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An Investigation of Problem-based Learning Effectiveness on Improving EFL Students' Critical Thinking Skills in the Classroom: the Case of First-year Master Students at English Department Guelma University

A Dissertation Submitted to the Department of Letters and English Language in Partial Fulfillment of the Requirements for the Degree of Master in Language and Culture

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Dedication 1

In the name of Allah, the most merciful, and the most compassionate

I dedicate this work and give special thanks , to my beloved parents my father **'Abdo Allah'** who taught me the value of hard work and my mother **'Djamila'** for her love, tenderness, encouragement and care

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Abstract

The current research aims at investigating the impact of problem-based learning on EFL students' critical thinking skills. Hence, we hypothesized that problem-based learning could be effective to improve students' critical thinking skills. To test the validity of the hypothesis, the quantitative descriptive method is adopted through the administration of two questionnaires for EFL teachers and first-year Master students at the Department of English, 8 Mai 1945 Guelma University. The obtained findings indicated the strong impact of problem-based learning on improving students' critical thinking skills. Therefore, problem-based learning should be adopted and taken into account to improve students' critical thinking skills.

Keywords: Critical thinking skills, EFL classroom, EFL learning, Problem-based learning

List of Acronyms and Abbreviations

CATMAGIC: Confirmation bias /Attribution /Testing evidence/Memory lapses/Accepting authority/ Generalizing /Ignorance/Coincidence

CT: Critical Thinking

CTS: Critical Thinking Skills

CTSBT: Critical Thinking Skills–based Teaching

EFL: English as a Foreign Language

PBL: Problem-based Learning

SDL: Self-directed Learning

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General Introduction

In recent years, the education system has shifted from the traditional method of teaching to other methods that could improve students' level. Moreover, one of the necessary skills that students need in learning is the use of critical thinking skills in the classroom. Many beneficial strategies could improve students' critical thinking skills like problem-based learning method where the teacher is just a guider and the students are the center of the learning process and knowledge is acquired through analyzing and understanding the problem. Consequently, problem-based learning motivates the students' to use their critical thinking skills and solve the problem which would improve the students' critical thinking skills.

1. Statement of the Problem

Critical thinking is an essential ability in learning because it promotes creativity and it provides more insightful understanding of your reasoning. The majority of EFL students passively receive the information they get in the classrooms, and they tend to accept ideas like they are rather than questioning and analyzing them. Consequently, critical thinking is rarely used in EFL classrooms despite its importance. Moreover, problem-based learning could be an effective method in order to improve students' critical thinking skills, and teachers should follow this method in the classrooms.

1.1 Research Questions

This research targets the following main questions:

- Is problem-based learning effective to improve students' critical thinking skills?
- What kind of problem-based learning activities could be effective to improve students' critical thinking?
- Are students aware of the importance of critical thinking skills?

- Could problem-based learning improve EFL students' critical thinking skills?

2. Aims of the Study

This research aims at revealing the importance of problem-based learning and its role in improving students' critical thinking skills within Foreign Language classrooms. Thus, our study targets the use of problem-based learning (PBL) and its effect on students' use of critical thinking skills (CTS). Moreover, by taking problem-based learning in the classrooms, students would find many opportunities to analyze and interact with others; this contributes a great deal critical thinking skills. Therefore, the purpose of this study investigates the impact of problem-based learning on students' critical thinking skills. Therefore, the study addresses the following aims:

- To improve EFL students' critical thinking skills.
- To raise students' awareness towards the effectiveness of problem-based learning.
- To determine the importance of problem-based learning in EFL classrooms.
- To show the effectiveness of problem-based learning in improving critical thinking skills.

3. Research Hypothesis

The current study tends to explore the impact of problem –based learning in improving students' critical thinking skills. Hence, we hypothesize the following:

H_1: If students engage in problem-based learning, their critical thinking skills would improve.

The null hypothesis (H_0) implies that there is no relationship between the two variables. Eventually, we can hypothesize that:

H_0: If students engage in problem-based learning, their critical thinking skills would not improve.

4. Research Methodology and Design

4.1. Research Method

For investigating the impact of problem-based learning on students' critical thinking skills, the quantitative descriptive method is followed. Through administering two questionnaires, that helps to confirm the hypothesis of the research. The questionnaires are chosen for this research because it is a reliable and quick method to collect information from multiple respondents in an efficient and timely manner.

4.2. Population of the Study

The targeted population is first-year Master students in the Department of English at the University 08 Mai 1945, Guelma. The population contains one hundred sixty students (160), and the questionnaire is answered by one hundred thirteen students (113) following Krejcie and Morgan sampling table (1970, as cited in Cohen, Manion, &Morrison, 2000, p. 94).The main reasons behind choosing first –year Master students is that, they are advanced students who face many times critical thinking in their modules. Besides, they are aware of what could improve their critical thinking skills since they are more independent than other levels.

4.3. Data Gathering Tools

In this study the questionnaires were used as an effective data gathering tool. They aimed to figuring out if students know and apply both critical thinking skills and problem-based learning in the classroom. Besides, the questionnaire tend to discover whether teachers' use critical thinking skills and problem-based learning method in their classes and most importantly to see the effectiveness of problem-based learning on improving students' critical thinking skills.

5. The Structure of the Dissertation

This dissertation is divided into two main parts. The first part is purely theoretical which is in turn composed of two chapters; whereas the second part includes only one practical chapter. The first chapter is entitled “Critical Thinking Skills”. It provides a literature review about critical thinking, its skills and sub skills, as well as its characteristics and those of critical thinker along with its components. Moreover, the chapter deals with critical thinking importance in education and the barriers that can be encountered during this process.

The second chapter is entitled “Problem-based Learning”. This chapter provides literature review of problem-based learning, followed by its definition and process as well as students’ and teacher’s role along with the effect of problem-based learning on EFL students’ critical thinking skills. Additionally, this chapter includes some characteristics and concludes with barriers of this approach.

The third chapter is entitled “Field Investigation”. It includes a description of both teachers and students’ questionnaires. Firstly, it analyses data driven from the questionnaires. Secondly, it interprets the results according to research questions and hypothesis. Finally, in the “general conclusion” we state some pedagogical implications and recommendations as well as research perspectives and limitations.

Chapter One

Chapter One:

Critical Thinking Skills

Chapter One

Critical Thinking Skills

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Chapter One: Critical Thinking Skills

Introduction

Critical thinking is essential and requires integration into everyday education. Thus, this chapter discusses the literature review of critical thinking skills, followed by its definition and some characteristics that distinguish both critical thinking from other type of thinking and students who think in critical way. Additionally, it deals with the components of critical thinking process and its skills and sub skills. Furthermore, the chapter tackles critical thinking importance in education. Finally, the chapter concludes with some barriers to critical thinking process.

1.1. History of Critical Thinking

Thinkers throughout the middle ages dealt with the same concept of systematic reasoning like Thomas Aquinas (1256) who constructed a theory of thinking based on stating, considering, and responding to all criticisms of his own beliefs in a systematic manner. Likewise, Thomas hoped to improve his own thinking by predicting what the counter-arguments that his reader may make and then answering those imagined criticisms. This approach to CT was an important step forward (as cited in Tincu, 2001, pp. 13-14). Additionally, critical thinking can be traced back to Socrates, who claimed to ask probing questions to solve ‘confused meanings’, ‘inadequate evidence’, and ‘self- contradictory beliefs’ (The Critical Thinking Community, 2013). Beginning from the 1950s, many schools of thought attempted to explain the nature of critical thinking. For instance, Bloom (1956) created a hierarchical taxonomy with “knowledge” at the bottom and “evaluation” at the top. His taxonomy included six levels: knowledge, comprehension, and application as the foundation, and analysis, synthesis, and evaluation are thought to represent critical thinking (p.16). Elsewhere, Sternberg (1986) claimed that Bloom’s taxonomy is probably the most acknowledged source in teaching and evaluating higher-order thinking researches and it has

been used in education for the past fifty years. Despite, being criticized for lacking the accuracy required in governing the instructions (p. 6). Accordingly, Paul (1989) conducted a research about the adaptation of critical thinking dispositions in classroom environment. In his study, he stated that critical thinking is constructed as disciplined, self-directed thinking which illustrates perfection of thinking appropriately to a specific domain of thinking. In addition, he argued that critical thinking was the result of a combination of skills, such as spotting conclusions, examining premises, forming conclusions and diagnosing fallacies. Thus, he proposed that critical thinking must be taught with emphasis on developing fair-minded, critical thinkers who were willing to consider the interests of a variety of people or regardless of self-interest which he called it 'the dialogical thinking model' (as cited in Iyer, 2019, p. 4).

Moreover, Facione (1998) defended critical thinking as a collection of cognitive skills and successful attitudes. Along with forty-six experts, he defined six basic dimensions of critical thinking, including interpretation, analysis, evaluation, inference, explanation, and self-regulation. In this view, critical thinking is regarded as an automatic process that requires the use of cognitive skills to make decisions (p. 5). Likewise, Facione (2000) suggested that critical thinking education should develop to offer students with opportunities to practice relevant skills, which are manifested in students' performance. Moreover, possessing these abilities leads to improved performance because students with greater talents are more likely to complete a variety of tasks requiring those skills with fewer errors (p. 72). Furthermore, Halpern (2003) described critical thinking as 'a purposeful, reasoned, and goal-directed process'. In his approach to critical thinking, he defended the term 'critical' that implies evaluation and judgment and the kind of thinking that involves decision- making, problem-solving, verbal reasoning, argument analysis, assessing uncertainty, and hypothesis testing (p. 6).

1.2. Basic Definitions

Researchers and scholars have defined both thinking and critical thinking in different ways. However, they agree about some common concepts and descriptions in the following.

1.2.1. Thinking

Thinking is the base of all cognitive activities or processes of forming an argument about something. According to Halpern (2003) thinking is the transformation of some internal representation (p. 84). This denotes that, when we start thinking, we apply our knowledge to achieve a specific goal. Therefore, thinking ability is essential in our life because all of us work toward an objective. Moreover, Ruggiero (2012) described thinking as "any mental activity that helps formulate or solve a problem, make a decision, or fulfill a desire to understand it is searching for answers while reaching for meaning" (p. 4). As a result, thinking involves manipulation and analysis of information received from the environment. In addition, it is the activity of using the brain by considering a problem or creating an idea such as when students construct concepts, solves problems, and makes decisions; one of the characteristics that distinguish humans from other living creatures is their ability to think; i.e, the action of using your mind to produce rational logic thoughts.

1.2.2. Critical Thinking

Scholars defined critical thinking in various ways, but most of them share the same meaning of this concept. For instance, Scheffler (1973) stated that critical thinking is the ability to engage in a critical and open assessment of norms and principles in any sphere of life (p. 62).This denotes that CT can be in any field of life. Besides, Chaffee (1988) asserted that CT refers to "our active, purposeful, and organized efforts to make sense of our world by carefully examining our thinking, and the thinking of others, in order to clarify and improve our understanding" (p. 29). Furthermore, Lipman (1995) claimed that critical thinking is a

skillful, responsible thinking that is conducive to good judgment because it is sensitive to context, relies on criteria, and is self-correcting (p. 116). Hence, CT relies on both good and reasoned judgments that are not affected by anything. Moreover, Beyer (1995) defined critical thinking as "making reasoned judgments" (p. 8). Additionally, Fisher (2001) stated that " Critical thinking is a type of evaluative thinking which involves both criticism and creativity, which is concerned with the quality of reasoning or argument in particular that is presented in support of a belief or a course of action" (p. 13). In other words, a critical thinker must provide good quality of arguments for his views in a judgmental inventive way. Elsewhere, Cosgrove (2009) claimed that CT is the willingness to think deeply about problems that are relevant to one's experience (pp .19-20). Accordingly, CT helps the person to consider each specific detail of the issue in order to explain it.

From all above discussed definitions, we come to the conclusion that critical thinking is the objective analysis and evaluation of an issue; in order to form a judgment that helps the person processes information with logic and consider the different sides of the problem. As a result, critical thinking is the ability to solve different problems in any sphere of life and systematically evaluate any received information to express a given point of view in an organized manner. Noticeably, we can say that in most definitions scholars argue on the person's ability to generate and evaluate evidence that needs higher order thinking.

1.3. Characteristics of Critical Thinking and Critical Thinker

There are a variety of criteria and qualities that distinguish both critical thinking process and critical thinkers. Those are discussed further below.

1.3.1. Characteristics of Critical Thinking

Critical thinking characteristics are the set of features that distinguish this type of thinking from others. Jones and Ratcliff (1993) asserted that metacognition is a criteria of CT which refers to being aware of one's own thoughts while performing specific tasks and then

using this awareness to govern one‘s actions (p. 10). In other words, metacognition is self-regulated thinking and the students’ ability to evaluate, monitor, and make changes to their actions in order to know what caused success and failure. Furthermore, Fisher (2001) argued that good critical thinking meets a variety of intellectual standards concerned with the quality of thinking (p. 14). This denotes that CT has to be with high quality. Moreover, Lipman (2003) listed some traits indicating that critical thinking should be “impartial, accurate, careful, truthful, abstract, coherent and practical” (p. 56). Besides, Doughty (2006) stated that CT is the kind of thinking that gives good questions and reaches solutions based on evidence and proofs not arbitrary conclusions (p. 2).Which means that the established conclusions are logic and acceptable when using CT. Elsewhere, Paul and Elder (2008) assumed that all thinking is not of the same quality, high-quality thinking is thinking that accomplishes the purposes of thinking and If thinking lacks a purpose it may chance upon something of value to the thinker (p. 4). Consequently, CT process should have a specific purpose. Additionally, Elder and Paul (2010) argued for the critical thinking competency standards needed for assessing critical thinking abilities. These are to raise vital questions and problems, gather and assess relevant information, come to well-reasoned conclusions and think open-mindedly within alternative (p. 38).

1.3.2. Characteristics of Critical Thinker

According to Siegel (1990), a critical thinker is one who is motivated by logic and both acts and thinks in accordance with values, consistency, justice and objectivity of judgment and action (pp. 23-30). Moreover, Paul (1993) asserted that a good critical thinker will routinely ask the following questions in his mind that reveal the efficacy of students’ reasoning:

- What is the goal behind my thinking?
- What specific question am I attempting to address?

- What perspective am I considering?
- What assumptions am I making?
- What data am I relying on?
- How am I interpreting that information?
- What conclusions have I reached?
- What are the consequences?
- What would happen if I took my ideas and put them into action? (pp. 20-23)

Additionally, Ruggiero (2012) declared that critical thinkers are those who have the ability to move beyond "typical" thinking models to a more sophisticated way of thinking and to come up with more improved ideas than mediocre thinkers. Therefore, according to him critical thinkers are those who can:

- Recognize personal limitations.
- Strive towards understanding and they think before act.
- Make decisions based on proof and issues are exciting tasks to overcome for them.
- Be skeptical and curious about other people opinions and extreme views.
- Maintain open mindedness and participate in active listening.
- Avoid emotions and feelings with different situations (pp. 21-22).

Consequently, the characteristics of critical thinking students' are objectivity, open-mindedness and curiosity. Besides, other features like raising vital questions, justice and reasoned judgments. Therefore, if students are aware of these characteristics and use them in their daily life and education there will be critical thinker students in EFL classrooms.

1.4. Components of Critical Thinking Process

Critical thinking is a process that contains different components and Glaser (1941), in the quote blow, stated in a detailed way what critical thinking entails "Critical thinking requires ability to recognize problems, to find workable means for meeting those problems, to

gather and marshal pertinent information, to recognize unstated assumptions and values, to comprehend and use language with accuracy, clarity, and discrimination, to interpret data, to appraise evidence and evaluate arguments, to recognize the existence (or non-existence) of logical relationships between propositions, to draw warranted conclusions and generalizations, to put to test the conclusions and generalizations at which one arrives, to reconstruct one's patterns of beliefs on the basis of wider experience, and to render accurate judgments about specific things and qualities in everyday life". (p.5)

Moreover, According to Al-Sayed (1995) critical thinking is an interconnected process that includes five interrelated components:

- The knowledge base which refers to the individual knowledge and believes.
- External events are the stimuli that elicit a feeling of contradiction which is necessary for the sense of inconsistency to occur.
- Personal theory which is the individual personal character that has been derived from his or her cognitive background**.**
- Feeling of contradiction. The Feelings that operate as a motivating factor for the rest of the critical thinking phases.
- Resolving the contradiction; it is the level that encompasses all components of critical thinking, as the individual attempts to resolve the inconsistency, including various steps. (as cited in Al-Ghadouni, 2021, p. 2)

Besides, Saadah (2011) pointed out a number of components of critical thinking process through focusing on the problem and its related topics. Moreover, using important statistics to check the strength of the proof by using re-application and avoiding thinking based on self desires. Identifying multiple assumptions, dealing with unreliable and unclear information with suspicion. Finally, understanding both induction and deduction skills, avoiding logical fallacies (p.105).

Additionally, Sukartiningsih and Jackey (2019) asserted that critical thinking is a form of high-level thinking that involves all thought processes such as how to obtain information, understand information, analyze, correlate, interpret, evaluate and make judgments about good and bad or right and wrong (p.88).

According to the components of critical thinking that have been reviewed, we conclude that Al-Sayed CT components are the back ground knowledge that the individual has about a particular problem and the different factors that raise the sense of contradiction which motivates the individual personal reasoning and makes CT factors appear in order to find a solution to the problem. However, for Saadah CT can only be achieved through mental skills that are used during critical thinking process similarly to, Sukartiningsih and Jackey; which focus completely on the problem with logical reasoning that are similar to Glaser components.

To sum up, the ability to think critically involves three related factors. At the beginning to consider the problem in a thoughtful way through using knowledge and methods that you have about it. Then, to use the different CTS in order to analyze, interpret and evaluate the issue. After that to provide accurate judgments; reach a decision to solve the problem, when contemplating it. It is clear, then, that all scholars' components are closed to carry out the process of critical thinking.

1.5. Critical Thinking Skills and Sub skills

As a process, critical thinking encompasses a variety of skills and sub skills. Consequently, Facione (1990) argued that CT follows six core cognitive critical thinking skills as 'interpretation, analysis, evaluation, inference, explanation, and self-regulation' with sub skills for effective thinking and problem solving.

1.5.1. Interpretation is to be able to understand and communicate the meaning or significance of a wide range of data, judgments, beliefs, etc. It is formed by a number

of sub-skills which are c**ategorization** to properly define categories or frameworks for comprehending, and characterizing data. **Decoding significance** it refers to the procedures, rules conveyed in convention –based communication systems like, social behavior, graphs, and signs that are used to detect and characterize informative content. **Clarifying meaning** by removing misunderstanding, or devising a reasonable procedure for doing so.

1.5.2. Analysis is to determine the intended and the real inferential links between statements and other kinds of representation intended to communicate beliefs and opinions**.** It is formed of **examining ideas** through determining the function of particular terms in the context of argumentation via defining terms, comparing or contrasting ideas, identifying issues and their components. **Detecting arguments** by finding whether a series of assertions, communicates a rationale point of view. Likewise, **analyzing arguments** via given the expression of rational meant to support or refute a claim to identify and differentiate the intended major conclusion and the premises offered to support the major conclusion.

1.5.3. Evaluation is to evaluate the logical strength of the actual inferential relationships among statements, and questions in order to assess the credibility of statements or other representations that are accounts. It is composed of **assessing claims** by recognizing the variables that go into determining the degree of trustworthiness to associate it with the information source**.** In addition to **assessing arguments** via determining if the premise of a given argument's anticipated acceptability of accepting the argument's stated conclusion as true or highly likely true; and evaluating the logical force of an objection to an argument.

1.5.4. Inference is the ability to identify and secure elements required to draw acceptable conclusions, and to deduce the implications of data, statements, etc**.** It is formed of

querying evidence in particular; it refers to evaluating buildings that require assistance. However, in general it is about evaluating the information that is significant to determine the acceptability of a particular hypothesis. Moreover, **conjecturing alternatives** via formulating a number of solutions to an issue or formulate a number of distinct strategies for achieving a goal. Furthermore, **drawing conclusions** through using suitable techniques of inference to determine what stance one should take on a certain problem.

1.5.5. Explanation is to provide evidence for that reasoning using evidential, conceptual, and contextual concerns upon which one's results were based, and it contains three sub-skills. Firstly, **stating results** is examining and evaluating the results of one's reasoning actions by producing reliable assertions and descriptions of those results**.** Secondly**, justifying procedures** through conveying the evidential and contextual factors that go into making one's interpretation in order to accurately describe procedures. Thirdly, **presenting arguments** by providing justification for accepting a claim.

1.5.6. Self regulation, in other words; self-awareness, is the ability to keep track of one's cognitive actions through using assessment abilities with the goal of verifying, one's outcomes. It contains two sub-skills **self-examination** that it means examining one's own reasoning and double check the accuracy or the results as well as the proper application and execution of the cognitive abilities and **self-correction** that occurs when self-examination shows flaws, it devises reasonable processes to fix or correct it (pp. 8-12).

To sum up, students might improve their CT through using several skills and they must not be proficient at every skill to be perceived as having CT ability. Moreover, exercising CTS successfully in certain contexts needs the students to have background

knowledge about that specific field in order to argue meaningfully about it. Accordingly, Facione (1989) claimed that the experts do not regard CTS as a body of knowledge to be delivered to students as one school subject along with others like reading and writing (p. 6). Thus, CTS has applications in all areas of life learning and applying these skills in many contexts requires understanding, methodological principles and competence; in addition to instruction and practice to be accomplished.

1.6. Critical Thinking in Education and its Importance

Thinking critically is generally recognized as an essential part of learning and it has a significant role in education which has been discussed in the following.

1.6.1. Critical Thinking in Education

Meyers (1986) proposed ways to encourage students by beginning the course with a problem that is build on students' interest by analogy referring to connecting 'the content and methods of teachers' disciplines' with 'students' experiences and concerns' (pp. 44-49). Therefore, one of the goals of qualified education is showing students' the way in terms of what they should learn and how they should learn it. Correspondingly, Facione (2000) argued that the purpose of dealing with critical thinking in class is to "teach for and about it" (p. 80). To teach about it means training students to apply related skills to solve difficulties and problems in classroom. While, the objective of teaching for is to provide students' with opportunities in classroom and make them engage in different CT discussions. Moreover, Eggen & Kauchak (2010) asserted that teachers can make critical thinking an inherent element of learning with careful structuring of problem-solving context that enables experimentation, engagement, reasoning, and decision-making (as cited in Yaiche, 2021, p. 72). Furthermore, Lin (2018) stated that if students want to succeed academically and professionally, they must develop critical thinking skills (p.1). Consequently, critical thinking

skills have a significant impact on students' education and are vital for students to become self-directed learners who can make decisions and solve problems.

1.6.2. Critical Thinking Importance

Shakirova (2007) argued that critical thinking skills are essential because they enable students to deal effectively with social, scientific, and practical problems they face (p. 42). Besides, According to Al-Ghadouni (2021) CT is a style of thinking that enables students to obtain and evaluate accurate information, due to the knowledge explosion and the enormous research advancement. Moreover, it leads to a more thorough comprehension of the cognitive content and allows students to be more independent in their thinking (self-sufficient), and less reliant on others. As a consequence, CT is an educational requirement for students who want to be able to critically evaluate ideas, to gain a correct conclusion, and carefully study issues. Furthermore, it promotes an attitude of inquiry, and skepticism of facts that have not been thoroughly investigated and students become more open- minded and creative when choosing the appropriate learning technique and the suitable strategy of solving problems. Elsewhere, through critical thinking students develop a more positive attitude, become more participatory, and get more involved in the educational process; which will improve their communication skills and research education. Additionally, CT promotes independent thinking, personal autonomy and reasoned judgment in thought and action for students (p. 2).

Consequently, learning to think critically is beneficial in a variety of ways for EFL students. It assists individuals in selecting useful information that is relevant to them, aids them in keeping track of the information they get and determining the appropriate strategies for attaining their objectives.

1.7. Barriers to Critical Thinking

In fact, many different barriers that prevent effective critical thinking have been identified by researchers and scholars. Thus, these roadblocks form obstacles for students to

think critically. For instance, Pinder (2007) determined that there are eight roadblocks to CT and to remember these eight, here is an acronym for them – CAT MAGIC

- **Confirmation bias:** turning the evidence to match one's view points and beliefs.
- **Attribution (or self-serving) bias:** the concept that good things happen to us due to internal force and unpleasant things happen as a result of external factors; however, others have the exact opposite situation.
- **Trusting testimonial evidence:** the fallacy of trusting other people's information, even if there is no proof to back up their claims.
- **Memory lapses:** everybody has gaps in his/her memory which is common human habit with information that could or could not be correct; which makes it difficult to reach more fact –based decisions.
- **Accepting authority without question:** it is when a student acts in response to a direct order from another one who has a higher authority over him without questioning.
- **Generalizing from too few observations:** making a claim on evidence that is just too small.
- **Ignorance and the failure to admit it:** a personality feature that leads to fabrications and reckless speculation. Hence, rather than recognizing their lack of knowledge, they pretend to be knowledgeable, and then describe the forgery in a way that it appears genuine because nobody wants to be perceived as a fool.
- **Coincidence (or the Law of Truly Large Numbers):** an erroneous belief that bits of data have causality when, in fact, they are the outcome of coincidence (p.1).

Moreover, Korn (2011) indicated that there are two barriers that most strongly influence students' critical thinking:

- **Fear of being wrong:** an emotional state that occurs when a student is going to try something new outside his comfort zone. Its primary function is to protect him, but it

frequently obstructs the student's full ability as it functions as a barrier between him and his aim.

- **Ignorance:** which is most commonly manifested in a conversation between two students about a topic in which they both lack knowledge of; hence, students do not realize that reading one article, or knowing the definition of a topic is insufficient to claim that one is knowledgeable about it (as cited in Alcos et al., 2020, pp. 1-3).

To conclude, students' thinking is affected by many factors and barriers that handle them from being critical thinkers. Most of these barriers are the result of negative ideas students form in their minds and then become convinced with a set of unchangeable prejudices. In addition, the unwillingness to listen to others' ideas and the fixed mindset, lack of communication and interaction with other people and poor thinking. Furthermore, the lack of background knowledge serves as an obstacle to practicing critical thinking skills. As a suggestion, in order to overcome these barriers there should be an effective practice to critical thinking skills.

Conclusion

The skill of thinking critically is essential in learning process. Therefore, critical thinking skills help the students to gain a deeper understanding of the cognitive content they learn and they make them more independent and less reliant on the teacher. Consequently, it is important to teach students how to ask good questions, make accurate judgments, and come up with well reasoned conclusions in order to gain better results and continue the achievements of their goals; because every field stays alive only if good questions are generated.

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2.9. Barriers of Implementing Problem-based Learning

Conclusion

Chapter Two: Problem-based Learning

Introduction

This chapter is devoted to problem-based learning and it starts by a brief literature review, followed by problem-based learning definition and process. In addition to a discussion of students and teachers' role, advantages, and disadvantages. Furthermore, the chapter deals with facilitations of problem-based learning, the effects of problem-based learning on EFL student's critical thinking skills, and provides some strategies that help to increase those skills in EFL students. Finally, the chapter concludes with some characteristics and barriers of this approach.

2.1. Literature Review

Problem-based Learning approach has evolved over time. For instance, Borrows (1996) claimed that PBL concepts have already developed many new models and strategies for learning in higher education institutions around the world, which are adapted to local educational beliefs, policies, and economic realities (p. 3). In addition, Savin-Baden and Major (2004) asserted that even within a single institution, there may be significant differences in how problem-based learning is implemented, depending on the subject of the study and the students' future plans. However, rather than the clearly defined disciplines and well-structured textbooks, all problem-based learning approaches begin with real-world situations (p. 198). Moreover, Servant (2016) found that the various historical contexts of four universities, which continue to play important roles in PBL today, namely McMaster University, Maastricht University, Roskilde University, and Aalborg University. Therefore, these four universities took a progressive stance on higher education in the late 1960s and early 1970s, and they continue to provide instructions based on PBL principles (as cited in Stentoft, 1996, p. 12).

2.2. Definition of Problem-based Learning

Many scholars have defined PBL in different ways, but most of them share the same meaning of this approach. For instance, Borrows and Tamblyn (1980) considered it the knowledge acquired through analyzing and understanding a problem, in which the problem encountered first in the process of learning and functions as motivation for using problem-solving skills, as well as it pushes students to search for needed information and knowledge to solve the problem (p.18). Moreover, Bridges and Hallinger (1991) asserted that in PBL takes place largely inside the context of the topic in small groups, rather than in large groups, when working through the challenge individuals in small groups take primary responsibility for their own learning and their own instruction (pp. 137-138). In addition, Helgeson (1992) stated that many scientific teachers are familiar with the term problem-based learning for at least three quarters of a century as the "scientific method" which have been part of science education (p.1); this means that PBL method is widely used in learning for many years.

From all above discussed definitions we conclude that PBL is a learner-centered approach, in which the students are expected to be self- dependent, because they bear the majority of the responsibility for learning and instruction in PBL activities. Additionally, it takes place in a small group comprised of small number of students and the teacher.

2.3. Problem-based Learning Process

Educators are interested in PBL because of its emphasis on active, transferable learning and its potential for motivating students. Barrows and Tamblyn (1980) mentioned that the learning process is unlikely to be linear because what students learned is linked into their current knowledge and skills and students may develop through distinct cognitive levels (p. 192). Moreover, Baxter Magolda (2004) argued that the conflict between the teacher's directions, and how the students take charge of their own activities should be tackled by

taking into consideration the challenge and the support through learning partnerships, as well as the balance between the PBL procedure flexibility and student support (p. 43). Additionally, Davis et al. (2005) stated that the principle goal of the teacher's facilitation is to reduce guidance; the looseness of the facilitation based on the learning conditions. While, this facilitation does not imply that the teacher has increasingly ignored the needs of the students, rather, the teacher uses questions to elicit the students' own perspectives, in order to determine how to approach, recognize, and internalize CT as a barrier concept in the classroom (p. 57). Furthermore, Savery (2015) claimed that PBL differs from case-based, project-based, and inquiry-based learning because PBL teacher supports students in creating their own goals and outcomes for the problem, but they do not provide information related to the problem itself (p. 11).

As a summary, in PBL process students are presented with a problem in order to activate their prior knowledge. However, the teacher works as a facilitator and takes into consideration students' different levels and needs.

2.4. Teacher's Role

Understanding the roles and responsibilities of teachers in altered classrooms is essential for the implementation of new pedagogies. In addition, Kazempour (2009) stated that teachers must change their focus in the classroom from lecturing to assessing in order to achieve their new tasks. Furthermore, it can help in diagnosing students' prior knowledge, evaluating their understanding throughout the learning experience. Consequently, problem-based teachers become assessors (p.56). Moreover, Moustafa et al. (2013) mentioned that in constructivist classes the teachers' role is to facilitate, encourage students' autonomy, and provide a comfortable atmosphere for students' expression, by performing as a guide for them (pp. 418–419). Likewise, Yukhymenko et al. (2014) agreed that in PBL contexts, the

teacher is not the information source or classroom controller, rather than, the teacher guides, coaches, and models appropriate problem-solving skills for his or her students (p. 102).

To sum up, effective PBL teachers need to realize their role and facilitate the tutorial with more commitment and sincerity, and they have to play multiple roles as facilitators, observers, guiders and evaluators to foster learning skills among the students. Consequently, teachers should understand their roles and responsibilities based on the principles of PBL.

2.5. Student's Role

PBL require students to assume different roles in order to solve the problem. According to Norman and Schmidt (1992), this approach is an instructional method where students learn through facilitated problem solving activities. Besides, they work in collaborative groups to identify what they need to learn in order to solve the problem and they engage in self-directed learning (SDL). Moreover, the majority of students spent their previous years believing that the teacher is the primary source of the information; as a result, many students appear to have lost their ability to judge and evaluate the received information. This is particularly apparent among first-year students, who frequently express difficulties with SDL (p. 558). Additionally, Ali (2019) stated that students exchange between note taking and working as part of a group. Therefore, in order to deal with the problem, students have to investigate it and plan their own solutions. Besides, students can evaluate their knowledge and skills as well as their time management skills through this exploration that make them the initiators of their own learning (p.75).

In conclusion, during PBL process students become the questioners and problem solvers, as a result they are no longer passive information receivers. However, they tend to search for problem solutions and evaluate their acquired knowledge.

2.6. Problem-based Learning Advantages, Disadvantages

As all learning theories, there are advantages and disadvantages for this method in the following

2.6.1. Advantages

According to Dolmans and Schmidt (1996), the advantages behind using PBL approach are summarized as follow

2.6.1.1. Increased Retention of Knowledge

Through activation of prior knowledge, elaboration of newly acquired knowledge, and contextual learning, PBL students would be able to learn and recall information. Furthermore, they can mobilize whatever information they already have, by making discussions in small groups. In addition, students actively develop explanatory models based on their prior knowledge, which helps in the processing and comprehension of new information. Moreover, discussion, note-taking, and answering questions are all examples of elaboration and these activities assist students in developing rich cognitive models of the tasks they are given. As a result, both prior knowledge activation and elaboration help to facilitate student's learning process.

2.6.1.2. Self-directed Learning Skills

Students in PBL process can adapt their learning to their specific educational needs. Moreover, students learn how to deal with problems in the future by analyzing and discussing them, preparing themselves to be independent and self-directed learners. Furthermore, they learn to identify gaps in their own knowledge and assess their own strengths and weaknesses. In other words, students develop self-regulatory skills and learn to reflect on and manage their own learning.

2.6.1.3. Intrinsic Interest in Subject Matter

Another benefit of PBL is that it increases intrinsic interest in the subject because students identify the learning difficulties and decide what is relevant to their learning; the student-center learning approach improves motivation. Moreover, problem solving would increase intrinsic interest in the subject matter by involving students more actively in the issues at hand. Therefore, we conclude that the discussion of a problem is designed to increase students' interest in the subject, affecting their interest. Besides, PBL method has many benefits for students, it encourages greater understanding of the task, and it affords more intrinsic reward (pp. 535-538).

In summary, using PBL has significant advantages for students, for instance, it helps students to remember prior knowledge in order to comprehend the new information. Besides, students became self-directed learners and no longer passive receivers. Also, it increases student's interest about the subject of the study.

2.6.2. Disadvantages

Unfortunately, no single education strategy is perfect for all educational situations and PBL has several disadvantages. Elsewhere, David and Harden (1999) asserted that the replacement of the traditional teacher role as knowledge giver by the facilitator in PBL method may make it odd and difficult for both teachers and students. Moreover, the time required of trainees to engage in PBL is problematic for time poor faculty. Furthermore, knowledge acquired through PBL is less organized than knowledge acquired through traditional learning (p.134). In addition, Kolle et al. (1997) mentioned other disadvantages for this approach, which are the significant costs, resources and time required to train effective facilitators. Likewise, some experts' declared about the costs of implementing PBL programs.

While, others argued that PBL is not necessarily expensive than traditional educational approaches (as cited in Jones, 2006, p. 487).

To sum up, the changing role in this process made it difficult to apply for both teachers and students. In addition to other factors such the lack of organization, and the lower resources.

2.7. Problem-based Learning and Critical Thinking Skills

Problem-based learning has many effects on EFL students' critical thinking skills and there are several significant strategies to improve critical thinking skills.

2.7.1. The Effect of Problem-based Learning on EFL Student's Critical Thinking Skills

By using PBL model, students actively develop their knowledge by engaging in discussions and asking questions based on real-world challenges when applying a PBL approach. Gibbs (1992) and Forsythe (2002) agreed that despite the fact that the issues of tasks may not always have a solution, problem –based learning offers a rich learning environment in which students identify what needs to be studied and learnt by studying the problems they face (as cited in Narmaditya, et al., 2018, p. 379). Besides, Tandogan and Orhan (2007) stated that PBL approach has a significant impact on learning outcomes, not only critical thinking skills, but also other findings from several studies and it develops a higher-level of critical thinking and scientific thinking skills in students (p. 73). Therefore, Narmaditya et al. (2018) found that there is an increase in students' capacity to solve problems and draw conclusions through using critical thinking skills in problem-based learning, which encourages students to think critically while solving problems related to the course's content. Consequently, the use of problem-based learning helps students to think

critically by asking questions, discussing difficulties and coming up with solutions (pp. 385-386).

To conclude, the application of PBL gives a positive impact on students' critical thinking skills. Moreover, it provides a rich learning environment where students learn new materials and concepts, which could help better in studying the given problem.

2.7.2. Strategies to Increase Critical Thinking Skills

Creating students who are active in learning is not easy because it needs big efforts and serious work. Besides, Hmelo-Silver (2004) asserted that the role of the teacher is essential, and he is responsible for choosing and managing what learning activities are suitable to apply in the classroom. Additionally, strategies can be used to achieve multiple goals, which reflect a belief in learning as a collaborative activity where students are responsible for their own learning (pp. 242-243).

According to Baverly et al. (2008), promoting critical thinking skills through Problem-based Learning has many activities. One of the most useful activities is **group clarifications,** where students discuss what happened in the situation, define the problems that needs to be solved, and put down any phrases or concepts that were confusing on the white board, then the teacher helps in understanding the problem, and encourages students to think and speak openly. Also, there is **brainstorming** an activity where students use prior knowledge to come up with possible explanations. As a result, the problem situation becomes more obvious. Moreover, they compared any complex terms to the original concept and when all of the situations essential elements are determined, the students group together and study the subjects. Likewise, the teacher maintained group dynamics and the movements through the tasks. Furthermore, **the self-directed learning** an activity where students work on the research topic they choose textbooks, journal articles, and internet resources to find advanced

information. Additionally, the students create educational handouts for their classmates and plan questions for group discussion. While, the teacher encourages students to pursue self-directed learning, think extensively and deeply, and provide feedback on each paper. Besides, **group discussion** where students discuss their results and examine the information they had found critically in which they explore CT questions, share what they had learned and generate a number of possible hypotheses to explain the situation (pp. 88-90).

Consequently, PBL method enables students to share their ideas with others, analyze problems in new and different ways, and consider new solutions to issues, which will help in improving EFL students' critical thinking skills. Therefore, the facilitator overall strategies are open-ended questions and unresolved questions that help students in achieving their goals, because it involves all students in the learning process.

2.8. Characteristics of Problem-based Learning

PBL approach as any method has many characteristics that required successful PBL instructions which are described by several authors like Savery and Barrows. Therefore, according to Savery (2006) problem-based learning is an educational learner-centered method that allows students to conduct a research, integrate theory, and apply knowledge and skills to generate a realistic solution to a defined problem. As a result, Savery summarized PBL characteristics in three important aspects; the first is the teacher's role as a learning facilitator. The second is the students' role to be self-directed and self-regulated in their learning. The third one is teacher's emphasis on the essential elements in the design of ill-structured problems (pp.12-13).

Additionally, Savery (2006) made some adaptations of basic PBL characteristics that are presented in the following

- Students must be responsible for their own learning.
- Problem simulations must be unstructured in order to allow students for independent inquiry.
- Learning from a number of areas or courses should be combined.
- Collaboration is necessary.
- Students must apply what they learn through self-directed learning of the problem via reanalysis.
- Provide a summary of what has been learnt and discuss the concepts and principles.
- At the end of the problem and the curricula unit, students should assess themselves and their peers (as cited in Barrows, 1988, pp. 33-36).

Hence, focusing on the teacher and the student's role is very important in Problem-based Learning process. In addition, when teachers emphasize on the structure of the problem it is better in comprehending the given situation. Besides, students must apply their prior knowledge to solve the current problem.

2.9. Barriers of Implementing Problem-based Learning

Kristin et al. (2021) stated that there are several barriers to successful PBL implementation, including faculty, resources, and students' barriers. Firstly, faculty barriers in which the first step in implementing PBL is to obtain faculty support and interest. Besides, faculty members often resist the change because they do not want to abandon the lecture approach, and provide faculty with the skills to facilitate PBL is an important factor of transformation success. Accordingly, the benefits of PBL are restricted unless the teachers are competent in PBL and knowledge acquisition guide students. Secondly, students' barriers where they may struggle to shift from traditional methods to PBL because it places the student at the center of the process, which can cause frustration and discomfort. As a result, students frequently express anxiety and resistance to change the teaching methods. Moreover,

they may struggle to assimilate to the new curriculum because the amount of time spent on information acquisition has increased which can be an unfamiliar method for teachers, students and both may be afraid of failure. During the student's first PBL session, a simple scenario should be utilized to help them understand the role of both students' and teacher', as well as the extra time that will be required to address difficulties which is critical for the facilitator to recognize that. Accordingly, during this process, students' participation should be encouraged and positively promoted. Finally, resource barrier, where the faculty program decides to use PBL, the faculty - student relationship must change. These classes are presented in small groups of four to eight students, each group with a faculty teacher. As a result, an increased number of teachers are needed when considering an increased teacher effort, additional support and administrative materials may be necessary. Furthermore, every small group will require a room, which will result in a lack of space. Consequently, adding building space generally results in a cost rise (pp.118-122).

To sum up, researchers face many issues when applying Problem- based learning in their classrooms, such as student, teacher, and faculty barriers which depend on the nature of the field. Consequently, PBL is not a method that suits every one especially students and teachers who are unfamiliar with this approach.

Conclusion

Problem-based learning is a teaching method that helps students to think critically about how the information they have learned relates to a specific problem. Besides, it pushes them to ask about their educational needs. Moreover, PBL has the ability to assist students in becoming more thoughtful and flexible thinkers who can apply their critical thinking skills and acquired knowledge to solve problems. In addition, it includes three main components which are the teacher, the student, and the well-structured problem that are

necessary in applying PBL process. As all approaches used in education problem-based learning has advantages, disadvantages, and barriers that should be solved in order to help students to reach the goal of the method.

Chapter Three

Chapter Three:

Field Investigation

Chapter Three: Field Investigation

Introduction

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Conclusion

Chapter Three: Field Investigation

Introduction

The current chapter is devoted exclusively to the practical part. It represents the population of the study, data analysis and interpretation of students' and teachers' questionnaires. It ends with general conclusion.

3.1. The Students' Questionnaire

3.1.1. Aims of the Students' Questionnaire

The questionnaire seeks to investigate the students' perspectives about the importance of critical thinking and the use of problem-based learning in the classroom. Moreover, the ultimate aim is to discover whether students use critical thinking skills or not and if they are important in the classroom or not. Additionally, it aims to know students' perspectives about PBL method and the suitable activities for practicing it. Finally, the questionnaire looks further to discover students' perspectives about the role of problem-based learning in improving EFL students' critical thinking skills.

3.1.2. Population of the Study

The current study is directed to first-year Master students at the Department of English, 8 Mai 1945 Guelma University. The main reason behind choosing this level is the fact that first -year Master students are mature enough to express their opinions objectively and they experience critical thinking in their modules (reading, writing, and literature …etc). Thus, the questionnaire was delivered face to face to first-year Master students who are enrolled in six groups. In light of the previously mentioned reasons the sample is composed of one hundred thirteen (113) students out of one hundred sixty (160) students based on Krejcie and Morgan's (1970) sampling table (as cited in Cohen, Manion & Morrison, 2007, pp. 102-103).

3.1.3. Description of the Students' Questionnaire

Student's questionnaire is organized according to the research layout. Mainly, it consists of sixteen questions from different types, multiple-choice questions, dichotomous (yes-no) questions and open-ended questions which are divided into three sections (*see appendix A*).

Section One: General Information (Q1-Q4)

This section contains four questions (Q1-Q4). It aims at collecting data about students' general information as gender; English study experience, purpose behind choosing English at the university and judgment of their level in English.

Section Two: Critical Thinking Skills in EFL Classrooms (Q5-Q10)

This section starts with the fifth question which seeks to know students' definitions for critical thinking. Then, in (Q6) they are asked how often they use critical thinking in classrooms. In (Q7) the students are requested to determine the critical thinking skills they use more in the classroom. In the eighth question they are questioned about what extent teacher method can affect their critical thinking. Question nine asks if teachers raise students' awareness toward critical thinking importance in the classroom or not. The last question (Q10) is about the importance of critical thinking skills have in their learning achievements.

Section Three: The Impact of Problem-based Learning (PBL) on Critical Thinking Skills Improvement (Q11-Q16)

This section opens with question eleven which looks for students' experience of problem-based learning situation in the classroom or not. In addition, if their answer is 'yes' they are required to describe the situation (Q12). Then students are asked to select from the options factors that could be used to solve problem-based situations (Q13). After that, Question (14) seeks to know students' opinions concerning PBL role in improving their critical thinking skills. Then they are required to select which activities can help them

improve CTS from the given options and add others if they want (Q15). The last question in this section (Q16) looks for students' suggestions or comments concerning the topic under investigation.

3.1.4. Administration of the Students' Questionnaire

The questionnaire was administered on April 21th, 2022. It was given hand to hand to first year Master students of Guelma University. The students were promised that their answers will remain confidential and that they will only be used for the sake of research. The questionnaire' language is simple and direct. Accordingly, the students answered the questions without making a lot of effort and many students expressed their interest in the topic.

3.1.5. Analysis of the Results from the Students' Questionnaire

Section One: General Information

Question One: Gender?

Table 3.1

Students' Gender

Options	**Frequency (N)**	**Percentage (%)**
Female	90	79,64%
Male	23	20, 35%
Total	113	100%

As indicated in the table, the majority of first-year Master students (79, 64%) are females. Whereas, the males represent 35% of students. This indicates that females are more interested in studying languages than boys.

Question Two: How long have you been studying English?

Table 3.2

Years of Studying English

Options	**Frequency (N)**	**Percentage (%)**
11 years	60	53,09%
More than 11 years	53	46,90%
Total	113	100%

From the results displayed in table 3.2, more than half of the students (53, 09%) stated that they have been studying English for 11 years; which implies that they have succeed in all their academic years. However, 46, 90% of them admitted that they have been studying English for more than 11 years. This indicates that they perhaps failed in a year or two in their education.

Question Three: Why you have chosen to study English at the University?

Table 3.3

Students' Choice to Study English

Options	**Frequency (N)**	**Percentage (%)**
Their favorite language	60	53,09%
Global language	13	11,50%
Did not have a choice	21	18,58%
Go outside the country	19	16,81%
Total	113	100%

From the table 3.3, more than half of the students (53, 09%) stated that they are studying English because they love the language. In addition, some students (18, 58%) claimed that it was not their choice to study English at the university but are oriented to it due to their rate in the baccalaureate exam. Moreover, a limited percentage (16, 81%) asserted

that they chose English to go outside the country in order to study or travel. Furthermore, the rest of the informants (11, 50%) stated that they selected English because of its globalization.

Question Four: How is your English proficiency?

Table 3.4

Students' Level in English

Options	**Frequency (N)**	**Percentage (%)**
High	28	24,77%
Average	85	75, 22%
Low	0	0%
Total	113	100%

The majority of students (75, 22%) claimed that they have an average level in English, which indicates that they have acceptable knowledge about the language, and some students (24, 77%) stated that they have a high level in English which denotes that they have good capacities.

Section Two: Critical Thinking Skills in EFL Classroom.

Question Five: Could you provide a definition for critical thinking?

Students' Definition for Critical Thinking

- CT is the objective analysis of available facts evidence to form an argument defined by (25) students

- CT is to think out of the box defined by (20) students

- CT is higher order thinking when you link your thinking with logic defined by (18) students

- CT is the use of different mental cognitive skills to find solution defined by (17) students

- CT is to think in a systemic manner and unique way about the received information to provide a criticism defined by (12) students

- CT is the ability to question everything and think in deep rational way defined by (8) students

As indicated the informants defined critical thinking in different ways 22, 12% agreed that CT is the objective analysis of available facts, evidence to form an argument. In addition, few students (17, 69%) stated that CT is to think out of the box which implies that critical thinking is not the ordinary thinking but you interpret and analyze to find something new. Moreover, some students (15, 92%) claimed that it is higher order thinking when you link your thinking with logic.15, 04% asserted that CT is the use of different mental cognitive skills to find solution; this indicates that these students use their CT in order to solve problems. Furthermore, a limited percentage (7, 07%) claimed that it is the ability to question everything and think in a deep, clear, and rational way. While, 10, 61% stated that it (CT) is to think in a systemic manner and unique way about the received information to provide a criticism.

Question Six: How often do you use critical thinking skills in the classroom?

Table 3.5

Students' Use of Critical Thinking Skills in the Classroom

Options	**Frequency (N)**	**Percentage (%)**
Always	18	15,92%
Sometimes	79	69,91%
Rarely	16	14,15%
Never	0	0%
Total	113	100%

As indicated in table 3.5, more than half of the participants (69, 91%) stated that they sometimes use critical thinking skills in the classroom. This implies that maybe the type of courses and activities need critical thinking skills. Whereas some participants (15, 92%) claimed that they always use CTS in the classroom which means that they are active students with great capacities. Additionally, very few informants (14, 15%) asserted that they rarely

use CTS in the classroom which implies that they are perhaps passive students or the type of courses and activities do not need critical thinking skills.

Question Seven: Which of the following critical thinking skills you tend to use more in the classroom?

Table 3.6

Students' Most Used Critical Thinking Skills in the Classroom

Options	**Frequency (N)**	**Percentage (%)**
Interpreting	44	38,93%
Analyzing	73	64,60%
Evaluating	36	31,85%
Inferring	15	13,27%
Explaining	64	56,63%

As it is indicated in table 3.6, a significant percentage (64, 60%) of the informants agreed that analyzing is the most used CTS by EFL students. That is, these students tend to analyze information and data in the classroom. 56, 63% stated that explaining is the most used CTS in the classroom, which implies that it is the second most used CTS. 38, 93% of the informants chose interpreting; which implies that students interpret data in some modules like translation and ethics (as mentioned by students). Moreover, 31, 85% selected evaluating as the most used skill which denotes that they evaluate and judge data to provide criticism for example in literature (as mentioned by one of students). Finally, very few participants (13, 27%) claimed that inferring is the most used critical thinking skill in the classroom. Which means that few students used to infer information.

Question Eight: To what extent the teacher method can affect your critical thinking skills?

Table 3.7

Teacher's Method Effect on Students' Critical Thinking Skills

Options	**Frequency (N)**	**Percentage (%)**
To a very limited extant	6	5,30%
To a limited extent	33	29,20%
To a high extent	54	47,78%
To a very high extent	20	17,69%
Total	113	100%

As it is displayed in table 3.7, less than half of the participants (47, 78%) viewed that the teacher's method affects their critical thinking skills to a high extent; which implies that the method used in the classroom has a significant impact on students' use of CTS. While, 29, 20% stated that teachers' method affect their CTS to a limited extent which means that CTS have nothing to do with teachers method in the classroom. In addition, some students (17, 69%) view teachers' method as a factor that highly affects their CTS; which implies that teachers' method has an important role in improving students' critical thinking. However, a very few informants (5, 30%) asserted that teachers' method affects their CTS to a very limited extent; which assumes that they consider critical thinking skills as an individual skills and capacities that are not affected by teachers' method.

Question Nine: Do your teachers raise your awareness towards the importance of critical thinking skills?

Table 3.8

Students' Awareness towards critical thinking skills Importance

Options	**Frequency (N)**	**Percentage (%)**
Yes	87	76,99%
No	26	23,01%
Total	113	100%

The majority of students (76, 99%) asserted that teachers raise their awareness toward the importance of critical thinking skills. This asserts that CTS are important and have essential role in their studies. However, 23, 01% of them claimed that teachers do not raise their awareness toward the importance of critical thinking. This implies that the majority of teachers are aware of the importance of CTS and raise their students' awareness; whereas few ignore its role in students' learning results.

Question Ten: To what extent do you think critical thinking skills development is important for your learning achievement?

Table 3.9

The Importance of Critical Thinking Skills Development in Learning Achievements

Options	**Frequency (N)**	**Percentage (%)**
To a very limited extent	5	4,42%
To a limited extent	22	19,46%
To a high extent	57	50,44%
To a very high extent	29	25,66%
Total	113	100%

As it is displayed in table 3.9, nearly half of the participants (50, 44%) view critical thinking skills development as important to a high extent in their learning achievements; this implies that students are aware of CTS importance in their learning and consider critical thinking skills as essential in their achievements. Likewise, 25, 66% of students assert that CTS are highly important. However, 19, 46% stated that CTS development is important to a limited extent in their learning achievements this implies that these students ignore the role of CTS in learning.

Section Three: The Impact of Problem-based Learning (PBL) on Improving Critical Thinking Skills (CTS)

Question Eleven: Is problem-based learning used?

Table 3.10

Students' use of Problem-based Learning in the Classroom

Options	**Frequency (N)**	**Percentage (%)**
Yes	58	51,32%
No	55	48,64%
Total	113	100%

As indicated in table 3.10, nearly half of the informants (51, 32%) stated that they have experienced problem-based situation in the classroom which means that they are aware about what PBL is. However, the rest of the participants (48, 64%) claimed that they have not experienced problem-based learning; which implies that they were taught by different methods in the classroom.

Question Twelve: If yes, Can you describe problem-based learning?

Table 3.11

Students' Description of Problem-based Learning in the Classroom

Options	**Frequency (N)**	**Percentage (%)**
When studying new topics that we have no background about	10	8,84%
Answering tasks related to the course content	13	11,50%
Via translating texts	9	7,96%
Presentations	30	26,54%
Interpret the rules in groups to understand them	19	16,81%
Empty	32	28,31%
Total	113	100%

As it is shown in table 3.11, 26, 54% described problem-based learning as the presentations they make in the classroom. This demonstrates that first-year Master students consider their presentation as a problem–based activity maybe because they search and analyze the information they get and present it. Whereas, few students (16, 81%) asserted that PBL situation is when they work in groups in order to understand the rule; which implies that these students use critical thinking skill which is interpreting also work in groups to solve problems that the teacher gave. Moreover, 11.50% said that a problem -based situation is when they answer tasks related to the course content. Some students (8, 84%) stated that when studying new topics that we have no background about this implies that when introducing new topics teachers used PBL method to know students' views about that particular subject. In addition, very few percentage (7, 96%) claimed that PBL situation is via translating text so they consider translating text as PBL activity where they consider texts as a problem and translate them in order to solve the issue.

Question Thirteen: How do you use to solve problem-based situations?

Table 3.12

Students' Most Used Activities to Solve Problem –based Situations

Options	**Frequency (N)**	**Percentage (%)**
Collaborative learning	43	38,05%
Critical thinking and analysis	50	44,24%
Managing projects and holding leadership roles	24	21,23%
Applying course content to real world examples	50	44,24%
Explaining concepts	49	43,36%

As it is shown in table 3.12, nearly half of the participants (44, 24%) chose CT and analysis as a way to solve PBL situations. This indicates that critical thinking is used by first-year Master students to solve problems. Likewise, the same percentage (44, 24%) selected applying course content to real world examples as an activity to solve problems. This implies that they are used by students to solve learning issues which has a significant role in education. However, less than half of the participants (43, 36%) stated that they used to solve PBL situations via explain concepts. This denotes that students appreciate this task. In addition, 38, 05% of the students claimed that they solve PBL situations through collaborative learning. While, few participants (21, 23%) asserted that they solve PBL situations via managing projects and holding leadership roles. This means that they ignore the role of managing projects and holding leadership as an activity to solve PBL issues and the method are varied from one student to another.

Question Fourteen: Do you think that PBL could help you improve your critical thinking skills?

Table 3.13

Students' Opinions about Improving Critical Thinking Skills through Problem-based Learning

Options	**Frequency (N)**	**Percentage (%)**
Yes	93	82,30%
No	20	17,69%
Total	113	100%

As indicated in the table, the majority of the informants (82, 30%) agreed that PBL could help them in improving their critical thinking skills. However, few students (17, 69 %) claimed that PBL could not help them in improving CTS. This implies that the majority of students are aware of the importance of problem-based learning. However, few ignore its role in improving students' critical thinking skills.

Table 3.14

Students' Explanation

Options	**Frequency (N)**	**Percentage (%)**
Help you to remember the information	28	30,10%
Encourage you to think and rely on yourself	15	16,12%
Better understanding and going deeper in the issue	12	10,61%
It provokes thoughts to appear	20	21,50%
To see things from different perspectives and cope with each situation	18	15,92%
Total	93	100%

As it is shown 30, 10% of the participants declared that problem-based learning helps them to remember the information. This implies that when students solve the situation by themselves they will remember it in the future. In addition, 21, 50% stated that PBL provokes thoughts to appear; which makes the students critical thinkers. Whereas, for some informants (16, 12%), problem-based situation encourages them to think and rely on themselves. This denotes that PBL has a significant role in improving CTS and prepare students to achieve their educational goals. Likewise, few students (15, 92%) claimed that via using PBL they will consider things from different perspectives and cope with each situation. This implies that it has an important role in making students' more open-minded. Furthermore, the rest of the participants (10, 61%) explained that it helps them in improving their CTS via going deeper in the issue which leads to better understanding and solving the issue.

Table 3.15

Students' Justifications

Options	**Frequency (N)**	**Percentage (%)**
Critical thinking is an individual skill and it has nothing to do with the teaching method	9	45%
Empty	11	55%
Total	20	100%

Concerning students who said no, more than half of them (55%) gave no explanation for their answers. This implies that they have no justification for their choice. Additionally, the rest of them (45%) stated that critical thinking is an individual skill and it has nothing to do with teaching method. This denotes that the teaching method does not affect their critical thinking skills.

Question Fifteen: Which of the following activities can help you better to improve your critical thinking skills?

Table 3.16

Activities for Improving Critical Thinking Skills

Options	**Frequency (N)**	**Percentage (%)**
Promoting interaction among students	65	57,52%
Encouraging decision making	50	44,24%
Asking open ended questions	47	41,59%
Others	0	0%

As it is displayed in table 3.16, more than half of the participants (57, 52%) stated that promoting interaction among students has a significant role in improving their critical thinking skills. This denotes that students highly appreciate a classroom environment which encourages interaction between students where they engage together. Moreover, 44, 24% of the participants asserted that encouraging decision making is helpful in improving students' CTS. This implies that it has an important role in improving students' critical thinking skills. 41, 59% stated that asking open ended questions could help in improving CTS. This means that asking open ended questions has a significant role in improving students' CTS.

Question Sixteen: Would you please add any further comments or suggestions

Out of 113 students, only 17, 69% students added suggestions and commented on the topic of our research. The participants' comments and suggestions can be summarized in the following:

- The role of the teacher is very significant, especially in emphasizing the importance of critical thinking skills.
- Critical thinking is very important.
- Critical thinking is a good process to improve students' communicative skills.
- Problem-based learning is not clear and needs to be identified.
- Critical thinking is related more to literature it is interesting topic that links linguistics and literature.

3.1.6. Summary and Discussion of the Results from the Students' Questionnaire

In view of the previously mentioned results from students' questionnaire that covered students' general information, and their knowledge about CTS and PBL. Therefore, it shows that the majority of students (88, 9%) know critical thinking and they provide various definitions for it. Additionally, concerning students' use of CTS more than half of the participants (69, 91%) asserted that they sometimes use CTS in the classroom in addition to 15, 92% stated that they always use PBL in the classroom. This denotes that they are using CTS in the classroom. Moreover, the results showed that more than half of the participants (64, 60%) of selected analyzing as the most used skill in classroom then explaining with 56, 63%.Which indicates that students' rely on analyzing and explaining for better understanding. Besides, more than half of informants (65, 47%) saw that teachers' method affect their use of CTS in the classroom. Furthermore, the majority of students (76, 99%) stated that their teachers raise their awareness towards CTS importance in the classroom.

Moreover, half of the participants (50, 44%) viewed that CT development important to a high extent in their learning achievements. Likewise, half of participants (51, 32%) stated that they did not experience PBL situation in their classroom while 48, 64% stated that they experience PBL in their classroom. This denotes that the majority of teachers use different methods in their classrooms. 26, 54% of the participants mentioned their presentation as a

PBL activity. Furthermore, nearly half of the informants (44, 24%) stated that they used to solve PBL situations through CT and analysis and applying course content to real world examples and 43, 36% selected explaining concepts. Besides, some of the informants (38, 05%) claimed that collaborative learning is suitable to solve PBL situations. Whereas, 21, 23% stated that they used to solve PBL situations through managing projects and holding leadership roles. This indicates that both CT and analysis and applying course content to real world examples are suitable for first-year Master students to solve PBL situations. Likewise, the majority of students (82, 30%) agreed that PBL could help them in improving their CTS; this denotes that they are aware of PBL importance in improving their CTS. Therefore, they justify their answers in various ways 30, 10% of the participants argued that it helps them to remember the information .While; some students (21, 50) asserted that PBL provokes ideas and opinions to appear. 16, 12% claimed that PBL encourages them to think and rely on themselves. Additionally, some of the informants (15, 92%) stated that with PBL situations they will be able to cope with different situations. Whereas, the rest of the students (10%) claimed that PBL leads to better understanding of the issues which will make CTS appear; this means that PBL is helpful for improving students' critical thinking skills.

Concerning students' opinions about the most helpful activities for improving CTS, more than half (57, 52%) selected promoting interaction among students as suitable activity for improving CTS. Additionally, less than half of the informants (44, 24%) stated that encouraging decision making is the second suitable activity for improving CTS which makes asking open ended questions in the third suitable activity. This means that students highly appreciate interaction and discussion in classroom to improve their CTS. Consequently, we can claim that the hypothesis of the research is confirmed from first-year Master students' views and that using PBL method in classroom would improve students' critical thinking skills.

3.2. The Teachers' Questionnaire

3.2.1. Aims of the Teachers' Questionnaire

The questionnaire aims to investigate teachers' perspectives about critical thinking and the use of problem-based learning in the classroom. Moreover, the ultimate aim is to discover whether teachers use critical thinking skills and if they are important in the classroom or not and what teaching materials could help in improving their students' CTS. Additionally, it aims to know teachers' views about PBL and if it is a suitable method for improving students' CTS. Finally, the questionnaire looks further to discover teachers' opinions about the role of problem-based learning in improving EFL students' critical thinking skills.

3.2.2. Population of the Study

The current study is directed to teachers at the Department of English, 8 Mai 1945 University-Guelma. The sample is composed teachers who teach different modules and levels and they were selected randomly.

3.2.3. Description of the Teachers' Questionnaire

Teachers' questionnaire is theoretically organized according to the research layout. Mainly, it consists of twenty-one questions from different types: multiple-choice questions, dichotomous (yes-no) questions and ranking questions which are divided into three sections. (*see appendix B*).

Section One: General Information (Q1-Q4)

This section contains four questions (Q1-Q4). It aims at collecting data about how long teachers have been teaching English at the University, their specialty, the modules they are teaching, and if they teach or have taught first- year Master level.

Section Two: Critical Thinking Skills in EFL Classrooms (Q5-Q12)

This section opens with the fifth question, where teachers are asked to define CT and critical thinking skills. Then, teachers are questioned if they use critical thinking skills in classroom with providing justifications (Q6). Then, in (Q7) teachers are requested to order critical thinking skills according to their use in classroom. In (Q8) teachers are asked to describe their students' application of critical thinking skills in the classroom. In the ninth question teachers are required to select from the given options how they could improve the lack of critical skills' use. In question ten teachers are questioned if developing critical thinking skills based-teaching is necessary or not. In the eleventh question (Q11) teachers are asked to explain their answer. After that, (Q12) looks for the teaching materials that raise students' awareness toward the significance of critical thinking skills in their learning.

Section Three: The Impact of Problem-based Learning (PBL) on Improving Critical Thinking Skills (Q13-Q20)

This section opens with the thirteen question where teachers are asked to provide a description of problem-based learning. Question fourteen aims to know if they have ever used PBL in their classroom with explanation. Then (Q15) seeks to know if using problem-based learning (PBL) important in EFL classrooms or not. After that, they are requested to evaluate the importance of PBL in classroom (Q16). In (Q17) teachers are asked to select the class activities that could help better in solving PBL situations from the given options. (Q18) seeks to know if teachers' consider PBL a helpful method to improve students' critical thinking skills or not. Then, (Q19) looks for teachers' justifications. In the last question (Q20), teachers are requested to add comments or suggestions concerning the investigated topic.

3.2.4. Administration of the Teachers' Questionnaire

The questionnaire was administered on May 17th, 2022. It was given hand to hand to EFL teachers at Guelma University. The process of filling the questionnaire take one day and

teachers were promised that their answers will remain confidential and that they will only be used for the sake of research.

3.2.5. Analysis of the Results from the Teachers' Questionnaire

Section One: General Information

Question One: How long have you been teaching English at the university?

Table 3.17

Years of Teaching English at University

Options	**Frequency (N)**	**Percentage (%)**
Less than 12 years	8	40%
More than 12years	12	60%
Total	20	100%

From the results displayed in table 3.17, the majority of teachers (60%) stated that they are teaching English for more than 12 years. Additionally, less than half of the informants (40%) asserted that that they are teaching English at University for less than 12 years. This indicates that teachers' shares a varied experience in teaching, they have been exposed to many teaching methods and they are aware of students' level.

Question Two: What is your specialty?

Table 3.18

Teachers' Specialty

Options	**Frequency (N)**	**Percentage (%)**
Linguistics	10	50%
Civilization	4	20%
Literature	6	30%
Total	20	100%

As it is shown in table 3.18, half of the informants (50%) claimed that their specialty is linguistics, which indicates that the majority of EFL teachers at English Department are teachers of linguistics. 30% of teachers stated that their specialty is literature; and the rest of the sample (20%) admitted that they teach civilization. This is actually a good sign that the under investigated sample contains teachers from different specialties and that will gave us data from different perspectives.

Question Three: What are the modules you are teaching this year?

Table 3.19

The Modules that Teachers are currently Teaching (this year)

Options	**Frequency (N)**	**Percentage (%)**
Research methodology	3	15%
Testing and evaluation	1	5%
Literature	3	15
Discourse analysis	2	10
Educational psychology	2	10
Linguistic schools	2	10
Civilization	4	20
Phonetics	2	10
Culture	1	5
Written expression	2	10%
Study skills	2	10%

As it is indicated in table 3.19, (20%) claimed that they teach civilization this year .While, some teachers (15%) asserted that they teach literature and the same percentage of sample (15%) teach research methodology. Besides, the rest of the participants (10%) argued that they teach discourse. (10%) stated that they teach other modules like educational psychology, linguistic schools, phonetics, study skills, written expression. However, a very

limited percentage (5%) claimed to teach culture. This means that one teacher can teach many modules that go under his field of specialty.

Question Four: Did you taught master one students?

Table 3.20

Teaching Master One Students

Options	**Frequency (N)**	**Percentage (%)**
Yes	16	80%
No	4	20%
Total	20	100%

As it is noticed from the results in table 3.20, the majority of the informants (80 %) stated that they are teaching or have taught first-year Master level. This implies they know first-year Master students' level and abilities. Whereas, the rest of the teachers (20%) declared that they had not taught first-year Master level, which indicates that they are teaching other levels and their answers are significant and appreciated.

Section Two: Critical Thinking Skills in EFL Classrooms

Question Five: Could you define critical thinking?

Critical Thinking Definitions

- The ability to synthesize, analyze and come up with logical conclusion defined by (6) teachers

- CT entails displaying sophisticated and high complex cognitive capacities defined by (4) teachers

- The way how students question the given information and form their own interpretation defined by (4) teachers

- CT is the process of analyzing facts and dealing with learning critically defined by (3) teachers

As indicated teachers' defined CT in different ways 30% agreed that it is the ability to synthesize, analyze and come up with logical conclusion. This implies that critical thinking is a capacity that entails analyzing data with logic and reason. In addition, some informants (20%) stated that it (CT) entails displaying sophisticated and high complex cognitive capacities. which demonstrates that CT is not the simple ordinary thinking but complex to find something new. Moreover, some teachers (20%) claimed that CT is the way how students question the given information and form their own interpretation. This shows that students have to think in critical manner. While, few participants (15 %) asserted that CT is the process of analyzing facts and dealing with learning critically. This implies that learning needs students to apply CTS.

Question Six: Do you focus on using critical thinking skills in your classrooms? Please justify?

Table 3.21

Teacher's Focus on Critical Thinking Skills in the Classroom

Options	**Frequency (N)**	**Percentage (%)**
Yes	20	100%
No	0	0%
Total	20	100%

As it is displayed in table 3.21, the whole sample (100%) stated that they focus on critical thinking skills in the classroom. This implies that critical thinking skills are essential and needed in the classroom.

Table 3.22

Teacher's Justification

Options	**Frequency (N)**	**Percentage (%)**
CT sharpens responses and increases the ability to argue	4	20%
It makes students' voice heard	3	15%
It is important to develop students' language skills	2	10%
Since they are introduced to a foreign culture they should think critically	3	15%
Empty	8	40%
Total	20	100%

As it is shown in table 3.22, teachers' provide different justifications for their choice, some teachers (20%) asserted that because it sharpens responses and increases the ability to argue. This assumes that through CTS students will participate and engage in classroom discussion which is helpful for students'. While some informants (15%) claimed that since students' are introduced to a foreign culture, they should think critically. This means, learning English culture and language in general requires students to use critical thinking skills. Besides, 15% argued that they focus on CTS in the classroom because it makes students voice heard. This implies that through giving questions or tasks students will participate and provide their opinions. While a limited percentage (10%) asserted that they focus on CTS because it is important to develop students' language skills. This denotes that critical thinking skills have a relation with improving students' language skills.

Table 3.23

Teachers' Suggestions to Critical Thinking Skills

Options	**Frequency (N)**	**Percentage (%)**
Analyzing, interpreting	9	45%
Synthesis, explanation	4	20%
Brainstorming ,evaluation	3	15%
Empty	4	20%
Total	20	100%

As it is displayed in table 3.23, less than half of the informants (45%) opted for analyzing and interpreting; this implies that they are the most two useful CTS. However, some teachers (20%) mentioned synthesis and explanation. This denotes that they are the second most useful skills. Additionally, 15% selected brainstorming and evaluation .This means that maybe these teachers tend to apply these two skills more than the others.

Question Seven: Which of the following critical thinking skills teachers apply more in the classroom?

Table 3.24

Critical Thinking Skills Used in the Classroom Ranked by Teachers

Options	**Percentage (%)**	**Rank**
Analyze	86,41%	1
Evaluate	80,25%	2
Interpret	75,91%	3
Comprehend	71,66%	4
Explain	71,25%	5
Infer	63,08%	6

As indicated in table 3.24, the majority of teachers (86, 41%) ranked ‘analyze’ as the first critical thinking skill. This implies that the majority of teachers asserted that ‘analyze’ is the most used CTS in the classroom. A high percentage (80, 25%) ranked ‘evaluation’ as the second CTS. This denotes that ‘evaluation’ is used to a high extent in classroom by teachers. Moreover, a significant percentage (75, 91%) ranked ‘interpret’ as the third CTS. This indicates that interpret is one of the most three used CTS in the classroom. More than two-thirds of the informants (71, 66%) ranked comprehend as the fourth CTS. This means that comprehend is used in the classroom but not the very limited extent. Whereas, 71, 25% ranked explain as the fifth CTS. This demonstrates that explain is used to a very limited by teachers. Additionally, more than half of the participants (63, 08%) asserted infer as the six ranked CTS. This implies that infer is the least used critical thinking skill in the classroom.

Question Eight*:* How could you describe your students’ application of critical thinking skills in the classroom?

Table 3.25

Description of Students’ Critical Thinking Skills in the Classroom

Options	**Frequency (N)**	**Percentage (%)**
High	0	0%
Average	13	65%
Low	7	35%

As it is shown in table 3.25, more than two –thirds of the informants (65%) described students’ application of critical thinking skills as average. This denotes that these students use CTS in the classroom. However, one-third of informants (35%) described students’ application of critical thinking skills in classroom as low. This indicates that students do not apply CTS in the classroom to process information perhaps due to the nature of the modules.

Question Nine: If it is low, how could you improve this lack of critical thinking skills use among your students?

Table 3.26

Activities to Improve Students Lack of Critical Thinking Skills

Options	**Frequency (N)**	**Percentage (%)**
By making connections to real life situations	10	50%
Through group activities	8	40%
By asking questions	13	65%
Other(s)	0	0%

As it is displayed in table 3.26, 65% selected asking questions as the appropriate activity to improve students' lack of CTS. This denotes that via asking questions the students will provide their views about that specific issue which will improve their CTS. While, half of the teachers (50%) agreed that making connections to real life is a good activity to improve students' CTS. This implies that they believe that giving examples and connections to real life situations will improve students CTS. However, the rest of the teachers (40%) believed that group activities are appropriated in improving students' critical thinking skills.

Question Ten: Do you think that developing critical thinking skills-based teaching is significant?

Table 3.27

The Significance of Developing Critical Thinking Skills- based Teaching

Options	**Frequency (N)**	**Percentage (%)**
Yes	20	100%
No	0	0%
Total	20	100%

As it is displayed in table 3.27, the whole participants (100%) agreed that developing critical thinking skills-based teaching is significant. This implies that EFL teachers think that applying CTSBT is important and needed in EFL classroom.

Question Eleven: Whatever your answer is, please explain why?

Table 3.28

Teachers' Explanation

Options	**Frequency (N)**	**Percentage (%)**
To promote learning and increase students' autonomy	3	15%
It is part of the natural development of thinking which boosts students debate and solves real life problems	4	20%
Students have to learn and think about the knowledge they receive	4	20%
It enables both students and teachers to increase proficiency level	2	10%
It helps them in avoiding accepting anything without analyzing	2	10%
Empty	5	25%
Total	20	100%

Concerning teachers' justifications about the significance of developing critical thinking skills- based teaching. 20% of participants claimed that because it is part of the

natural development of thinking which boosts students debate and solves real life problems. This means that students would argument in logical and meaningful manner. Additionally, some teachers (20%) argued that because students have to learn and think about the knowledge they are receiving. This denotes that learning requires active students. Moreover, some teachers (15%) said that it promotes learning and increases students' autonomy; this implies that it motivates self-reliant and independent students. While, a limited percentage (10%) stated that it helps them to avoid accept anything without analyzing it. This denotes that developing CTSBT raises students' awareness to question information. Also, the same percentage 10% asserted that it enables both teachers and learners to increase proficiency level. This implies that Critical thinking skills-based teaching is significant for both teachers and students.

Question Twelve: If yes, what teaching materials that raise students' awareness towards the significance of critical thinking skills in learning process?

Table 3.29

Teaching Materials to Raise Students' Critical Thinking Skills

Options	**Frequency (N)**	**Percentage (%)**
Audio-visuals, handouts	8	40%
Reading books, novels and articles	10	50%
Empty	2	10%
Total	20	100%

As it is displayed in table 3.29, half of the sample (50%) mentioned reading books, novels and articles as effective teaching materials. This implies that reading in general will raise students' awareness toward the significance of CTS because the more students read the more they can argue about different issues. Additionally, less than half of the informants

(40%) asserted audio-visuals and handouts as effective teaching materials that raise students' CTS. This means that handouts and audio-visuals are helpful for specific type of students who tend to notice things which will raise their awareness toward the significance of CTS.

Section Three: The Impact of Problem-based Learning (PBL) on Improving Critical Thinking Skills (CTS)

Question Thirteen: What problem-based learning is?

Table 3.30

Teachers' Descriptions of Problem-based Learning

Options	Frequency (N)	Percentage (%)
A learner-centered approach method, opposing students to problems which they are supposed to provide a solution for them and the teacher observe how they dealt with it	16	80%
Empty	4	20%
Total	101	100%

Concerning teachers' description of problem-based learning situation, the majority of teachers (80%) described PBL as a learner-center approach method, opposing students to problems which they suppose to provide solution for them and the teacher observes how they dealt with them. This implies that the majority of teachers are familiar of this method.

Question Fourteen: Have you ever used PBL method in your classroom?

Table 3.31

Teachers' Use of Problem-based Learning in the Classroom

Options	**Frequency (N)**	**Percentage (%)**
Yes	13	65%
No	7	35%
Total	20	100%

Concerning teachers' use of PBL method in the classroom, more than half of the informants (65%) asserted that they use PBL method in their classroom. This implies that they recognize the importance and advantage of using this method in the classroom. Whereas, 35% of teachers stated that they do not utilize PBL in the classroom. This indicates that they experience other teaching methods.

Table 3.32

Teachers' Justifications

Options	**Frequency (N)**	**Percentage (%)**
The nature of the module does not need such method	4	20%
Time does not allow	2	10%
I prefer the direct traditional method	1	5%
Total	7	35%

Concerning teachers' who said 'No' justifications, 20% of teachers declared that the nature of the module does not need such method. This implies that there are modules which do not need solving problems. Besides, some informants (10%) stated that time does not allow to use such method. This implies that PBL needs a large time. Whereas, only (5%)

admitted that they prefer the traditional way of teaching (as mentioned by teachers). This means that PBL is not suitable for the nature of their modules.

Question Fifteen: Do you think that using PBL is important in EFL classroom?

Table 3.33

Teachers' opinions about Problem-based Learning in EFL Classrooms

Options	Frequency (N)	Percentage (%)
Yes	19	95%
No	1	5%
Total	20	100%

As it is displayed in table 3.35, a high percentage of the informants (95%) agreed on the importance of PBL in EFL classroom. This indicates PBL has significant role in EFL classrooms, and they consider it as a crucial method in education.

Question sixteen: If yes, how would you evaluate the importance of PBL in classroom?

Table 3.34

The importance Problem-based learning in EFL Classrooms

Options	Frequency (N)	Percentage (%)
Not important	1	5%
Important	14	70%
Very important	5	25%

Concerning the evaluation of PBL importance in the classroom, more than two-thirds of the participants (70%) declared that PBL is important to a moderate degree, and some of them (25%) declared that PBL is very important in the classroom. This implies that they believe that PBL is significant and complementary method in the classroom.

Question Seventeen: Which of the following class activities could help better in solving PBL situations?

Table 3.35

Class Activities that Help in Solving Problem-based Situations

Options	**Frequency (N)**	**Percentage (%)**
Collaborative learning	9	45%
Using CT skills	12	60%
Managing project and holding leadership roles	6	30%
Applying course content to real world examples	10	50%
Explaining concepts	8	40%
Other (s)	0	0%

According to the findings presented in table 3.35, more than half of the investigated sample (60%) assumed that using CTS is an effective activity for solving PBL situations. This denotes that CTS have a significant impact in solving BPL situations. Whereas, half of the informants (50%) declared that applying course content to real world examples is an effective tool that helps in solving PBL situation. This implies that through making connection to real life that will increase students' ability to solve problems. Besides, less than half of the informants (45%) selected collaborative learning as a suitable activity .This means that when students work in groups and discuss issues together this will help them better in solving PBL situations. 40% of the participants asserted that explaining concepts help better in solving problems. This implies that via asking students to explain concepts they solve different issues in better way. Additionally, less one-third of the sample (30%) claimed that managing project and holding leadership roles. This implies that when students'

hold leadership and divide the work that will help better in solving problems because each one will deal with aside from the issue.

Question Eighteen: Do you think that problem-based learning is helpful to improve students' critical thinking skills?

Table 3.36

Improving Students' Critical Thinking Skills through Problem-based Learning

Options	**Frequency (N)**	**Percentage (%)**
Yes	19	95%
No	1	5%
Total	20	100%

As it is displayed in table 3.36, the majority of teachers (95%) agreed that problem-based learning could improve students' critical thinking skills. This indicates that teachers' think that PBL is an effective method to improve students' critical thinking skills.

Question Nineteen: Justify your answer?

Table 3.37

Reasons for Improving Students' Critical Thinking Skills through Problem-based Learning

Options	Frequency (N)	Percentage (%)
It creates independent, self-reliant students who use their mind to solve problems	4	20%
Following PBL would develop critical thinker students who consider others perspectives	5	25%
It enhances students metacognitive skills	4	20%
It trains students to use their previous experiences and develop learning abilities	3	15%
Empty	4	20%

As it is displayed in table 3.37, teachers provide different justifications for improving students' CTS through PBL. 25% of the informants said that following PBL would develop critical thinker students who consider others perspectives. This implies that when students answer PBL situation they would know different opinions about the same situation which will make them consider different perspectives. Additionally, some teachers (20%) asserted that it creates active independent and self –reliant students who use their mind to solve problems. Likewise, the same percentage (20%) claimed that it enhances students' metacognitve skills. This implies that PBL has a significant role in making objective, and independent students. Moreover, few teachers (15%) stated that, it trains students to use their

previous experiences and develop learning abilities. This means that PBL is essential in improving students learning abilities.

Question Twenty: Would you please add any further comments or suggestions

Teaches did not add comments or suggestions about the topic.

3.2.6. Summary and Discussion of the Results from the Teachers' Questionnaire

In view of the previously mentioned results from teachers' questionnaire, which cover teachers' general information, in addition to background knowledge about critical thinking skills and problem-based learning. It showed that the majority of teachers (85%) have defined CT in various ways, and the whole participants (100%) asserted that they focus on using CTS in the classroom because it sharpens their responses and increases the ability to argue, makes students' voice heard and it develops students' language skills. Moreover, concerning CTS teachers' tend to apply more in classroom the majority of them (86, 41%) ranked analyzing and 80,25% ranked evaluating. This means that analyzing and evaluation are the most used in the classroom. Furthermore, the whole informants (100%) agreed that developing critical thinking skills-based teaching is significant. This implies that teachers' believe that applying CTSBT is essential and needed in EFL classrooms and they provide different justifications. For instance, it promotes learning and increases students' autonomy. Besides, half of the informants (50%) declared that reading books, novels and articles are the best teaching materials that raise students' awareness toward the significance of CTS. This implies that reading in general is a crucial factor for improving CTS. Likewise, the majority of teachers' (80%) described PBL method. This implies that most teachers' know this method. Likewise, more than half of the informants (65%) indicated that they use PBL in the classroom. Therefore, teachers use PBL in different ways through raising questions for discussion, group works and via giving different activities to solve them. A high percentage of teachers (95%)

agreed in the importance of PBL in EFL classrooms. This indicates that they consider PBL significant in education.

Concerning activities that help better in solving PBL situations more than half of the participants (60%) stated that using critical thinking skills is the most helpful activity, which reveals that CTS have a relationship with solving PBL situations. In addition, almost all the informants (95%) agreed that PBL could be a helpful method to improve students' critical thinking skills, and they provide many justifications for their choice. As a result, they stated that following PBL will develop critical thinker students who are independent, self-reliant, and open minded. In addition, it (PBL) enhances students' metacognitive skills and trains them to use their previous experiences. In conclusion the current study tended to explore the role of PBL method in improving students' CTS in the classroom. Results showed the interconnectedness existing between PBL and critical thinking skills. Consequently, the above results obtained from teachers' questionnaire analysis confirmed the research hypothesis that is 'using PBL method in classroom would improve students' critical thinking skills'.

Conclusion

Based on the results collected from the field investigation that is recorded in this third chapter, it is proved that there is a relationship between problem-based learning and critical thinking skills. Thus, PBL can be a helpful method in improving students' CTS because through following PBL class activities, students will discuss, judge, and share their points of view and know other students' opinions about the problem. Consequently, CTS need to be used in the classroom. Accordingly; the adequate implementation of PBL will have a significant role in improving students' critical thinking skills. The role of the teacher is, then, very important in encouraging students to think critically via selecting a method that promotes and greatly impacts students' use of critical thinking skills in the classroom.

General Conclusion

This research seeks to explore the improvement of students' critical thinking skills through problem –based learning method. Its main aim is to show the effectiveness of problem-based learning on critical thinking skills improvement. In addition; this research is based on the quantitative descriptive method which relies on the use of two questionnaires for both teachers and students' to collect data. Then, the results of the questionnaires confirmed the hypothesis that problem-based learning is an effective method to improve first-year Master students' critical thinking skills. Consequently, some pedagogical implications are addressed concerning higher education to add a module for practicing CTS or select workshops where students are asked to provide rational objective point of views. Besides, the teachers should pay attention to the methods and strategies used in the classroom because they affect students' critical thinking skills. Moreover, teachers' should shift the method to problem-based learning where the students are the centre of the class in order to improve their critical thinking skills. Likewise, we would like to make some recommendations for students and teachers. Each student should design his/her handouts about the lesson then they exchange them in the classroom, after that they discuss them, which would improve students critical thinking skills. Additionally, teachers should use pushing for explanation activity that makes the students provide justifications for their answers. Concerning, the limitations encountered are the inability to know all the teachers perspective about the topic only (20) answer the questionnaire. Besides, there were not enough sources concerning the implementation of PBL in education. Hence, future researches on the topic may cover the topic from an experimental dimension to discover other issues which have not been covered yet.

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Appendix A

Students' Questionnaire

Dear Students

You are kindly invited to answer the following questionnaire which is part of a Master dissertation research that investigates the impact of problem-based learning on EFL students critical thinking skills: the case of Master I students at Guelma University. The questionnaire aims then at collecting data which will help us carry out field investigation chapter.

We would appreciate your collaboration if you could answer this questionnaire. Please, tick the appropriate answer or make a full statement when necessary. Your responses are going to be treated with great confidentiality. Thank you in advance for your cooperation.

Rayane Benmars
Achour Fatima Zohra
Department of English
Faculty of letters and languages
University 08 Mai 1945, Guelma

Section One: General Information

1- Gender :

Female	
Male	

2- How long have you been studying English? …….years

3- Why you have chosen to study English at the university?

……..

4- How is your English proficiency?

High	
Average	
Low	

Section Two: Critical Thinking Skills in EFL Classroom

5- Could you provide a definition for critical thinking?

……
……
……

6- How often do you use critical thinking skills in classroom?

Always	
Sometimes	
Rarely	
Never	

7- Which of the following critical thinking skills you tend to use more in classroom?

Interpreting ……

Analyzing……..

Evaluating……..

Inferring ……..

Explaining …….

8- To what extent the teacher method can affect your critical thinking?

To a very limited extent	
To a limited extent	
To a high extent	
To a very high extent	

9- Do your teachers raise your awareness towards critical thinking skills importance in classroom instruction?

YES ☐ NO ☐

10- To what extent do you think critical thinking skills' development is important for your learning achievements?

To a very limited extent	
To a limited extent	
To a high extent	
To a very high extent	

Section Three: The Impact of Problem-Based Learning (PBL) on Improving Critical Thinking Skills (CTS)

11- Have you experienced any Problem-Based Learning situation in your classroom?

Yes	
No	

12- If yes, can you describe it please?

……
……

13- How do you use to solve a problem-based learning situation?

Via:

Collaborative learning …….

Critical thinking and analysis ……..

Managing project and holding leadership roles ……

Applying course content to real world examples ……..

Explaining concepts ……...

14- Do you think that PBL could help you improve your critical thinking skills?

Yes	
No	

- If yes, please explain how
  ……
  ……
- If no, say why
  ……
  ……

15- Which one of the following activities help you to improve your critical thinking skills?

- Promoting interaction among students…….
- Encouraging decision making ……
- Asking open ended questions……
- Other(s) would you specify bellow
  ….……
  ……
  ……

16- Would you please add any further comments or suggestions

……
……
…….

Thank you

Appendix B

Teachers' Questionnaire

Dear teachers

You are kindly invited to answer the following questionnaire which is part of Master dissertation research. The questionnaire aims at collecting data about a research theme that investigates "The Impact of Problem-based Learning on EFL Students' Critical Thinking Skills in the Classroom", the case of Master I students-Guelma University. Thus, the obtained data will be described, analyzed and interpreted in field investigation part. We would then appreciate your collaboration if you could answer this questionnaire. Please, tick the appropriate answer, rate or make a full statement when necessary. Your responses are going to be treated with great confidentiality and care.

Thank you in advance for your cooperation.

Rayane Benmars

Achour Fatima Department of English

Faculty of Letters and Languages

University 08 Mai 1945, Guelma

20021/2022

Section One: General Information

1- How long have you been teaching English at the university?
…….years.

2- What is your specialty?

Linguistics	
Civilization	
Literature	

3- What are the modules you are teaching this year?
……

4- Did you teach Master One level?

Yes ☐ No ☐

Section Two: Critical Thinking Skills in EFL Classroom

5- Could you define critical thinking please?

……
……
……

6- Do you focus on using critical thinking skills in your classrooms? Please justify?

Yes ☐ no ☐

……
……

- If yes, could you please name some of them
  …….....

7- Which of the following critical thinking skills do you tend to apply more in the classroom? (You can order them using numbers (1.2.3….)

Comprehend……..

Interpret ……

Analyze……..

Evaluate……..

Infer ……..

Explain …….

8- How could you describe your students' use of critical thinking skills in the classroom?

High	
Average	
Low	

9- If it is low, how could you improve this lack of critical thinking skills use among your students in the classroom?

- By making connections to real life situations …….
- Through group activities ……..
- By asking questions……..
- Other(s) would you please specify them bellow

……
……

10- Do you think that developing critical thinking skills-based teaching is significant?

Yes ☐ No ☐

11- Whatever your answer is, please explain why?

……
……

12- If yes, what teaching materials could raise students' awareness towards the significance of critical thinking skills in the classroom?

……
……
……

Section Three: The Impact of Problem-Based Learning (PBL) On Improving Critical Thinking Skills (CTS)

13- Could you please describe what problem-based learning method is?

……
……
……

14- Have you ever used PBL method in your classroom?

Yes ☐ No ☐

If yes, please say how?

……
……

If no, please say why?

……
……

15- Do you think that using such method (PBL) is important in EFL classrooms?

Yes ☐ No ☐

16- If yes, how would you evaluate the importance of PBL in the classroom?

Not important	
Important	
Very important	

17- According to you, which of the following class activities help in solving PBL situations?

- Collaborative learning …….
- Using critical thinking skills ……..
- Managing project and holding leadership roles ……
- Applying course content to real world examples ……..
- Explaining concepts …….
- Others, please add them below

……

18- Do you think that PBL is helpful in improving students' critical thinking skills?

Yes ☐ No ☐

19- Please justify your answer

……
……
……

20- If you have any further comments or suggestions concerning the topic, please add them

……
……
……

Thank you

ملخص

تسعى الدراسة الحالية إلى معرفة مدى تأثير تطبيق منهجية التعلم القائم على حل المشكلات على تنمية مهارات التفكير النقدي لطلاب اللغة الإنجليزية كلغة أجنبية . يهدف هذا البحث لمعرفة آراء الطلبة حول هذه المنهجية إتباعا للأهداف المسطرة و أسئلة الموضوع، حيث افترضنا أن مهارات التفكير النقدي ستتحسن عند الطلاب الذين ينخرطون في طريقة التعلم القائمة على حل المشكلات. للتأكد من صحة فرضية البحث اعتمدنا الطريقة الوصفية الكمية لجمع المعلومات من ماستر بقسم اللغة الإنجليزية ، جامعة 8 ماي 1945، بالإضافة إلى خلال توزيع استبيان كتابي لطلبة السنة أولى ما استبيان آخر للأساتذة لمعرفة آرائهم حول تطبيق هذه المنهجية ، و قد أكدت النتائج المتحصل عليها أن هذه المنهجية تفيد في تحسين مهارات التفكير النقدي لدى الطلاب ، لأنها تمكن الطلاب من مشاركة و مناقشة وجهة نظرهم و معرفة آراء الطلبة الآخرين حول المشكلة ، لذلك يجب أخذ هذه المنهجية بعين الاعتبار و محاولة تطبيقها لتحسين مهارات التعلم .

Résumé

L'étude actuelle cherche à découvrir l'effet de l'application de la méthodologie d'apprentissage par problèmes sur le développement des compétences de pensée critique des étudiants EFL. Cette recherche vise à connaître les opinions des étudiants sur la méthodologie, en suivant les objectifs fixés et les questions du sujet, car il est supposé que les compétences de pensée critique s'amélioreront pour les étudiants qui s'engagent dans la méthode d'apprentissage par problèmes. Pour vérifier la validité de l'hypothèse de recherche, nous avons adopté la méthode descriptive quantitative pour recueillir des informations en distribuant un questionnaire écrit aux étudiants de première année du Master du Département de langue anglaise, Université du 8 mai 1945,En plus d'un autre questionnaire destiné aux professeurs pour connaître leur opinion sur l'application de cette méthodologie. Les résultats obtenus ont confirmé que la méthodologie est utile pour améliorer les capacités de pensée critique des étudiants, car elle permet aux étudiants de partager et de discuter de leur point de vue et de connaître les opinions des autres étudiants sur le problème, il doit donc être pris en compte la méthodologie est prise en considération et tentée d'être appliquée pour améliorer les compétences d'apprentissage.