hypothesis and we confirmed that there is no significance difference between the pre-test and the post-test, i.e., the control group’s pre-test and post-test have approximately the same level.

Moving to the descriptive analysis of the experimental group scores in the pretest and posttest, the test demonstrated positive results concerning students’ improvement in this group. (Tabel.3.10) and (Figure.3.8) presented evidently the significant difference between the pretest and posttest scores. At which the mean of the pre-test was (X̄pre =19), while, the mean of the post-test was higher (X̄post = 27), so the mean difference score was (d=8.1) which indicated a significant change from the pre-test to the post-test. So, depending on these results, definitely the participants in the experimental group have promoted from the treatment period (the OMP).

The previously mentioned results are also confirmed by the paired sample t test. It was worth mentioning that the experimental group number is 20. Hence, the degree of freedom (DF =N-1) is 19, and the level of probability is (p =0.05). Thus, the t value is 2.093. So, in
comparing the $t_{\text{statistic}}$ and the $t_{\text{table}}$ $8.58 > 2.093$ the findings confirmed that the alternative hypothesis is accepted, apparently, the null hypothesis is rejected. We can conclude that students who used (the OMP) their critical thinking have been improved.

To be more accurate, we relied on the independent sample t-test in comparing the control and experimental group means and check whether the experimental group has improved after the treatment, and so, deciding about the exception or the rejection of our first hypothesis, the gained findings were similarly positive in the fact that, the degree of freedom at 38 and the level of probability at 0.05, we get the critical $t$ value of 2.021 principally the $t_{\text{observed}}$ was higher than the critical value: 5.468 $> 2.021$ i.e. $t_{\text{statistics}} > t_{\text{table}}$, therefore, the null hypothesis should be rejected. Most importantly, there was 95% probability that the observed mean difference was outstanding to the manipulation of the independent variable and there was only 5% probability due to chance. As a consequence, our alternative hypothesis was confirmed, namely, the student who used the OMP classroom assessment technique they develop their critical thinking skill better than those who only relied on the traditional method.

In fact, the researcher committed to provide the adequate circumstances as much was possible in all the phases to avoid, participants’ and researcher’s error and bias, which in turn helped in the success of the experiment and the confirmation of the hypotheses were posed. Like; choosing the right time in conducting the tests, more specifically, the tests were done at the morning epoch where students are active and ready to concentrate. We also explained for students full well what they supposed to do, whether in the treatment period or in the tests to avoid the false responses. On the other hand, the data were carefully collected during the correction of the test’s papers. Besides, they were analyzed and interpreted in complete objectivity.
Conclusion

The present study provided evidence about the positive efficiency that the OMP CAT leaves behind the students’ CT skill, in the fact that, students have established a clear enhancement in their ability to critically think after they were exposed to the OMP CAT during the treatment period. This hypothesis was carefully verified and guaranteed using many statistical instruments, of which highlighted the importance of implementing this alternative technique in improving students’ CT. in fact, the well circumstances provided in our study helped greatly to achieve the validity of its findings. However there were some limitations we faced during the investigative journey they will be stated, besides, some ideas for future researches will be proposed.
General Conclusion

The desired aim fulfilled in this study was investigating the role of the OMP as a CAT in rising EFL university students’ CT skill. Therefore, three chapters were handled. The first chapter concerned with the focus of classroom assessment by the use of the OMP, while the second one referred to the concept of critical thinking. Finally, the third chapter was devoted to the interpretation and the analysis of the data’s study collected.

The experimental study have been carried out in Oum El Bouaghi at Larbi Ben M’hidi University with 40 students of English second year license who were divided in to tow groups, one is the experimental and the other is the control group. Both of them passed the pre-test adapted from the WGCTA, and then they undergo a treatment period, where the experimental group was exposed to the OMP CAT while the control group remain using the traditional method, finally; they were post-tested using the same pre-test. The results confirmed that students who were practicing the OMP CAT showed better results in the posttest than those who did not. In addition, this research, in fact, is not the last and single-handed solution to CT effective improvement, but rather it is an opening door for many further investigations in this area using different new strategies. The final word to say concerning the aim of this study is to raise the teacher’s awareness about the importance of improving their student CT ability and how adequately choose the appropriate strategy to do so.
Research limitations

One of the most chief barriers we faced while we carried out our study is time restriction, in the fact that, if we consumed longer time during the treatment period the students will benefit more from the technique and their achievement will be better. Students’ absences on the other hand was an obstacle, in which there were a high number of absences in the post and the pre-test and the treatment period that obliged us to minimize the number of the sample, otherwise, their number would be more representative.

Suggestions for Further Research

There are many interesting areas concerning the use the OMP as a classroom assessment technique still need to be investigated. To begin with, a researcher my implement the OMP in different modules not only in one module, to test its transferability in different context, secondly, since the OMP is a writing activity that assesses students understanding during the learning phase, the investigator may examine its effectiveness on students’ participation, accordingly he may focus on the introvert learners who are shy and avoid speaking in classrooms. The technique also may have an effect on understanding course content modules wherein a canvasser may accomplish an empirical study. Likewise, this technique can be used in the beginning, during, or after a lecture, that is why it may have a role in improving students’ note taking. Several other sides that are supposed to be positively affected when the OMP is implemented, such as, students’ writing skill, self assessment, self regulated learning/self reflection, students’ autonomy and motivation.

It would be better if any empirical study that employs the OMP CAT, takes a longer time during the treatment period to reach the improvement required of the dependent variable.

Additionally, the more the number of the sample is larger the more helpful it is for the representativeness of the results to the whole population.
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Appendixes

**Appendix 1:** The Watson Glaser Critical Thinking Appraisal

**Appendix 2:** the One Minute Paper CAT
Appendix 1: The Watson Glaser Critical Thinking Appraisal

The Impact of the One Minute Paper Classroom Assessment Technique on Enhancing EFL Students’ Critical Thinking

Case Study of Second Year Students of English at El Arbi Ben Mhidi University

A study is conducted to investigate the influence of the One Minute Paper classroom assessment technique on developing EFL learners’ critical thinking skills. This test is an important tool for us to gather information that helps us in reaching the aim behind this study. We would greatly appreciate it if you would answer the questions attentively.

Thank you

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This practice critical thinking test will assess your ability to make inferences and assumptions and to reason logically with arguments. The test comprises the following five sections:

1. Inferences
2. Assumptions
3. Deductions
4. Interpreting Information
5. Argument

To accomplish this test you have just to tick the correct answer. You should also aim to correctly answer as many questions as you can within 40 minutes.
Section 1: Inferences

Statement One:

Although it is agreed that China is rapidly modernizing its army, there is some doubt surrounding the exact amount it is spending. The research institute ‘PIPPI’, submits that the annual Chinese defense spending has risen from almost $31 billion in 2000 to over $120 billion in 2010. This figure is almost double the official figure published by the Chinese government, who fail to include other areas such as research and development in the official figure each year. In 2010, the United States government spent around $400 billion on military defense. Based on the current level of military growth, statistics suggest that China’s defense spending could overtake America’s by 2030. In addition to military spending, China’s army continues to enjoy the largest number of people within the ranks of its army than any other country.

Inference 1: The official figures published by the Chinese government in relation to their military spending are thought to be misleading.

TRUE ☐ PROBABLY TRUE ☐ MORE INFORMATION REQUIRED ☐ PROBABLY FALSE ☐ FALSE ☐

Inference 2: It is known that the Chinese government leave areas such as ‘research’ and ‘development’ from their official figures, however, this would also suggest that other areas of spending are also omitted from the official figure.

TRUE ☐ PROBABLY TRUE ☐ MORE INFORMATION REQUIRED ☐ PROBABLY FALSE ☐ FALSE ☐

Inference 3: The Chinese government omits several key areas from its official spending figures, in areas such as military spending, agriculture, human rights and law.

TRUE ☐ PROBABLY TRUE ☐ MORE INFORMATION REQUIRED ☐ PROBABLY FALSE ☐ FALSE ☐
Statement tow:

Turkey is a surprising addition to the list of rapidly developing economies; with a GDP increase of 8.5% in the year 2011 alone. However, such rapid growth leaves worries regarding possible side-effects. For instance, in 2011 Turkey’s rate of inflation was well above that of its peers. Secondly, there is increasing concern regarding Turkey’s growing dependency on foreign capital. A large portion of the Turkish banking system is part-owned by banks within the Eurozone. As the single currency falters, such a dependency raises questions about the stability of Turkish growth

Inference 1: There are concerns that Turkey’s development is at risk of faltering in the years after 2011.

- True  
- Probably True  
- More Information Required  
- Probably False  
- False  

Inference 2: As Turkish banks are part-owned by those in the Eurozone, they may suffer if the European banks face financial difficulty.

- True  
- Probably True  
- More Information Required  
- Probably False  
- False  

Inference 3: The Turkish banks are part-owned by European banks as this provides greater variation to the market and extra finance to the economy.

- True  
- Probably True  
- More Information Required  
- Probably False  
- False
Statement Three:

Some people think that prospective employees should include a photograph with their application form. Such practice has traditionally been criticised for allowing more attractive individuals to get ahead in their career over ‘plain’ colleagues. However, one study demonstrates that this is, in fact, untrue. Ruffle, the creator of this study, attributes his findings to the ‘dumb-blonde hypothesis’—that beautiful women are thought to be unintelligent. Ruffle submits that companies would be better advised adopting the selection model employed by the Belgian public sector, where CVs are anonymous and candidate names, gender and photographs are not allowed to be included on CVs. Such a model allows the candidate to be selected on factors relevant to the role applied for.

Inference 1: The ‘dumb-blonde hypothesis’ says that more attractive women are less capable of being intelligent.

TRUE ☐ PROBABLY TRUE ☐ MORE INFORMATION REQUIRED ☐ PROBABLY FALSE ☐ FALSE ☐

Inference 2: The model of selecting future employees adopted by the Belgian public sector aims to reduce discrimination based on appearance and gender.

TRUE ☐ PROBABLY TRUE ☐ MORE INFORMATION REQUIRED ☐ PROBABLY FALSE ☐ FALSE ☐

Inference 3: The method of selecting future employees adopted by the Belgian public sector has helped to eliminate discrimination in the Belgian public sector.

TRUE ☐ PROBABLY TRUE ☐ MORE INFORMATION REQUIRED ☐ PROBABLY FALSE ☐ FALSE ☐
Section 2: Assumptions

Statement One:

Monarchic nations, i.e. those with royal families, differ from republican nations in several ways. An example of this difference is that citizens of monarchic nations pay more tax than citizens of republican nations.

Assumption 1: The governments of monarchic nations are responsible for setting tax rates on their citizens.

Assumption Made  [ ]  Assumption Not Made  [ ]

Assumption 2: Republican nations do not have a royal family.

Assumption Made  [ ]  Assumption Not Made  [ ]

Assumption 3: The only types of nation are monarchic and republican.

Assumption Made  [ ]  Assumption Not Made  [ ]

Statement Two:

In 2008, the President of the USA promised to prevent the country entering economic depression, but he failed because at the beginning of 2012, over 12 million USA citizens were unemployed.

Assumption 1: Unemployment is an indicator of economic depression

Assumption Made  [ ]  Assumption Not Made  [ ]

Assumption 2: The number of USA citizens out of work ought to be less than 12 million.

Assumption Made  [ ]  Assumption Not Made  [ ]

Assumption 3: Presidents should stick to their promises.

Assumption Made  [ ]  Assumption Not Made  [ ]
Statement Three:

Chilean students were right in 2012 to stage protests demanding that university education in Chile should be made free.

Assumption 1: Some Universities outside of Chile are free.

Assumption Made ☐ Assumption Not Made ☐

Assumption 2: Staging protests will influence the costs of Chilean university education.

Assumption Made ☐ Assumption Not Made ☐

Assumption 3: Chilean students cannot afford to pay fees for university education.

Assumption Made ☐ Assumption Not Made ☐

Section 3: Deductions

Statement One:

In an attempt to cut expenses, an organisation disbanded its IT department and outsourced its IT function to a business process outsourcing company. In doing so the company has managed to save 20% on its IT function expenditure.

Conclusion 1: Outsourcing functions to business process outsourcing companies will cut expenses

Conclusion Follows ☐ Conclusion Does Not Follow ☐

Conclusion 2: The aim of this company’s outsourcing was to make the organisation more profitable.

Conclusion Follows ☐ Conclusion Does Not Follow ☐

Conclusion 3: The outsourced IT function has saved the organisation 1/5th on their IT function expenditure compared to the in-house IT function.

☐
Statement Two:

Sarah owns a new company. New companies are more likely to fail than well-established companies. Therefore:

**Conclusion 1:** Sarah’s company will fail.

**Conclusion 2:** Sarah’s company is more likely to fail than a well-established company.

**Conclusion 3:** Well-established companies are more likely to succeed than new companies.

Statement Three:

Statistics have shown that companies selling baked goods, such as cakes and pastries, are more likely to be successful if they are advertised as French or Belgian. Therefore:

**Conclusion 1:** French and Belgian products are more expensive.

**Conclusion 2:** French and Belgian baked goods must taste better.

**Conclusion 3:** It is a sound business model to advertise baked goods as “French” or “Belgian” as this is more likely to result in successful sales.
Section 5: Interpreting Information

Statement One:

The Tapoloa Club is a Hawaiian-themed night club in central London. Its most popular drink is the Volcano, which emits sparks and flames. The Tapoloa Club also offers a range of cocktails in perverse containers such as pineapples and coconuts, such as the ‘Coconut Express’ and the ‘Pineapple Pick-Up’ respectively. Therefore:

**Conclusion 1:** The ‘Coconut Express’ is the second most popular drink sold by the Tapoloa Club.

**Conclusion Follows** ☐  **Conclusion Does Not Follow** ☐

**Conclusion 2:** All themed clubs in London sell unusual drinks.

**Conclusion Follows** ☐  **Conclusion Does Not Follow** ☐

**Conclusion 3:** The “Coconut Express” is contained in a pineapple, and the “Pineapple Pick-Up” is contained in a coconut.

**Conclusion Follows** ☐  **Conclusion Does Not** ☐

Statement Two:

The British National Library has the largest collection of publicly-owned books in the United Kingdom. Therefore:

**Conclusion 1:** There might be a larger collection of books in the United Kingdom.

**Conclusion Follows** ☐  **Conclusion Does Not Follow** ☐
**Conclusion 2:** There might be a larger collection of publicly-owned books in the United Kingdom.

Conclusion Follows ☐ Conclusion Does Not ☐
Follow

**Conclusion 3:** The British National Library is in the United Kingdom

Conclusion Follows ☐ Conclusion Does Not ☐
Follow

**Statement Three:**

People with a master’s degree in business administration (MBA) earn an income on average 70% higher than people with just an undergraduate degree. MBA students from top business schools earn an income on average 50% higher than the average income of people with MBAs.

**Conclusion 1:** If a person obtains an MBA, their income will increase.

Conclusion Follows ☐ Conclusion Does Not ☐
Follow

**Conclusion 2:** If a person obtains an MBA from a top business school, their income will be higher than that of the average MBA graduate.

Conclusion Follows ☐ Conclusion Does Not ☐
Follow

**Conclusion 2:** The average income of an MBA graduate from a top business school is over double that of the average income of a person holding only an undergraduate degree.

Conclusion Follows ☐ Conclusion Does Not ☐

**Section 1: Analyzing arguments**
Statement One:

Should companies downsize their workforces to decrease expenses and maximize profits?

**Argument 1:** Yes, downsizing will protect the company from bankruptcy in hard economic times.

- Strong Argument □
- Weak Argument □

**Argument 2:** Yes, companies have no obligation to employ more people than it can handle.

- Strong Argument □
- Weak Argument □

**Argument 3:** No, downsizing leads to demoralization of the workforce and causes a drop in employee productivity.

- Strong Argument □
- Weak Argument □

**Argument 4:** Yes, companies which have no control over the size of their workforce will be highly vulnerable to economic climates and market changes.

- Strong Argument □
- Weak Argument □

Statement Two:

Should university-level education be free to all students?

**Argument 1:** No, too much education can lead to over-qualification, and therefore unemployment.

- Strong Argument □
- Weak Argument □

**Argument 2:** Yes, having a highly qualified workforce ensures high levels of employee productivity in organizations.

- Strong Argument □
- Weak Argument □
**Argument 3:** No, research has shown that students that are not required to pay tuition fees; tend to slack off more and learn less during their degree.

<table>
<thead>
<tr>
<th>Strong Argument</th>
<th>Weak Argument</th>
</tr>
</thead>
</table>

**Statement Three:**

**Should employers allow all staff the option of flexi-time working hours?**

**Argument 1:** Yes, giving staff greater flexibility will improve their work-life balance, and therefore their productivity.

<table>
<thead>
<tr>
<th>Strong Argument</th>
<th>Weak Argument</th>
</tr>
</thead>
</table>

**Argument 2:** Yes, organizations that value their staff are on average more productive and show lower staff turnover.

<table>
<thead>
<tr>
<th>Strong Argument</th>
<th>Weak Argument</th>
</tr>
</thead>
</table>

**Argument 3:** No, flexi time leads to employees working fewer hours. Working fewer hours will decrease an employee’s exposure to the workplace, making career progression harder and leading to a less experienced workforce.

<table>
<thead>
<tr>
<th>Strong Argument</th>
<th>Weak Argument</th>
</tr>
</thead>
</table>
Appendix 2: the One Minute Paper CAT

1- What was the most important think I learned?

...The most important thing I learned is...learn to...

2- How does what I learned in this course related to my own experience?

...The course...

3- What specific questions do I have?

...
1- What was the most important thing you learned?

The most important thing I've learned is about the... evolution... of human language... and how it influences us today.

2- What question is unanswered?

The question is about the... influence... of culture... and how it shapes... language... and influences us today...
1- What was the most important thing you learned?

The most important thing I've learned is about

Her...stimulus...S. Province...reality...r. and it...

Town...inner...linguistic...S. Province...practice...r.

2- What question is unanswered?

The question is about the claims of Bloomfield and how his study is influenced by his...

Psychology

1- What was the most important thing you learned?

The most important thing I learned is that the practical element that preceded the study of science and the approach and the practical relates to studying a city of peace...

2- What question is unanswered?

Who, Bloomfield, influenced by the principle of the behaviorism in his definition of language? What are the criteria of... L.E.A.?
1. What was the most important thing you learned?

The most important thing I learned is that Bloomfield's theory that the language is a societal product is behaviorism.

3. What specific questions do I have?

So, in order to produce a primary language, I would think that we need to understand the structure and function. How do we understand it?

---

1. What was the most important thing I learned?

the most important thing which I learned is that Bloomfield's theory that the language is a societal product is behaviorism.

2. What question is unanswered?

I still don't understand very well the relationship between sound or something like that... Actually... I think that this is a very complex and being possible, but I\'m afraid to lose this year because of this Howell module.
1- What was the most important thing you learned?

we apply the chaos field, its act of speech, and how
he claims that the language is study independent from
psychology, and he use it, his study, to show how language
functions and it works.

2- What question is unanswered?

I.5. that any other option... concerning......
the relationship between the practical events
and the practical reaction..............

1- What was the most important thing I learned?

the grammatical frame..............................
..........................................................
..........................................................

2- How does what I learned in this course related to my own experience?

I learned what is inherent, good, consistent, good, how it
proceeded correctly..............................
..........................................................

3- What specific questions do I have?

I didn't understand very well, the part of... when we discussed
not saying, complaining, and some of the good, consistent, and good
also the grammatical function........... it is hard to understand..................
1- What was the most important thing you learned?

Each event comprising act of speech precedes by a practical event... C The cause of act and reaction... Remains gives... The example of... Stimulus and response... To illustrate this more...

2- What question is unanswered?

... How to manage the act and reaction of people...

1- What was the most important thing I learned?

"I think the lesson of today is very easy... it talk about... the "I.C.A" which means immediate constituent analysis which have... Immediate constituents... ultimate constituents..."

2- How does what I learned in this course related to my own experience?

The sentence can divided into: 

- Noun phrase, verb phrase...
- Noun phrase, verb phrase...

3- What specific questions do I have?

What is the relation between miracle and miracle with...
Résumé

Ce mémoire de recherche a pour objectif la valorisation et le développement des techniques de recherche dite « jugement analytique » chez les étudiants des lettres et des langues étrangère et spécifiquement, qui font formation en EFL. Cela vu l'importance de cette faculté en dernier, surtout dans leur processus pédagogique, cette technique de recherche critique permet aux étudiants de mieux acquérir cette langue vivante selon les méthodes appliquées. C’est dans ce dessein que les professeurs procurent des stratégies méthodiques et efficaces.

Afin de permettre ces techniques de recherche de s’intégrer dans le processus pédagogique en se fondant sur ce qui est proposé, la stratégie consiste à l’exécution et la mise en œuvre la technique de recherche dialectique en classes et pendant les cours d’anglais, cela permettra les développer progressivement d’une façon notable, en se servant de preuves, on a suivi l’application de cette technique dans une classe de 40 étudiants d’anglais « deuxième année licence » de l'université Labri Ben Mhidi à Oum El Bouaghi, la classe s’est divisé en deux groupes égaux, une spécialiste a entamé un examen pour établir ou définir avec précision les réaction, chez les étudiants en appliquant le test d’évaluation du jugement analytique « Watson et Glaser », les traitement sont entamés après, et le groupe a appliqué la stratégie de « Feuille Minute » dans le module de « La linguistique » et durant toute son expérience quant au deuxième groupe les étudiants n’ont pas appliqué cette stratégie, ce groupe a continué d’utiliser la méthode classique pour avoir une conclusion de ce test sur l’efficacité de la stratégie de « feuille minute », les deux groupes sont exposés encore une fois pour un
examen, ce qui a donné que la stratégie de « feuille minute » a une efficacité remarquable à celle la méthode classique.

Enfin, malgré la réussite de l’expérience, mais ou a constaté que certains obstacles rencontrés au cours du processus de recherche qui sont déjà mentionnés, outre il y a d’autres problèmes qui peuvent être résolus en utilisant la même technique également proposée comme un futur projet de recherche.
الملخص

يهدف هذا البحث إلى إعطاء الاعتبار اللازم لتطوير مهارة التفكير النظري لدى الطلبة الجامعيين عامة و
لطلبة اللغة الإنجليزية ككلة أجلية خاصة، وهذا نصراً لأهميتها البالغة في عملية التعلم وكذا مكمل رئيسي يساعد
الطالب في اكتساب اللغة بطريقة مفروضة. هذا ما يستدعي المدرس إلى إيجاد استراتيجيات فعالة لدعم التفكير
النتيئي في المناهج الدراسي وتنميتها لدى الطالب. انطلاقاً من ما سبق اقترحت تقنية "ورقة القيقامة الواحدة"; «
كاستراتيجية فعالة لتطوير هذه المهارة لدى المتعلم وعلى تنص الفرصة أنه إذا طبقت تقنية "One Minute Paper
ورقة القيقامة الواحدة" في أقسام اللغة الإنجليزية ككلة أجلية ككلة أجلية، قدرة الطلبة على التفكير بطريقة نقدية ستطور تدريجياً و
بشكل ملحوظ. وتتأكد من صحة هذه الفرصة ابتعداً الشبه تجريبي مع عينة عددها 40 طالب سنة ثانية ليساس
من قسم اللغة الإنجليزية بجامعة العربي بن حمد بن سلمان؛ قسمة العينة إلى قسمين بالتساوي مجموعة تجريبية و
أخرى ضافية حيث أجرت كل المجموعتين فحص قبل تقييم مستواهم التدريبي باستخدام اختبار الوانغلاسير
(بصرف) فيما بعد بدأت عملية المعالجة حيث استخدمت المجموعة التجريبية تقنية "ورقة القيقامة الواحدة" في مقياس
اللسانيات
"Linguistics" طيلة مدة المعالجة و في حين لا تستخدم المجموعة الضافية أي تقنية وباشرت في الاستراتيجية القيمة. بعد إنهاء عملية المعالجة اجتازت كل المجموعتين نفس الاختبار السابق كقياس بعدي لفرض
التحقق من ما إذا كان لتقنية "ورقة القيقامة الواحدة" تأثيراً على التفكير النظري لدى العينة المستهدفة و عليه أثبتت
البحث أنه بالفعل كان ل "ورقة القيقامة الواحدة" التأثير الإيجابي على التفكير النظري لدى الطالب.

في الأخير رغم نجاح التجربة إلى أنه قد وجدت بعض العوائق التي تم مواجهتها خلال مشوار البحث والتي تم
ذكرها؛ بالإضافة إلى أنه توجد قضايا أخرى يمكن معالجتها باستخدام نفس التقنية اقترحت هي الأخرى كمشروع بحث
مستقبلي.