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The Effect of Problem-Based Learning on Critical Thinking in EFL Classrooms

**A Dissertation Submitted to the Department of Foreign Languages in Partial Fulfilment
of the Requirements for a Master's Degree in Didactics**

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Dedications

*Firstly, I dedicate all praise and success to **Allah** (SWT) none of this would have happened if it were not for His mercy, guidance, and protection.*

To myself, for holding on, for continuing despite every difficult moment, and for finding the strength to keep going.

For hope, for the blue sky, the beach, the sunset, the flowers, and the simplest things that kept me alive.

*For my precious mother, **Souad**. Thank you for everything that you have done. Thank you for making me who I am today. I hope that one day I will be able to repay even half of what you have done.*

*To my dear father **Nacer**, I am so grateful for you. I hope I will always make you proud.*

*To my beloved nephew, **Aous**.*

*To the soul of my dear grandfather, **Mohammed Kellil**.*

*To my grandmother **Zebida**.*

*To my three sisters, **Aya, Amani, and Maya**.*

***Aya**, for her advice, love, and care.*

***Amani**, my blessing, whose unwavering presence was the lone light that endured the darkest hours of my life.*

***Maya**, my home, the one who turned ordinary moments into a refuge of warmth and belonging.*

To my flowers, the ones who made life bloom with color, laughter, light, and joy

Slanis, Souha, Anfal, Milissa, Hadjer, and Malak.

*To my brothers, **Akram and Mohammad**, and to my sisters-in-law, **Hadjer and Amira.***

*To my beloved uncles, **Hamid, Azzedine, and Hamid.***

*To my dear aunts, **Ilham, Nadjat, and Wahiba.***

*To my beloved cousins, **Islam, Fares, Zineb, Soundous, Wassim and Manar.***

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Abstract

The current study aims at examining the effect of Problem-based learning (PBL) on critical thinking in EFL classrooms. Therefore, the problem at hand seeks to investigate the extent to which Problem-based learning enhances students' critical thinking skills and improves their problem-solving skills and their performance in English. Moreover, it intends to explore EFL teachers' perceptions regarding the implementation of PBL and its role in fostering critical thinking among learners.

To carry out this research, a mixed-method approach involving both quantitative and qualitative research designs was adopted. Accordingly, a questionnaire was administered to first-year master students of Didactics at Abbes Laghrour University at Khenchela, in addition to a semi-structured interview conducted with EFL teachers of master, in order to meet the research objectives.

The gathered data were analyzed using Google Forms. Ultimately, the results revealed that Problem-based learning has a positive effect on enhancing students' critical thinking skills, encouraging collaboration, and promoting active learning in EFL classrooms. Further, EFL teachers confirmed that PBL helps students become more independent and engaged in the learning process. However, some challenges related to the implementation of PBL were also identified.

List of Abbreviations

EFL: English as a Foreign Language

PBL: Problem-Based Learning

CT: Critical Thinking

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GENERAL INTRODUCTION

Introduction

Teaching a foreign language can be challenging but rewarding job that opens up entirely new paths of communication to students. It is beneficial for teachers as well, to have knowledge of the many different language learning approaches, including EFL teaching methods so they can be flexible in their instruction methods and adapting them when needed.

Since the use of teacher-centered approaches were the most usual, common and practical methods of teaching worldwide. In Algeria, however, learner-centered pedagogies that emphasize collaboration, motivation, and deeper critical thinking have been more prevalent in recent years. As an instructional approach, PBL represents a paradigm shift from teaching traditionally, in which the teacher is the sole source of knowledge, to student-centered instruction, which offers learners opportunities to benefit from the vast amount of information available to them. According to Gomez (2016), the development of information communication technologies presented a new situation that is challenging to former and current generations. Thus, he advocated PBL, as one of the most pioneering approaches in 21st-century education, which can prepare EFL learners to become operative problem solvers.

Problem-based learning gained an increasing attention as a method that encourages learners to explore ideas, analyze information, and develop knowledge through real-world problems. it was mainly designed for medical students around 1960s Canada, then it has been adopted in EFL studies later as well. Within the past decade, many studies have been conducted ,that support this assumption of PBL and its effectiveness in motivating and making students productive Savery (2015),and enhance student collaboration Sumarni (2022), encourage learner autonomy, develop English learning, produce a student-centered environment Savery (2006), foster those critical thinking skills which are essential for EFL students as well to loan them tools they need in solving problems analytically (especially masters and PhDs). Although

previous researchers have already recognized the importance of finding a place for critical thinking in EFL studies, such as Barnawi (2011) yet, challenges such as limited class time and curriculum demands could restrict its applications Thomas (2000).

Traditional teaching methods that rely heavily on memorization and recited lectures often contribute to student fatigue with the repetitive nature of the routine and do not sufficiently encourage deep thinking. In contrast, PBL promotes active engagement since it illustrates various benefits, for example, Mustaji, Iskander, Jannah, and Wicaksono (2021) found that PBL improved students' critical thinking while reading in English.

In Algeria, Ben Abderrahmane, Boukhalet, and Touati (2022) reported that both teachers and students observed improved collaboration and critical thinking when PBL was implemented in EFL classes. Similarly, Astaifi (2024) found that Moroccan EFL students developed critical thinking and problem-solving skills through PBL activities.

Despite these results, there are some research gaps, for example factors such as the role of the teacher in facilitating PBL in EFL classrooms, examining the overall development of learners' critical thinking skills in EFL contexts, learner's proficiency level, lesson and task design that may influence the effectiveness of PBL, have not thoroughly explored, particularly in higher education contexts.

Statement of the problem

The implementation of PBL in EFL education is full of challenges for both teachers and learners. A growing body of qualitative research was concerned with investigating the main challenges in the adoption of PBL in various educational contexts. Rogers (2014) summarized the encountered challenges in terms of the shift in roles, lack of training and experience, and unprepared classes. This section reviews some of these challenges, as it would not be possible to present the effectiveness of PBL without mentioning its possible related problems.

Implementing PBL in foreign language education triggered challenges faced by teachers, challenges met by learners, in addition to other challenges relating to the use of PBL teaching materials. As far as teachers are concerned, the lack of instructional resources and training are the main reasons for the challenges they face while teaching through PBL. Mathews-Aydinli (2007) contended that the PBL curriculum designers should provide teachers with accurate resources and adequate training. PBL approach is different from traditional approaches. Therefore, teachers should be trained to design a problem scenario, which prompts the use of cognitive and metacognitive skills. The absence of appropriate teaching resources and training leads to the misapplication of the PBL approach (Ansarian & Lin, 2018).

As previously stated, PBL was first implemented in subjects such as mathematics and science, therefore a considerable amount of research has been conducted in these areas, since it enhances engagement and analytical abilities, however, there is a significant lack of studies regarding how PBL affect critical thinking in EFL. Moreover, Gidcumb (2016) found another challenge among teachers that is hesitancy stemming from unfamiliarity with the approach. Adopting the role of facilitators instead to knowledge providers produced a problem for novice teachers. Rogers (2014) found that teachers felt hesitant about the instructional choices due to unfamiliarity and inexperience with PBL. She further argued that this problem originated from inexperience and lack of confidence. According to Ansarian and Lin (2018), language teachers may lack confidence in the PBL approach, as they believe that letting learners look for answers themselves means that they are neglecting their roles as teachers. Indeed, PBL is wired by self-directed learning and considers teachers as tutors who are required to change their traditional roles. In this manner, Landeen et al. (2013) suggested that the possible way to deal with this ambiguity would be through expanding both tutors' and students' experience with PBL, hence developing familiarity and increasing the teachers' tolerance of ambiguity.

The current research is an exploratory case study that aims to investigate teachers'

readiness to apply PBL to foster critical thinking skills in EFL classrooms. It also sought to explore EFL learners' perceptions of PBL by taking the English section of the foreign languages department at Abbes Laghrour University Khenchela as a case in point. Therefore, the main questions that set the current study are what are EFL learners' perceptions of PBL? Are Algerian EFL learners motivated to learn through PBL? Are EFL teachers furnished to apply PBL in their classrooms?

Aims of the study

Exploring teachers and learners' attitudes, perceptions and challenges concerning the effects of PBL on learners 'critical thinking.

Research questions

Q1: How does problem-based learning influence the development of critical thinking skills among EFL learners?

Q2: What roles do teachers play in implementing problem-based learning to support learners' critical thinking?

Q3: What are the challenges that both teachers and learners face while implementing PBL?

Research objectives

1-Explore learners' attitudes, perceptions concerning the effects of PBL on their critical thinking.

2-Explore Teacher's attitudes, perceptions concerning the effects of PBL on learners 'critical thinking.

3- Investigate how problem-based learning influences the development of critical

thinking skills among EFL learners.

4- Investigate teachers' roles in implementing problem-based learning to support learners' critical thinking.

5- Explore the challenges that both teachers and learners face while implementing PBL.

Significance of the study

The significance of the study lies in investigating the impact of problem-based learning on critical thinking in EFL classrooms. The findings are expected to provide insights into how PBL can contribute to the development and engagement of deeper and analytical thinking skills.

For students, PBL helps them to develop flexible knowledge, effective problem-solving skills, self-directed learning, and effective collaboration skills (Hmelo ,2004).

For teachers, this study highlights their role to facilitate learning by supporting, guiding, and monitoring the students' learning process (Barrows ,1986). Examining these functions may help teachers implement more effective learner-centered pedagogical strategies that promote critical thinking.

In addition, the results may provide insights to curriculum designers about the possible advantages of integrating PBL into EFL programs and promote a shift toward more interactive teaching approaches (Prince & Felder, 2006). Overall, this research contributes to both theoretical and practical knowledge regarding the implementation of PBL in higher education EFL contexts.

Research methodology

This study will incorporate a mixed-methods approach, combining quantitative and qualitative methods in order to thoroughly examine the impact of PBL and gain a

comprehensive understanding of its effects on students' critical thinking skills in EFL classrooms. Additionally, it aims to explore the teacher's role.

The Quantitative Method

The quantitative data will be collected through questionnaires administered to 40 Master's degree EFL students in order to examine their attitudes, views, and opinions regarding how PBL activities enhance the progression and improvement of their critical thinking skills.

The Qualitative Method

The qualitative data will be collected through semi-structured interviews with teachers.

The participants of this study will include: 40 Master one's EFL students, and 4 of Abbes Laghrour University's EFL teachers, those who apply PBL in their classrooms along with those who rely on traditional teaching methods, enabling comparisons between different instructional methods. A selective sampling method will be used to recruit participants who are relevant to the research objectives.

By combining quantitative and qualitative data, this research aims to present both measurable evidence and comprehensive insights into how PBL influences learners' critical thinking and how teachers' instructional practices contribute and support this process.

The Structure of the dissertation

This dissertation is divided into three main chapters: two theoretical chapters and one practical chapter.

Chapter One is devoted to Problem-based learning. It provides an overview of the concept of PBL and its implementations in EFL classrooms. It also discusses the importance of PBL in language learning, its different applications, and the changing role of the teacher from

a traditional lecturer to a facilitator and guide within a learner-centered environment.

Chapter Two focuses on critical thinking, its conceptualization, cognitive foundations, taxonomies.

Chapter Three represents the practical part of the study. It describes the research methodology, the participants, and the research tools used to collect data, namely the questionnaire and the interview. In brief, this chapter is devoted to the analysis and interpretation of the findings in order to investigate the effect of Problem-Based Learning on critical thinking in EFL classrooms.

CHAPTER ONE

Problem-based learning

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Introduction

English language education is highly valued in the agenda of Algerian higher education policymakers. It is considered critical for the evolution of scientific research and the integration of Algerian students into the globalized world in which English is deliberated as an international language. Indeed, Ansarian and Lin (2018) contended that the status of the English language and the emergence of information communication technologies have presented challenges to the ways English can be taught. They further claimed that the accessibility of English language resources and communication via the internet requires special attention from EFL teachers while deciding on the teaching methodology to deal with the current supplies. Problem-based learning (PBL) is a student-centered pedagogy based on the constructivist learning theory through collaboration and self-directed learning. With PBL, students create knowledge and comprehension of a subject through the experience of solving an open-ended problem without a defined solution. Rather than focusing on learning problem-solving, PBL allows for the development of self-directed knowledge acquisition, along with enhanced teamwork and communication skills. Although originally developed for medical education (UCONN/ University of Connecticut), its use has expanded to other disciplines such as EFL studies.

With PBL, the teacher's role is to guide and challenge the learning process, rather than provide knowledge, while students engage in knowledge construction through enhancing their critical thinking skills.

In this chapter we shall discuss the evolution and application of PBL in foreign languages education, the implementation of PBL, PBL and EFL education, theoretical foundations of PBL, limitations and challenges of PBL and EFL.

1.1 The Evolution of PBL in foreign language education

The idea of PBL at appeared quite early. Since ancient Greece, Socrates paid attention

to the problematic features in teaching. In 1964, W. Okon (a Polish educator) completed a fairly complete and valuable work on problem-solving teaching. In this research, the author presented a relatively thorough description of the theoretical basis and the process of creating a problem situation (Okoń, 1964). According to Martin (1996), PBL first appeared in medical schools at Case Western Reserve University in the United States in the 1950s, but it was officially introduced as a methodology by Howard Barrows at McMaster University in Ontario, Canada, in the late 1960s (Boud & Feletti, 1997; Delisle, 1997; Magnussen et al., 2000). In the former Soviet Union, many authors conducted studies and applied PBL in teaching, such as M.N. Skatkin, A.IaGheedo, B.E. Raicop, N.A. Rizolop, M.A. Rupnicova, N.M. Verzilin, V.I. Makximova and others. In addition, PBL was widely studied and applied in many universities in America and Europe (Barrows, 1996; Boud & Feletti, 1997; Duch et al., 2001; Bédard et al., 2012). PBL also spread to many schools in Australia (Eun-Kyung et al., 2011; Barry et al., 2012; Choi et al., 2014), many countries in Asia (e.g., Singapore, Malaysia) (Teoh et al., 2011; Samsiah et al., 2012), and in Algeria a study conducted with Master students at Constantine 1 University applied PBL in an ESP (English for Specific Purposes) course. The results showed that students had positive attitudes toward PBL and improved problem-solving skills and intercultural competence, also, a researcher (Montasser Kellil) in the English department at Abbess Laghrour University in Khenchela experimented with PBL in literary text classes. The findings indicated that students reported practicing PBL activities and their attitudes toward the method were related to how often it was used in class. Despite these experiments, research shows that traditional lecture-based teaching is still dominant in Algerian universities, and many students and teachers are not very familiar with PBL. Some studies report that many students had never experienced problem-based language learning before, which explains why the approach is not yet common. with more focus placed on the method of learning rather than the subject being learned. These authors claimed that lectures were usually not theoretically verbose

but guided inquiry and problem-based research. Students were able to conduct research in groups and independently search for information from many different sources when teachers summarized, adjusted and added important information.

1.2 The Application of PBL in Foreign Language Education

Foreign language teaching and learning in Algeria in the past decade has undergone significant fundamental changes with the communication approach commonly applied in foreign language classes. Although these changes have helped learners become more active in acquiring knowledge, they have not really mastered the learning process. The learner-centered approach in the process of teaching and learning foreign languages has not been fully applied. Traditional teaching methods still exist, which means the teacher is still the main source of knowledge and understanding. As a result, the role of learners in creating knowledge in the teaching process has not been very focused.

Traditional teaching methods are no longer suitable when learners need to learn together with practice, create, and share knowledge actively in real learning situations. On that basis, researchers have developed many new ideas and approaches in teaching such as interactive pedagogy (Madeleine & Jean, 2009), flipped classroom (Alvarez, 2011; Berrett, 2012), and problem-based learning (PBL) (Phan, 2002; Nguyen et al., 2010). The problem-based approach is being studied, applied, and leveraged by educators in many countries in order to enhance students' effectiveness and positivity in studying, helping them to develop their own abilities and improve academic achievement. In Algerian EFL programs, PBL is not always explicitly identified, however, its principles are present, textbooks often include problem-solving tasks, project work and real-life communication activities. In the Algerian Universities (especially in the English department) PBL has been experimented through different modules such as:

- Oral expression.

- Written expression.
- ESP (English for specific purposes).
- Literature classes (as previously mentioned in the literary text experiment). Although Problem-Based Learning is increasingly recognized in Algerian EFL education as an effective approach to enhance language proficiency and critical thinking, its implementation remains limited.

PBL engages students in solving authentic problems and encourages them to think critically about information and knowledge (Savery ,2006), PBL was perceived and applied around 1960's at the medical school of McMaster University, Canada (as it was mentioned earlier). Ever since the principles of PBL have reached inclusive recognition in various domains. Accordingly, PBL is adopted in terms of various models and strategies for learning in higher education institutions that are adjusting to accommodate modern education requirements (Jensen, Stentoft & Ravn, 2019). Learning, in this approach, is based on a raised problem. The problem could be a challenge, query, or a puzzling situation that entails a solution or an elucidation. PBL principles maintain that students do not learn simply by receiving information. Instead, they need to construct their insights and perceptions personally through experiments.

According to Duch, Groh, and Allen (2001), the PBL approach uses intricate, perplexing, and authentic problems for stimulating the students to identify and find the concepts and principles required to solve those problems. In this learning process, the students work in small groups, cooperate for attaining, communicating, and constructing knowledge.

In this vein, Levin stated that PBL is an instructional method that encourages learners to apply critical thinking, problem-solving skills, and content knowledge to real-world problems and issues. Instruction is more student-centered and less teacher-directed than in traditional classrooms. Students assume considerable responsibility for their own learning by locating

much of the information they need to solve the problems at hand. (2001, p. 1).

Savin-Badden (2003) claimed that the focus in PBL is on developing the content of learning around problem structures rather than subjects or disciplines. Students work cooperatively to resolve or accomplish these structures but they are not predicted to obtain determined sets of correct answers. Alternatively, they are supposed to engage with the problem structure to decide on the information they need to learn or the skill they need to acquire for resolving the problem effectively. As a result, educationalists consider PBL as an approach that educates students to learn with complexity. That is to say, PBL assists students to recognize that learning and life occur in contexts. The contexts influence the solutions that are accessible and conceivable. In this manner, Tan contended that “PBL is recognized as a progressive active learning and learner-centered approach where unstructured problems (real-world or simulated complex problems) are used as the starting point and anchor for the learning process” (2004, p.7).

There are some similarities among the views of these researchers. First, PBL is a learner-centered teaching method, which is suitable for university teaching. It empowers learners to integrate theory and practice, apply knowledge and skills to develop possible solutions to a given problem. Second, learners must be responsible for their own learning, such as self-direction and self-regulating learning, while the teacher is a facilitator and guide for learning. Third, the problems used in PBL are often related to real situations in which there is no single correct answer and more than one solution. Finally, learning is always integrated from many fields and many different sources, making team cooperation essential.

1.3 The Implementation of PBL

Depending on the characteristics of the subjects and universities, many problem-based researchers proposed an appropriate PBL organization process and applied that process in teaching.

In the PBL learning guide at the University of New Jersey, Hmelo-Silver (2004) raised the issue of what and how learner study through the learning cycle, The process is about students that work in small groups and learn what they need to know to solve a problem. The teacher acts as a facilitator for students to learn. In this process, also known as problem-based instruction, students are presented with a problem scenario. They construct and solve problems by identifying events relevant to the scenario. This fact-finding step enables students to describe the problem clearly. As students understand the problem better, they create hypotheses about possible solutions. An important part of this process is identifying problem-related knowledge gaps. These knowledge gaps become learning problems that students will investigate during self-directed learning. With self-directed learning, students apply their new knowledge and evaluate their hypotheses in light of what they have learned. At the synthesis of each problem, students reflect on the abstract knowledge gained. Teachers help students acquire the cognitive skills needed for problem solving and cooperation. Because students experience self-directed learning, manage their learning goals and strategies to solve problems including the unstructured problems of subject-based learning (problems that have no right solution), they also acquire the skills they need for future jobs.

1.4 PBL in EFL Education

To begin with, the integration of PBL in Algerian universities, a study was conducted in Mohamed Boudiaf University (Msila) for EFL students, the study adopted a mixed method approach despite the obstacles that some EFL students and teachers face while applying PBL, the majority of participants expressed satisfaction with the integration of PBL in English classes... it plays a significant role in improving students' critical thinking, collaboration, and teamwork skills.

As an experiential learning strategy, PBL has long been acknowledged as a useful

method to promote the development of a variety of skills in several educational fields. Savory (2006) maintained that PBL is effective in developing several skills, including problem-solving, communication, critical thinking, argumentation, collaboration. These skills subordinate directly to the language skills students have to develop in any second/foreign language program (cited in Humalda & Zwaal, 2016, p. 208). Correspondingly, Hearn and Hopper (2008) contended that PBL affords an outlook for authentic English as second language education, and can boost English language use while endorsing skills like critical thinking, interactive communication, and selfreflection. Particularly, English language learners may profit from PBL education as it supports them in improving cultural constructs along with language skills such as reading, writing, listening, and speaking. This section reviews empirical studies of PBL implementation in the EFL context.

According to Mathews-Aydinli (2007), PBL, in foreign language education, aligns with the teaching approaches in which the learners learn the target language by using it, instead of being presented with and then performing scheduled language structures. Approaches centered on parallel principles include task-based learning, content-based learning, and project-based learning. Nonetheless, PBL is different from other teaching approaches because it focuses on learning through solving real problems that do not have exact solutions.

In his research on the power of PBL in EFL classrooms, Patrick stated, “PBL is a curriculum model that emphasizes the use of task-based problems to engage students in active and multidisciplinary learning” (2009, p. 41). He found that EFL students were largely stimulated and involved in the PBL assignments. They analyzed the raised problems and found solutions. They also directed their learning through planning, monitoring, problem-solving, and finding solutions to the problem. Similarly, Othman and Shah (2013) explained that PBL engaged EFL students to find possible solutions to the raised problems. This engagement would improve their content knowledge, collaborative skills, and communicative skills in the

language. In the same line of thought, Gomez (2016) investigated PBL to develop oral communication in the EFL classroom. In his research, he considered PBL as an innovative and compelling approach that can enhance oral communication in the EFL classroom. In another study, Munoz Campos (2017) implemented PBL in one of the curricular modules of the EFL pedagogy program at a regional university in Chile. The results indicated that the participants perceived PBL positively as they reported that PBL contributes to the development of their cognitive capacities, critical and knowledge integration capacity, self-directed learning, and social skills. In a more recent study, Chiou (2019) incorporated PBL in the EFL context to develop English low achievers' grammar competence concerning relative clauses and their motivation in EFL learning. The study results experimentally demonstrated that the PBL approach had a positive impact on the performance of the participants. The findings also denote that the participants emphasize, when proposing solutions to the given scenario, more on employment than on studies, which may reflect their real-life experiences.

Despite the existence of several studies, the implementation of PBL remains limited in the Algerian EFL context. In contrast, it is more commonly adopted in medical education, where it was initially designed and has been widely applied in teaching medical students since it encourages improving clinical reasoning and self-directed learning.

1.5 Types of Problems in PBL

Problem-Based Learning problems are most fundamentally classified into two main categories based on their level of structure and clarity, teachers who use PBL as a teaching method are expected to choose from the two types of problems: well-structured or ill-structured problems. According to (Shin et al., 2003), prompts and students' cognitive engagement are the major factors that determine the type of problem. **Well-structured problems** are characterized by clearly defined parameters, a precise problem statement, and often a single correct or optimal

solution, they are better for beginners who still need guidance from the teacher and cannot handle very complex thinking tasks yet, Barrows (1986). Many detailed prompts are provided by the teacher; thus, students are limited in terms of cognitive engagement. They will not use many of their cognitive skills to solve the given problem since it was well-structured and elaborate to begin with. This may result in having a limited number of solutions.

In contrast, **ill-structured problems** represent the core of authentic Problem-Based Learning, as they are complex, ambiguous, often lacking a single correct answer and requiring learners to engage in inquiry, collaboration, and critical evaluation of multiple possible solutions, Hmelo-Silver (2004), the teachers give more freedom to their students by providing less detailed prompts. Giving less detailed prompts or not giving prompts at all calls for students' high cognitive engagement in finding a possible solution (Rotgans& Schmidt, 2011)

Moreover, ill-structured problems place greater responsibility on learners to identify what they need to learn and justify their solutions, which aligns with the constructivist foundations of PBL and its emphasis on learner autonomy, Savery (2006).

The distinction between well-structured and ill-structured problems highlights a progression of complexity in PBL design, where instructional support and learner independence are adjusted according to educational context and learner readiness. It is highly recommended that teachers know their students' prior knowledge, level and cognitive skills so that they select the most suitable problems for them (Duch, 2001).

1.6 Teacher's role from Lecturer to Facilitator

Facilitation in PBL remains a contested has not been fully agreed-upon and a debatable subject over which researchers do not share one common definition. For instance, Savin-Baden (2003) and Ansarian and Teoh (2018) define facilitation as the process of creating learning opportunities for students instead of exposing facts. According to Barrows and Tamblyn (1980),

transmitting knowledge to students has no place in PBL classes. In another definition, Knowles (1975) says that teachers' emphasis has to be on the situations students are getting through during the learning process rather than on what the teachers are doing. He also argues that teachers 'authoritative practices should be eradicated, allowing them to show their uncertainties, weaknesses, and knowledge when they act as co-learners. In spite of these definitions, facilitation still appears to be a rather vague construct.

In traditional teaching methods, teachers typically operate under teacher-centered methods assumptions, where they are seen as the primary source of knowledge and authority in the classroom. Learners are, therefore, expected to show passiveness by merely assimilating the information presented. Additionally, the lesson plans and the set objectives are among the teachers' tasks (Lathan, n.d, Rogers & Frieberg, 1994).

Savin-Baden (2003) further describes effective facilitation as follows:

Effective facilitation involves more than asking open-ended questions, displaying an encouraging attitude, or creating a comfortable learning environment. At its core, it requires ensuring that group members collaborate effectively and that their learning needs are addressed. Beyond this, facilitators play a key role in fostering group dynamics, challenging learners, balancing task completion with group processes, and guiding students from initial critical thinking towards deeper critical reflection and evaluation. Their awareness of student perspectives and the way power is distributed within the group are essential aspects of the facilitation process. Moreover, ethical considerations and honesty within PBL teams also shape effective facilitation practices (Savin-Baden, 2003, p. 60).

According to Savin-Baden (2003), a number of key elements are required for teachers to shift from the role of lecturer to facilitator in PBL contexts. These include the concepts of the displaced academic, the repositioned academic, and the commodified academic. The idea

of the repositioned academic is further divided into three subcategories: maintaining control, sharing control, and relinquishing control. Savin-Baden (2003) explains that in PBL, teachers can no longer stay within the limits of just one subject area. Because PBL problems are often complex and interdisciplinary, tutors are expected to deal with knowledge from different fields, not only their own specialization. This situation is what she calls the displaced academic.

However, this shift is not easy. Based on her four-year study, Savin-Baden found that many teachers feel uncomfortable when they have to engage with subjects they do not fully master. Since they are used to being experts in their own discipline, moving beyond it creates feelings of confusion, uncertainty, and even insecurity. In other words, they are pushed outside their comfort zone, which makes the transition from lecturer to facilitator more challenging.

According to Savin-Baden (2003), the concept of the repositioned academic refers to how both teachers and students change their roles in PBL. In this approach, teachers act as facilitators, while students become active participants in their own learning. She identifies three forms of this repositioning. First, maintaining control, where the tutor becomes more directive if students struggle, temporarily acting as a source of knowledge. Second, offering control, where the tutor encourages students to take responsibility for their own learning and become more independent. Third, relinquishing control, where the tutor steps back to allow students to collaborate, rely on their prior knowledge, and develop autonomy.

Savin-Baden (2003) also introduces the idea of the dislocated academic, which describes the difficulties teachers face when moving from lecturer to facilitator. Many tutors struggle to give up control and feel uncomfortable or uncertain, especially when dealing with subjects outside their expertise. This can lead to a sense of reduced authority and a lack of confidence, as well as difficulty trusting students to manage their own learning.

Finally, the concept of the commodified academic refers to tutors who focus mainly on

achieving practical outcomes rather than the learning process itself. In this case, less attention is given to collaboration, critical thinking, and knowledge construction, and more emphasis is placed on acquiring practical, real-world knowledge. As a result, the tutor's role becomes limited to mainly providing this type of knowledge.

From a critical perspective, the study proposed by Savin-Baden (2003) highlights both the potential and the challenges of implementing PBL in educational contexts. While the shift toward facilitation enhances learner autonomy, higher-order thinking and deeper engagement, it also places noticeable demands on teachers in terms of adapting to interdisciplinary content and relinquishing traditional authority.

Therefore, the effectiveness of this transition largely depends on sufficient teacher preparation and a willingness to embrace more flexible and student-centered pedagogical roles.

1.7 Theoretical Foundations of PBL

The pioneers of PBL did not deliberate any learning theory while formulating this pedagogical approach. However, cognitive constructivism and social constructivism are noticeably the basics that support the theoretical foundations of PBL in terms of the cognitive and social aspects of students' learning.

The Cognitive Constructivist Fundamentals of PBL

Different authors tried to identify the principles of PBL in different ways. However, some views seem to emphasize the cognitive constructivist nature of PBL. Based on these definitions, instructors design problems that would allow for experiential learning. Required to be self-directed, the task of students in such learning environments is to analyze the problem in small groups based on prior knowledge. The discussion of the problem aims at constructing concepts to explain the underlying principles or mechanisms of the problem at hand. In this

view, Ansarian and Lin argued, “PBL seeks answers as they are constructed and formed in the minds of the learners” (2018, p. 10). Besides, the problem is supposed to create an internal desire for the students to discover more about the topic, initiating increased concentration, focused attention, and willingness to learn (Hidi & Renninger, 2006, as cited in Moallem et al., 2019). Tan (2004) disputed that engagement with the problem inquiry process creates the cognitive conflict that prompts learning. In this process, students construct knowledge through collaborative processes of social interaction and evaluation of the practicability of one’s perspective. Therefore, metacognitive strategies and self-regulation are fundamental parts of PBL. The role of teachers in PBL, according to Ansarian and Lin (2018), is to create learning opportunities for self-directed learning, encourage higher-order thinking, and arrange the teaching strategy of this approach aside from that of traditional learning. This type of learning is consistent with cognitive constructivist learning and the concept of globalization in the domain of education.

Social Constructivist foundations of PBL

Dissimilar to the cognitive constructivists who perceive knowledge construction as an individual cognitive activity, the social constructivists contend that human cognitive development stems from interaction with the social environment. Indeed, the significance of the sociocultural context to individuals’ learning is widely recognized today by educational researchers and educators. The social interactional nature of learning has informed the conception of PBL. In this manner, O’Grady et al. stated that PBL is often associated with the philosophy of social constructivism, whereby students are able to develop a strong knowledge base through social interactions (2012, p. 170).

Learning, in PBL, is centered on problem-solving instruction based on the teachers’ guidance or tutoring. The authenticity of the set problems integrates the students into the

community of practice of their profession by providing the sociocultural and professional contexts for students to construct knowledge. Solving problems in an educational arranged environment is the first step for students to take part in social activities. This enculturation process cannot be achieved through solving authentic problems solely but through scaffolding. Thus, the teachers' guidance is vital. In this sense, integrating students into the sociocultural professional context represents a hallmark of PBL that meets the essence of sociocultural constructivism.

According to Moallem et al. (2019), group work is another concept of PBL that embodies sociocultural constructivist principles. PBL generally entails the teacher's presentation of an authentic problem to be resolved in small working groups with students of different levels of knowledge. In these groups, students collaboratively self-direct their learning by interacting with peers and the tutor to co-construct their knowledge of the subject. Moreover, PBL small working groups place students in a situation to discover and interpret the studied topic based on prior knowledge and experience. The social exchange and practice processes through sharing, questioning, and negotiating help students construct meaning through reciprocal social interaction.

1.8 Benefits of PBL

Problem-Based Learning provides an appealing framework for teaching and learning, not only within the context of EFL but also across other disciplines. It promotes a healthy environment for active learning with its diverse sets of activities, enabling students to engage in investigative inquiry throughout the learning process. Adopting PBL at the university level, especially with master's degree students, is significantly different from implementing it at other educational levels since master's degree learners are generally expected to demonstrate a more advanced capacity for critical thinking.

PBL has been recognized, widely for its numerous pedagogical advantages and benefits. Many researchers have emphasized its effectiveness in enhancing essential learning and higher-order thinking skills.

For instance, Barrows (1986, 1996) asserts that PBL enhances students' ability to think critically and solve problems, particularly by developing learner autonomy. David H. Jonassen (1997) highlighted that students learn best when engaged in meaningful, problem-solving activities that enhance active engagement and deeper understanding. Also, Cindy E. Hmelo-Silver (2004) notes that PBL supports the development of effective problem-solving abilities, flexible knowledge, collaborative skills, and learner autonomy as previously mentioned.

Finally, Richard M. Felder (2006) argues that learners in PBL environments are more likely to develop stronger problem-solving skills and competencies and a deeper level of understanding.

1.9 Limitations and Challenges of PBL in EFL

The implementation of Problem-Based Learning in EFL education is full of challenges for both teachers and learners. Rogers (2014) summarized the encountered challenges in terms of the shift in roles, lack of training and experience, and unprepared classes. This section reviews some of these challenges, as it would not be possible to present the effectiveness of PBL without mentioning its possible related problems.

Implementing PBL in foreign language education triggered challenges faced by teachers, challenges met by learners, in addition to other challenges relating to the use of PBL teaching materials. As far as teachers are concerned, the lack of instructional resources and training are the main reasons for the challenges they face while teaching through PBL. Mathews-Aydinli (2007) contended that the PBL curriculum designers should provide teachers with accurate resources and adequate training. PBL approach is different from traditional

approaches. Therefore, teachers should be trained to design a problem scenario, which prompts the use of cognitive and metacognitive skills. The absence of appropriate teaching resources and training leads to the misapplication of the PBL approach (Ansarian & Lin, 2018).

Additionally, after gathering resources for this study and seeking guidance from the professors of the English Department at Abbes Laghrour University Khenchela, some of them clearly stated that nowadays students' level of critical thinking and engagement in higher-order thinking skills is declining due to the use of AI, they tend to rely on tools such as ChatGPT rather than actually improve their capacities and actively engage in the classroom. For this reason, some teachers prefer not to implement PBL, since they believe students are less likely to invest effort or independently search for answers anyways.

As far as students are concerned, PBL obliges them to take an active role in the learning process. This role may overwhelm the students who used to learn traditionally. Dochy et al. (2005) stated that the PBL environment could be a noteworthy challenge to students who expect learning as the transmission of knowledge. While some studies revealed that students welcomed their active roles in PBL, other studies demonstrated that the implementation of PBL might cause tension, demotivation, confusion, especially in relation to English language knowledge, the requirement to make presentations of final products in front of the class caused anxiety for students because they were not confident in communicating in a second or foreign language (Jin & Bridges, 2016; Papinczak, 2010). For instance, Barron et al. (2008) found that tutor's extensive control of the learning process instigated anxiety in PBL working groups. Students may avoid articulating uncertain solutions in the tutor's presence. In another study, Lekalakala-Mokgele (2010) noted that students have problems adjusting to the novel learning situation where they are predicted to cope with learning resources and self-direct their learning. Furthermore, they are required to manipulate their membership in the PBL group and define their role within the group.

According to Bayard (1994), in PBL, learners also had to spend more time outside the classroom preparing their problem-based lessons and gathering additional learning resources. In addition, student groups needed to spend time brainstorming and assigning tasks for the detailed script when solving problems. After presenting the results, students also needed to invest time in preparing the reflection for the group work. However, the author believed that although the many stages of PBL implementation could take a lot of time, the method was valuable for gradually developing students' problem-solving and self-directed learning skills. In line with the above study, Bligh (1995) also emphasized the time-consuming problem in different stages of implementing PBL, such as preparing for studying the problem, implementing the product, as well as discussing how to write reflections after group work.

Rather than the challenges to teachers and students, the appropriateness of instructional materials constitutes another challenge to the implementation of PBL (Ansarian & Lin, 2018). Henceforth, preparing classes to adopt PBL requires the design of appropriate instructional materials. The central objective of PBL is to cultivate autonomous learners who can solve real-life problems, thus instructional materials that are based on problem scenarios are essential to PBL implementation. Generally, EFL teaching in higher education is lecture-based. Such teaching and learning situations provide little opportunity for EFL learners to experience autonomous learning, collaboration, problem-solving, critical thinking, and self-assessment. Therefore, implementing PBL entails the teachers' adjustment of the instructional materials to benefit from claimed benefits of PBL.

Overall, PBL is an effective learning strategy in the context of EFL education in general. Nevertheless, PBL implementation is not free of challenges and tensions. Although there are studies on the use of PBL in the EFL context, teachers' readiness, learners' perceptions in particular and most importantly PBL's impact on critical thinking still need investigation. Most of the investigations focused on PBL in EFL education in general. Moreover, it should be

pointed out that studies on PBL in the context of EFL teaching in Algerian higher education are still limited.

Conclusion

This chapter shed light on the significance of PBL in education and how it should be recognized, taught, and transferred, its application in language teaching and learning. It also discussed the implementation of PBL and its role in EFL education. Additionally, the chapter explored the different types of problems used in PBL, its theoretical foundations, and its major benefits in enhancing students' learning experience. Finally, it presented the main limitations and challenges of PBL in EFL classrooms. The next chapter will focus on critical thinking and its characteristics.

CHAPTER TWO

Critical Thinking

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Introduction

Human thought is an essential cognitive process that allows the act or ability to consider the difference between what could be done and what should be done. However, in many instances, thinking is connected with solving problems and making decisions. Among the three modes of thinking, critical thinking is one of those skills that refines and enhances the process or quality of thinking. The concept of critical thinking is multidimensional as many theorists have developed rich definitions. In general, CT is seen as a self-regulatory, self-disciplinary, and self-reflective judgment, in which the thinker interprets, analyzes, evaluates, synthesizes, and makes inferences from evident contexts based on reasoning. The ability to think critically has become a required and vital ingredient to succeed in the current modern world. Thus, individuals with high cognitive skills can achieve positive change on both academic and career levels. The present chapter introduces a basic review of critical thinking principles. Hence, it starts with a look at the historical context of CT, and followed by the most eminent definitions of the concept. Furthermore, this chapter attempts to identify: a Historical background of Critical thinking, Critical Thinking Conceptualization, Cognitive Foundations of CT (metacognition, creative thinking and intelligence), Characteristics of Critical Thinkers, Critical thinking and problem-based learning and Critical Thinking in Algerian EFL Education.

2.1 Historical Background

The evolution of critical thinking has undergone through numerous historical stages that evidently contributed to its expansion in the 21st century. Basically, the concept of critical thinking was initially introduced by the Greek philosopher Socrates 2.500 years ago. Socrates established a series of precise and targeted questions to probe profoundly students' thoughts and beliefs. Socrates era was supported by Plato critical thinking, Aristotle, and other skeptics philosophers who asserted that humans should train their minds to perceive what is beyond the

surface and not adhering to deceptive appearances. Socrates questioning is presently acknowledged as one of the outstanding strategies in teaching critical thinking that enables learners to seek evidence, examine and reflect on ideas logically conducive to regulate and control their assumptions and thoughts before approving them as a worthy belief. (Paul et al., 1997).

In the early Middle Ages, Thomas Aquinas stressed the importance of reasoning to be systematically scrutinized and fostered. According to Thomas critical thinkers are not necessary those who refute common beliefs, unless such beliefs lack reasonable grounds. Furthermore, during the Renaissance period (15th and 16th centuries.) European scholars as Erasmus, Colet, and Moore highlighted the fact that all major life disciplines should be probed, analyzed, as well as criticized. In France, Descartes affirmed the need of structured disciplines to think clearly and precisely, as he developed a strategy of basic thought based on the principle of efficient doubt. In other words, every portion of thought ought to be addressed, questioned, and tested Consecutively, critical thinking (18th and 19th centuries.) was even extended to economics, human social life, and language spheres, which ultimately produced Adam Smith's Wealth of Nations, Kant's Critique of Pure Reason, in addition to linguistics fields.

With the beginning of the twentieth century, the nature and the power of critical thinking have increasingly emerged. In relation, John Dewey the American philosopher and psychologist who is regarded as the father of CT described in his book "How we think" (1933) the necessity to learn through reflection, and suggested that reflective thinking is a part of the process of critical thinking, as he used the terms interchangeably. Along the second half of the twentieth century intensive works by several theorists (e.g., Piaget, 1952; Bloom et al., 1956; Ennis, 1962; Scriven, 1976; Brookfield, 1987; Facione, 1990; Paul, 1992...etc.) have made the term CT more comprehensive and contributed to level up its value and evolution up to the present 21st century.

2.2 Critical Thinking Conceptualization

Critical thinking is a complex and multifaceted concept that has been continuously developed and refined over time, as many scholars and authors interpreted the term distinctively in both fields of philosophy and psychology. In accordance, philosophers (e.g., Dewey, 1933; Scriven, 1976; Siegel, 1980; Siegel, 1980; Paul & Elder, 2001; Ennis, 2011; Facione, 2011) emphasize on the attitudes, nature and quality of critical thinking, the process of how to reach rational and reasonable beliefs.

Socrates emphasized the importance of challenging students' knowledge in order to evaluate the truth and credibility of their ideas. He also contended that students should endeavor to make the unknown known. Besides, Ennis (2011) believes that CT is "reasonable and reflective thinking focused on deciding what to believe or do" (p.10). On the other hand, Paul and Elder (2001) agree on the fact that CT "is the art of analyzing and evaluating thinking with a view to improving it" (p. 2). In addition to the mentioned definitions above, Facione (2011) sees critical thinking as the ability to make purposive, thoughtful, reflective, and self-regulatory judgments based on reasoned consideration of evidence, methods, and standards. More prominently, Siegel (1980) considers CT as the process that embodies rationality and principled thinking to guide and control judgments in accord with objectivity, non-arbitrary, and appropriate assessment. Psychologists in contrast (e.g., Glaser, 1941; Strenberg, 1987; Halonen, 1995; Halpern, 2014...etc.) put emphasis on cognitive skills, testing humans' cognitive schemata in various fields. (Siahi Atabaki et al., 2015). According to Halpern (2014) critical thinking can be defined as "the use of those cognitive skills or strategies that increase the probability of a desirable outcome" (p.8). She also points out that thinking critically is beyond reflecting only on own thoughts, solving problems, and making judgments, but rather critical thinking "uses evidence and reasons and strives to overcome individual biases" (p. 8). On the other hand, Glaser (1941) defines CT as the ability to assemble and interpret data, to use

language with accuracy and clarity, to recognize problems and draw reasonable judgments or conclusions.

In brief, critical thinking is a self-directed and self-regulated process in which individuals engage in higher-order cognitive skills such as interpreting, analyzing, evaluating, and drawing inferences. It also involves monitoring one's reasoning, resolving inconsistencies, and making well-founded judgments about any given issue or context (Facione, 2011).

2.3 Cognitive Foundations of CT

2.3.1 Metacognition

Metacognition generally refers to the ability to be aware of and reflect on one's own thinking processes. It involves monitoring how one learns, understands, and solves problems, as well as regulating these processes in order to improve learning outcomes and decision-making, or what is commonly referred to as "thinking about thinking." It is approved that CT and metacognition go hand in hand. In fact, engaging in CT requires individuals to use a higher-level of metacognitive ability or certain cognitive skills and strategies (Choy & Cheah, 2009). One of the major problems in CT is the way knowledge is transferred. In other words, how to retain what we already know and use it in different real-life situations that we have never been familiar with, as well as how to ensure accuracy and make appropriate decisions. Metacognition comes into play as the governor function that directs how to plan and assess the prior knowledge, and how to monitor the thinking development (Halpern, 2014, p. 27). Several studies emphasize the relationship between metacognition and critical thinking. According to Schoen (1983), critical thinking skills are more likely to be developed and facilitated through metacognition. Further, Mango (2010) found that the factors of metacognition such as planning, monitoring, debugging, information management and evaluation are significantly related to the factors of CT. Ultimately, students who possess various metacognitive skills are more involved

in critical thinking, which signifies that metacognition affects CT in one way or another.

2.3.2 Creative Thinking:

It is widely acknowledged that creative thinking and critical thinking are distinct forms of thinking, as the former tends to generate original, fresh, and unique ideas to solve problems. It is regarded as a divergent and imaginative process. Moreover, creative thinking is about abandoning the old ideas and creating new ones, as having excessive knowledge within a discipline will set bounds for creativity (De Bono, 1983, p. 162). Whereby, the latter is more convergent, evaluative, and judgmental in its nature. It is based on a reasoned and logical manner to reflect on issues in a sequential and structured way. Despite, the difference in their inner meaning, some authors consider creative thinking and critical thinking as complementary segments of thinking. In this regard, Scriven (1976) stated that possessing a great deal of creative and imaginative abilities without the combination of critical thinking skills, it is completely useless. That means you need to be critical in order to, be capable of imagining and producing plausible new theories or hypotheses. Accordingly, the application of logical criticism to a particular problem will lead to the use of creative thinking to construct a solution. This indicates that creativity is somehow grounded on the back-up of CT (Padget, 2013; pp. 5-18). Therefore, the complementarity view suggests that both creative and critical thinking are embedded in each other and inseparable processes, even though they both function distinctively.

2.3.3 Intelligence:

One of the most controversial questions is whether thinking critically helps individuals to be more intelligent. Or whether intelligence helps people to be critical thinkers? The answer to these questions is determined by the nature and the definition of intelligence. Similarly to CT, there is no standard definition of the notion of intelligence. Psychologists debate that intelligence is a higher intellectual cognitive ability that can be inherited by genetics or

increased by environmental stimulation. According to Gottfredson (1997), intelligence is the ability “to reason, plan, solve problems, think abstractly, comprehend ideas, learn quickly, and learn from experience” (p. 13). Intelligence, for Gardner (1993), is an intellectual competence that enables individuals to solve genuine problems or difficulties they may experience. In other terms, intelligence should incorporate problem-solving skills and the potential to create or find problems. The definitions aforementioned are consistent with CT units. In this context, Halpern (2014, pp. 30-34), explained that intelligence thinking is linked to critical thinking and reasoning, only if intelligence is measured on how well a person thinks in everyday situation. She clarified that intelligence standardized tests do not test for rational thinking. Thus, thinking critically will not make an individual smarter, if intelligence is assessed by standardized IQ measurements. Although, learning to be a better thinker and practicing the acquired thinking skills across various contexts can actually help individuals to be more intelligent. Halpern concluded that people differ in thinking and that not everyone can be a genius, but they can learn to reason and think intelligently. In summary, the relationship between intelligence and CT depends upon how the former is interpreted and examined.

2.4 Characteristics of Critical Thinkers

It is important to note that critical thinkers are identified not only through particular cognitive abilities but also through a range of intellectual virtues or habits of mind, often called critical thinking dispositions. Many theorists (e.g., Dewey, 1933; Ennis, 1987; Siegel, 2009; Facione et al., 1994; Halpern, 1999; Paul & Elder, 2014..., Etc.) have urged that it is essential to possess some characterological components that can help students or anyone to understand the way we think and increase the chances of thinking better or reaching valid and logical solution to an argument. In light of this, Halpern (1999), stipulates that critical thinking skills are not enough for college students, if they are not disposed to use them. As a result, CT instruction must tackle both the dispositions and the skills. Whereby, Facione et al. (2001)

considered CT dispositions as the persistent internal motivation factor to make decisions and solve problems through the use of thinking. Facione, Noreen Facione and Sanchez (1994), proposed several attributes of dispositions which included, inquisitiveness, analyticity, open mindedness, systematicity, self-confidence, truth-seeking, and maturity (see Figure 1.1). Paul and Elder (2014) on their part submitted unique CT traits which covered intellectual integrity, intellectual humility, intellectual autonomy, confidence in reason, intellectual empathy, intellectual perseverance, intellectual courage, and fair-mindedness. The following traits are among the most common qualities that can encourage and motivate students to think critically.

Therefore, Critical thinkers are defined not only by their cognitive skills but also by intellectual dispositions such as inquisitiveness, open-mindedness, analyticity, and truth-seeking. These habits of mind, including traits like intellectual humility, perseverance, and fair-mindedness, reflect an internal motivation to apply thinking effectively, solve problems logically, and reach well-justified conclusions.

2.5 Critical Thinking in Algerian EFL Education

In Algerian EFL classrooms, the development of critical thinking is gradually gaining attention, although its implementation remains somehow limited due to traditional teaching practices and approaches that often prioritize memorization. In many cases, students are still expected to reproduce information rather than evaluate, express, or analyze independent judgments in English. However, some efforts are being made to incorporate more learner-centered approaches that reinforce critical engagement. For instance, in universities such as:

-University of Algiers 2

-University of Oran 2 Mohamed Ben Ahmed

EFL tutors may use classroom debates, where students are asked to defend opinions on topics like technology in education or cultural identity, requiring them to justify their arguments with logical reasoning. Similarly, tasks such as text analysis and critical reading activities that encourage learners to identify bias, infer meaning, and evaluate the author's viewpoint rather than simply understanding the surface meaning.

In addition, some teachers implement group discussions and problem-based learning activities in which students collaboratively solve real-life issues, such as environmental problems or communication challenges, using English as the medium of discussion. These activities promote interpretation, reflection, and evaluation of ideas.

Despite these examples, it is important to note that such practices are not yet widespread across Algerian EFL contexts, and critical thinking instruction remains uneven, largely depending on individual teachers' awareness, training, and willingness to adopt innovative pedagogies.

2.6 Taxonomies of Critical Thinking Skills

Although Critical thinking is widely recognized as a fundamental educational objective, it remains a complex and abstract construct that requires systematic organization for an effective application in educational contexts.

For this reason, scholars have developed multiple taxonomies that aim to classify and test its cognitive processes. These frameworks transform critical thinking from a theoretical concept into a structured set of skills that can be taught, observed, and assessed. Even though there is a quite good number of taxonomies in the context of critical thinking, However, In the study, the focus is placed on Bloom's revised taxonomy.

While multiple frameworks exist, Bloom's taxonomy, especially in its revised form by Anderson and Krathwohl (2001), is the most widely adopted and used for structuring cognitive development in educational context. By organizing learning objectives into a ranging from remembering to creating this taxonomy provides a clear pathway for fostering and enhancing critical thinking, making it especially relevant for the aims of this dissertation.

Bloom's revised taxonomy, developed by Anderson and Krathwohl (2001), is a widely recognized method for classifying cognitive processes in learning contexts. It reorganizes Bloom's original taxonomy by shifting from static categories to active verbs, creating a six-level hierarchy (remembering, understanding, applying, analyzing, evaluating, and creating) (explained in figure 01) (Anderson & Krathwohl, 2001). Each level represents a step toward deeper cognitive engagement, with critical thinking embedded in the upper levels.

For instance, in EFL university courses, the "analyzing " stage might involve students breaking down a complex academic text into its key arguments, while "evaluating" may see them judge the reliability of different sources. In a practical example, an EFL student tasked with writing a research essay might first remember key concepts, then understand the arguments, apply them in an analysis, evaluate the perspectives, and finally create a well-structured, original argument. Also, Bloom's revised taxonomy not only provides a clear roadmap for cognitive growth but also offers practical tools for structuring critical thinking tasks in diverse educational settings.

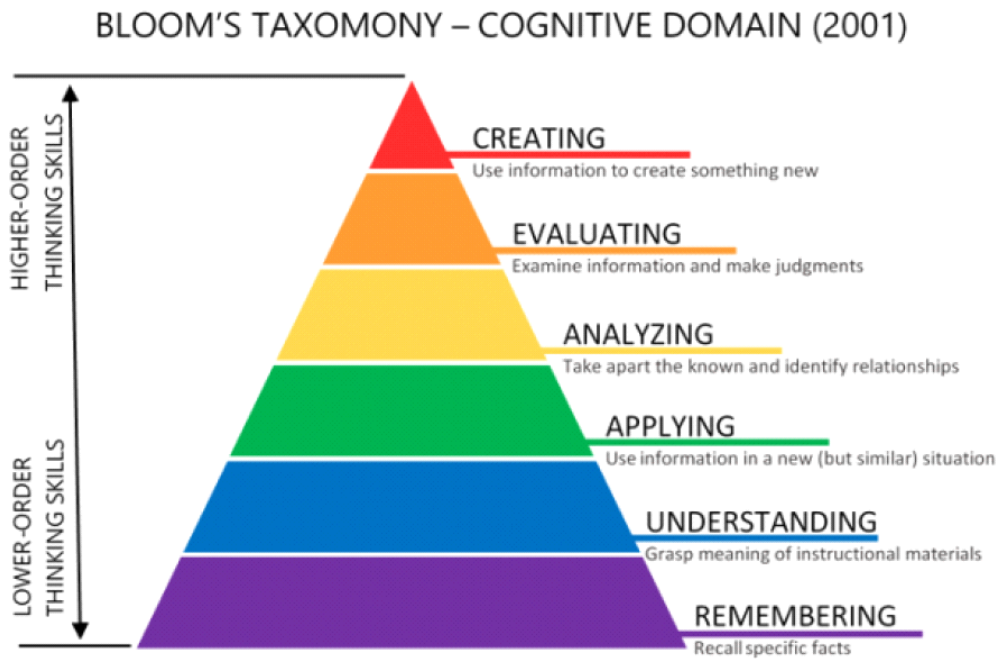


Figure 01: Blooms' taxonomy

Critical thinking entails a taxonomy of higher-order skills, which requires the thinker to unleash those lower-order skills such as memorization or comprehension. In general terms, it has no specific skills but it depends more on those skills that can be defined and practiced spontaneously over various contexts of knowledge (Halpern, 2001). Nonetheless, many scholars (e.g., Fisher & Scriven, 1997; Cottrell, 2005; Giancarlo & Facione, 2001; Halpern, 2014) have listed some commonalities of skills. For example, Giancarlo and Facione (2001) advocate analysis, interpretation, inference, explanation, evaluation, and self-regulation as a set of skills that help critical thinkers to make up a judgment and monitor or enhance the quality of that judgment. Thus, such skills can also be applied to one another as an individual can explain one's analysis or evaluate one's inference.

2.7 The Transferability of Critical Thinking Skills

One of the sustained debates in educational research is whether critical thinking skills instructions should be integrated within a specific subject or taught separately. The issue has

not settled yet, and experts (e.g., Glaser, 1984, Kurse & Presseisen, 1987; Ennis, 1989, McPeck, 1990) are still arguing whether critical thinking should be infused separately (general approach), be learned through immersion, be infused within subject matter, or be combined with generic approach with infusion or immersion. These four CT approaches are classified as follows:

1- a general approach focusing on teaching critical thinking and the dispositions separately from the subject matter knowledge through exposing students to critical thinking in non-school context.

2- an infusion instruction providing a deep explicit subject instruction in which students have the opportunity to think critically about the subject and learn about critical thinking principles explicitly.

3- an immersion approach conducted similarly to the infused instruction in which students are encouraged to get immersed deeply in the content, but without explicit indication to critical thinking abilities and dispositions.

4- a mixed approach method combining both general approach with either infusion or immersion instructions, under a separate course that involves general critical thinking principles and subject specific critical thinking instruction (Ennis, 1989; pp. 4-5). Albeit, there is a lack of consensus regarding critical thinking approaches. Ennis (1989) suggests that critical thinking should be taught within all domains using a mixed approach. On the whole, each version of these approaches has its own arguments for and against but most importantly the selection should be relevant to teaching context and critical thinking constituents and principles.

CT skills translate to both academic and professional success. However, many may face difficulties or are unaware of how to use the skills appropriately (Cottrell, 2005). In the light of this presumption, Halpern (2014) indicates that it is essential to know how to use critical thinking skills and how to recognize which skills are needed in different situations. She further

adds that the more students direct their learning and focus on the structural aspects of a problem, the more critical thinking skills are learned in a way that can be easily recalled in novel situations.

Indeed, critical thinking skills are best recognized and transferred when they are learned explicitly, spontaneously, and consciously within various contexts (Marin & Halpern, 2011). The development of critical thinking skills demands allocation of time and consistent practice. Succinctly, students can learn to use critical thinking skills naturally when exposed to specific instruction that is particularly designed to encourage the implementation of the skills explicitly or implicitly in different contexts.

2.8 Critical thinking and Problem-Based Learning

The relationship between problem-based learning and critical thinking is strongly interconnected, since PBL is considered one of the most effective learner-centered approaches that promotes higher-order thinking skills.

In traditional teaching methods, students often rely mainly on memorization, repetition, and teacher explanation to obtain knowledge. However, PBL shifts the focus from teacher-centered to student-centered, where learners are required to form groups, investigate problems, analyze information, evaluate evidence, discuss different opinions, and propose solutions. Through this process, students become more engaged in reasoning, decision-making and learner autonomy which are essential components of critical thinking. According to Howard S. Barrows (1986), PBL develops learners' problem-solving skills and independent learning abilities by placing students as the main source of the educational process. Peter A. Facione (2011) defines critical thinking as a self-regulatory process involving interpretation, analysis, evaluation, inference, and explanation. These cognitive processes are continuously practiced during PBL activities, as learners are expected to identify problems, gather information, justify their

opinions, and assess the effectiveness of possible solutions. Therefore, PBL naturally creates the perfect conditions that encourage the development of critical thinking skills and learner autonomy. Cindy E. Hmelo-Silver (2004) explains that PBL promotes self-directed learning, collaborative work, reflective thinking, and flexible knowledge construction. In PBL classrooms, learners work collaboratively in groups to solve problems, which allows them to exchange ideas, challenge assumptions, and critically evaluate arguments. This collaborative interaction helps students develop deeper understanding instead of surface-level learning. In addition, PBL encourages learners to become autonomous and responsible for their own learning process as it was mentioned earlier, which further strengthens metacognitive awareness and critical reflection.

Within EFL education, the relationship between PBL and critical thinking becomes even more important because students are not only learning the language itself but also learning how to use language meaningfully in communicative and analytical contexts. Through discussions, debates, presentations, and problem-solving tasks, learners practice expressing opinions, defending arguments, and interpreting information in English. As a result, PBL contributes simultaneously to language proficiency, communication skills, collaboration, and critical thinking development. According to Savery (2006), PBL supports authentic learning experiences that engage students in meaningful inquiry and active knowledge construction rather than passive reception of information. the constructivist foundations of PBL reinforce its relationship with critical thinking. Cognitive constructivist theories emphasize that learners construct knowledge actively through experience and interaction with problems. Social constructivist perspectives also highlight the importance of collaboration and dialogue in developing reasoning abilities. PBL creates an educational environment where learners are encouraged to think independently, question information critically, and develop analytical reasoning skills through interaction and inquiry.

Overall, the relationship between PBL and critical thinking is complementary and mutually reinforcing. PBL serves as an effective pedagogical approach that fosters critical thinking by engaging learners in active inquiry, collaborative problem-solving and independent learning. Therefore, integrating PBL into EFL classrooms can significantly contribute to the development of learners' higher-order thinking skills and prepare them to become more analytical, autonomous, and effective problem solvers in both academic and real-life contexts.

Conclusion

This chapter shed light on the historical background of critical thinking and its conceptualization in the educational field. It also discussed the cognitive foundations of critical thinking and the main characteristics of critical thinkers. Additionally, the chapter explored critical thinking in Algerian EFL education, the different taxonomies of critical thinking skills, and the transferability of these skills across different contexts. Finally, it examined the relationship between critical thinking and Problem-based learning. The next chapter will present the research methodology, data collection procedures, and field data analysis.

CHAPTER THREE

Field Work & Data Analysis

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Introduction

This chapter presents the interpretation of the data collected for this study that is devoted to provide a detailed analysis of the practical framework which investigates teachers and learners' attitudes concerning the effect of Problem-Based Learning on critical thinking in EFL classrooms. It offers a thorough explanation of the research design, sample, instruments, and the procedures undertaken for conducting research and collecting data.

3.1 Research design

In order to achieve the research objectives, a mixed-methods approach was adopted, combining both quantitative and qualitative data collection tools, the quantitative data were gathered through a questionnaire administered to EFL Master one students aiming to explore students' perceptions of PBL and its role in enhancing their critical thinking skills. In addition, qualitative data were collected through semi-structured interviews conducted with University EFL teachers, providing deeper insights into their experiences, practices, and views regarding the implementation of PBL in EFL contexts. The collected data is analyzed with Google forms software. The research took place at Abbes Laghrour University- Khenchela, particularly, department of letters and foreign languages, section of English, during the academic year 2025-2026.

3.1.1 Sampling and population

The population of this study is Master one students of didactics. The total number of their group is about 100 students and 8 EFL teachers. The sample under investigation consisted of 40 students and 4 teachers (3 that use PBL and 1 that rely on traditional methods), in order to examine PBL, the focus was more put on teachers who use PBL in their classes which emphasize the larger number of questions and teachers who use PBL. In a view of the study objective, gender and age were not taken into consideration. The researcher

chosen first-year master students because they are skilled enough to practice critical thinking skills consciously or subconsciously compared to bachelor students.

Put it another way, master students have more intellectual experience. Likewise, students were more available and reachable in contrast with second-year master students. (It is worth noting that only 30 students responded to the questionnaire, although the intended sample consisted of 40 participants).

3.1.2 The Aim of the Interview

The interview was conducted to explore EFL teachers' perceptions of PBL and its impact on students' critical thinking skills in EFL classrooms. It also aimed to investigate teachers' instructional practices, their views on the role of critical thinking in language learning, and the challenges they may encounter when implementing PBL.

Furthermore, the interview sought to examine differences between teachers who apply PBL and those who do not, in order to gain a comprehensive understanding of its use in higher education contexts.

A semi-structured interview was adopted to gather the relevant information on behalf of other interview types. Semi-structured interviews demonstrate that the interviewer is fully prepared and competent to lead the conversation without imposing excessive control over the informants (Russell, 1988).

Besides, semi-structured interviewing is somewhat more suited for running in-depth reconnaissance of the interviewees' independent thoughts using probing open-ended questions (Adams, 2015).

3.1.3 Conducting the Interview

The interview is semi-structured, designed for teachers of first-year master students. It consists of 4 sections (general questions, teachers who use PBL, teacher who does not use PBL and suggestions), 13 questions for teachers who use PBL, 7 questions to the teacher who does not use PBL and 3 general questions for both of them, subjected to some adjustments throughout the interview sessions. The interview was held during the second semester with four EFL teachers. Unfortunately, arranging meetings with teachers was complicated as most of them were busy. To this end, two of the participants were interviewed individually face -to- face at the university. The interview was audio taped and lasted for five minutes. Diversely, the remaining teachers were interviewed online.

3.1.4 The Aim of the Questionnaire

The questionnaire is considered one of the most widely used and effective data collection tools globally in educational research, particularly for gathering information about participants' perceptions, attitudes, and experiences. According to John W. Creswell (2014), questionnaires are valuable tools for obtaining standardized data from a large number of respondents in a relatively short time, which enhances the reliability of the findings. Louis Cohen et al. (2018) emphasize that well-designed questionnaires administered to students can provide meaningful insights and contribute to accurate data analysis, especially when clear and structured questions are used.

3.1.5 The Administration of the Questionnaire

In this study, the researcher designed a questionnaire consisting of 5 sections (general questions, Perceptions of PBL, PBL & Critical Thinking, Challenges of PBL and Suggestions), 24 close-ended questions and one open-ended question, allowing students not only to provide measurable responses but also to express their opinions freely, the questionnaire takes

approximately 5 minutes.

Furthermore, the questionnaire was piloted with a group of students in the form of an online version using Google Forms, enabling participants to complete it at a convenient time. This approach helped ensure clarity, improve the quality of responses, and enhance the overall validity and reliability of the collected data.

3.2 Findings

3.2.1 The Analysis of Questionnaire

Results, analysis and interpretations

Section 1: general questions

Q1: Age

Years	21	22	23	24	25	26	27	28	32	35	38	Total
Numbers	6	8	5	1	1	1	1	2	1	2	1	29
%	20%	26.7%	16.7%	3.3%	3.3%	3.3%	3.3%	6.7%	3.3%	6.7%	3.3%	96.7%

Table 01: Students' age

(Notably, one of the respondents did not provide their age. therefore, the total percentage does not sum to 100% and the total number is not 30)

Age

30 responses

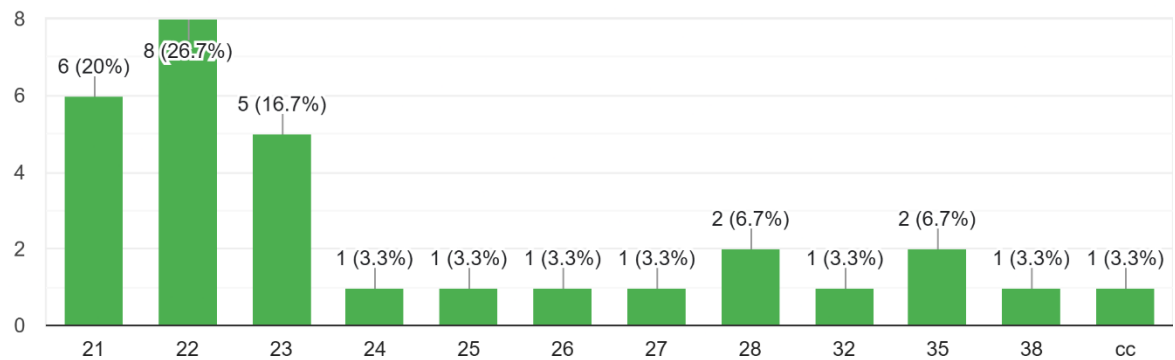


Figure 02: Students' age

The results presented in the table above show a diversity concerning the age of our sample. The students' age was divided into 11 groups, from 21 to 38. The participants presenting the age of 21 are 6 which represents (20 %) of the whole sample. The participants who are 22 years old which is considered as the normal age of the Master one Students, are 8 which represents the majority of the sample with (26.7 %). 5 students are 23 years old representing (16.7 %) of the whole sample. the ages 24, 25, 26, 27, 32, and 38 each have one participant, representing 3.3% for each age group, both ages 28 and 35 have two participants each, corresponding to 6.7% per age group. Furthermore, one participant did not report their age.

This implies that the participants are:

- Mature enough.
- Self-responsible.
- Aware about their learning styles and choices.
- Can take part in the learning material selection.

Q2: Gender

Gender	Males	Females	Total
Number	4	26	30
%	13.3%	86.7%	100%

Table 02: Students' gender

Gender
30 responses

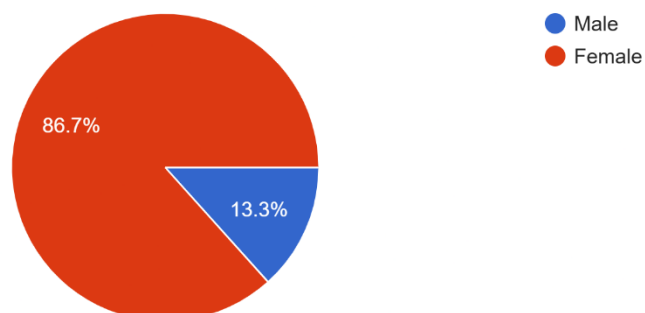


Figure 03: Students' gender

The results above show that the majority of our participants are females (26) from 30 participants with (86.7 %). Only 4 of our participants are males with a percentage of (13.3 %). This implies that females may tend to study languages more than males who prefer more scientific specialties.

Section 2: Perceptions of PBL

Q3: Have you experienced Problem-based learning activities in your English classes?

Have you experienced problem-based learning activities in your English classes?

30 responses

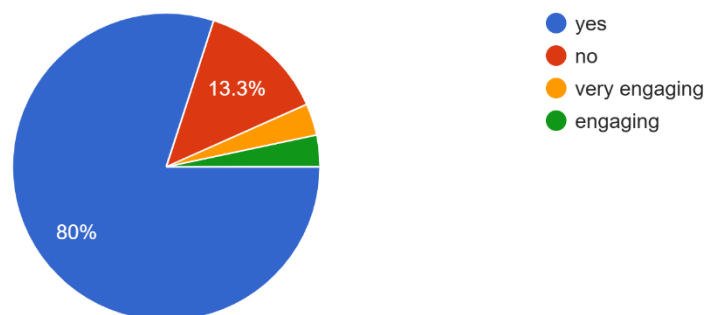


Figure 04: Students experiencing PBL in their English classes

The results show that 80% of the participants have experienced PBL in their English classes. However, 13.3% may not have experienced PBL or may be unfamiliar with its definition. It means that while a large majority have engaged with PBL, there remains a smaller group whose exposure is either limited or inconsistent. This gap may show that PBL's function is not understood by students of Master one, since several teachers in the English department of Abbes Laghrour University are already using PBL.

Q4: How often do your teachers use problem-based tasks?

How often do your teachers use problem-based tasks?

30 responses

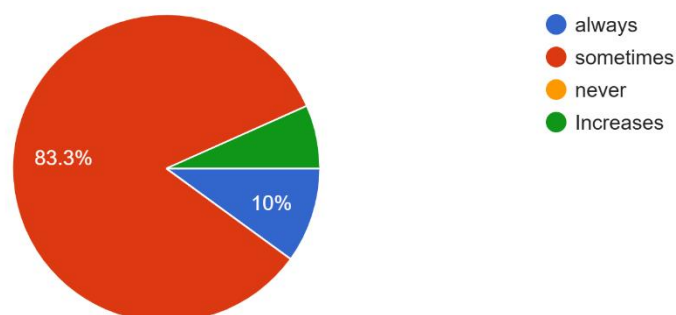


Figure 05: Teachers' use of PBL

The results show that 83.3% of participants stated that their teachers use PBL sometimes, 10% said that it is used always, and 6.7% reported that it increases. Importantly, no participants selected never. These findings suggest that PBL is moderately integrated into English classes, with some students experiencing an increase in its use over time.

Q5: Compared to traditional methods, PBL is?

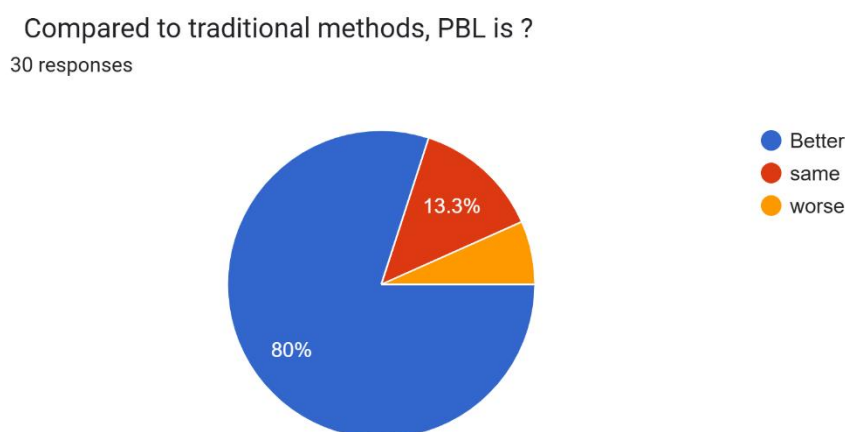


Figure 06: Thoughts of PBL

The results show that 80% of participants stated that PBL is better than traditional methods, 13.3% believe it is the same, and 6.7% consider it worse. These findings highlight a strong preference for PBL among the majority of students, revealing that most of Master one students prefer to take accountability of their own learning, are more motivated when it comes to student-centered approaches suggesting that they see it as a more effective or engaging approach compared to traditional teaching methods.

Q6: What kinds of problems or tasks have you worked on?

What kinds of problems or tasks have you worked on ?

30 responses

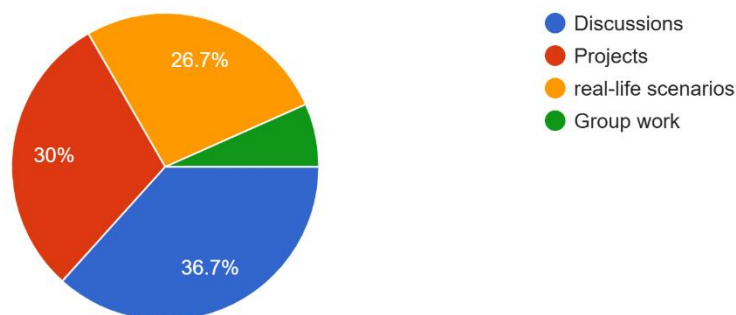


Figure 07: Types of problems that students dealt with

The results show that 30% of participants have worked on projects, 26.7% have engaged with real-life scenarios, and 36.7% have participated in discussions. Additionally, 6.7% reported working on group work. These findings indicate a diverse range of PBL tasks, with discussions being the most common, followed by projects and real-life scenarios. Group work, though less frequent, still represents a notable component of their PBL experiences. In my view, this diversity of tasks points to a well-rounded PBL approach, offering students a variety of collaborative and reflective opportunities.

Q7: You enjoy problem-based learning in English classes

You enjoy problem-based learning in English classes

28 responses

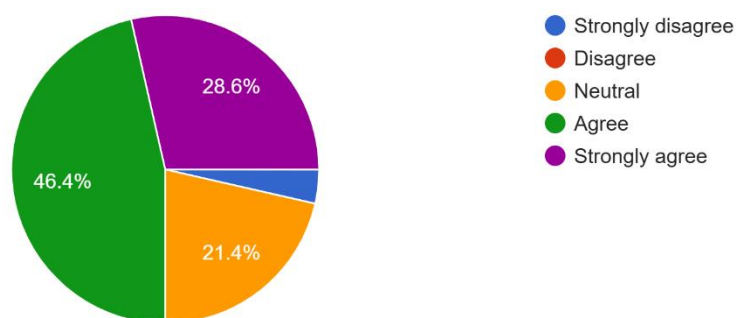


Figure 08: Students' level of enjoying PBL

The results show that 46.4% of participants agreed that they enjoy problem-based learning in English classes, while 28.6 % strongly agreed. Meanwhile, 21.4% remained neutral, and 3.6% strongly disagreed. Overall, this indicates a clear majority 75% who feel positively about PBL, suggesting that it is well-received and motivating for most students. In my view, this strong enjoyment could be a key factor in sustaining student engagement and enhancing their learning experience

Q8 : PBL makes English lessons more engaging

PBL makes English lessons more engaging
28 responses

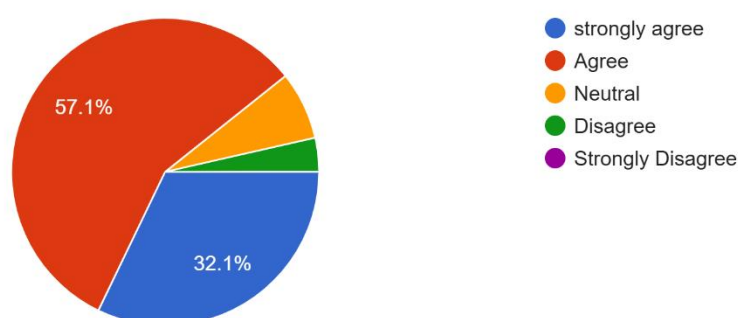


Figure 09: Engagement level of PBL in English lessons

The results show that 57.1% of participants agreed that PBL makes English lessons more engaging, while 32.1% strongly agreed. Meanwhile, 7.1% remained neutral, and 3.6% disagreed. This demonstrates a strong overall perception that PBL enhances engagement in English lessons. In my view, this widespread agreement underscores PBL's effectiveness in fostering a more dynamic and interactive learning environment.

Q9 : You feel motivated when solving problems in English

You feel motivated when solving problems in English
28 responses

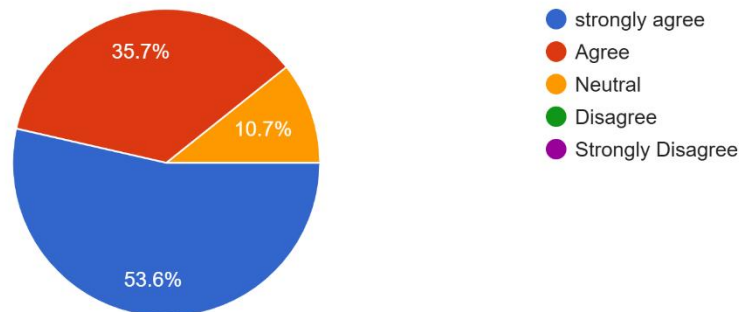


Figure 10: Students' motivation level when solving problems in English

The results show that 53.6% of participants strongly agreed that they feel motivated when solving problems in English, and 35.7% agreed. Additionally, 10.7% remained neutral, while no participants disagreed. This strongly suggests that PBL tasks in English foster significant motivation among students. In my perspective, this high level of intrinsic motivation may be crucial for sustaining engagement and deepening their learning outcomes.

Q10: do you prefer PBL or Traditional methods

do you prefer
28 responses

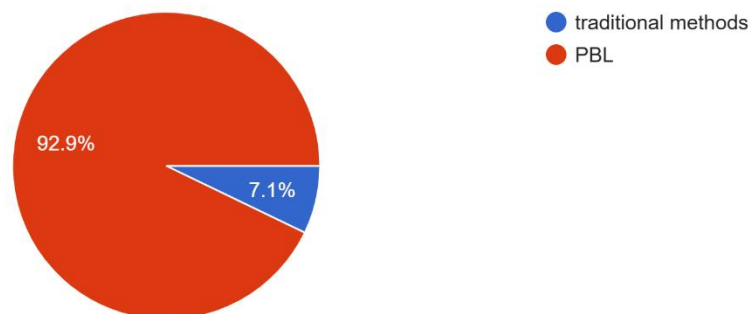


Figure 11: Students picking either PBL or Traditional methods

The results show that an overwhelming 92.9% of participants prefer PBL , while only 7.1% favor traditional methods. This highlights an almost unanimous preference for PBL among the students. In my view, this strong inclination suggests that students not only enjoy PBL but also see it as a more effective and meaningful approach to learning.

Q11: What do you like most about PBL

What do you like most about PBL
28 responses

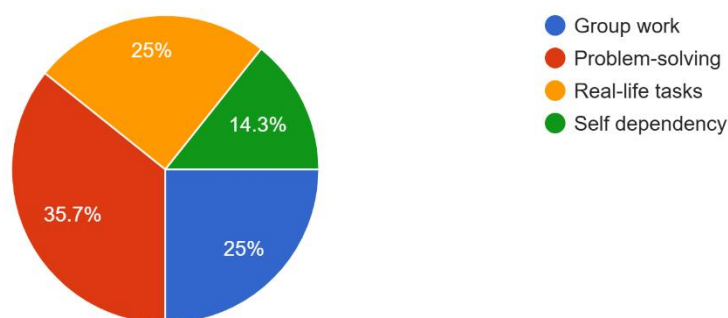


Figure 12: Students picking what they like most about PBL

This question represents the final item in the section on students' perceptions of problem-based learning. The results indicate that 35.7% of students appreciate problem solving most, 25% value real-life tasks, another 25% enjoy group work, and 14.3% prefer self-dependency. This diversity in preferences explains the individuality of each student, each learner gravitates toward different PBL techniques, likely influenced by their personalities, learning styles, or even levels.

Section 3 : PBL & Critical Thinking

Q12: PBL helps me develop my critical thinking skills

PBL helps me develop my critical thinking skills
30 responses

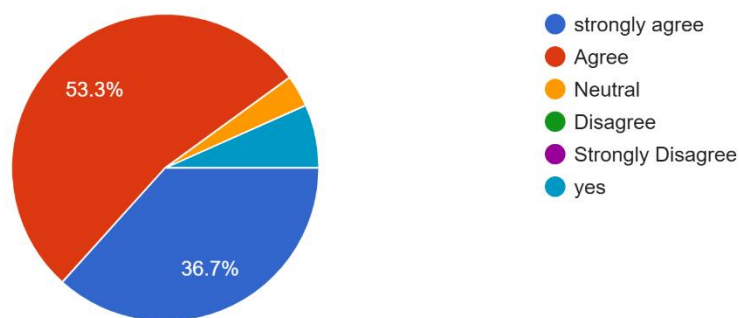


Figure 13: PBL and critical thinking

This question begins the third section on PBL and critical thinking. The results indicate that 53.3% of participants agreed that PBL helps them develop their critical thinking skills, and 36.7% strongly agreed. Meanwhile, 6.7% said yes, although it was a bit unclear, and 3.3% remained neutral. In summary, a significant majority over 90% perceive that PBL contributes positively to their critical thinking development. In my view, this strong consensus underscores PBL as a powerful method for fostering critical thinking skills in the EFL context.

Q13: Which skill improves the most?

Which skill improves the most ?

30 responses

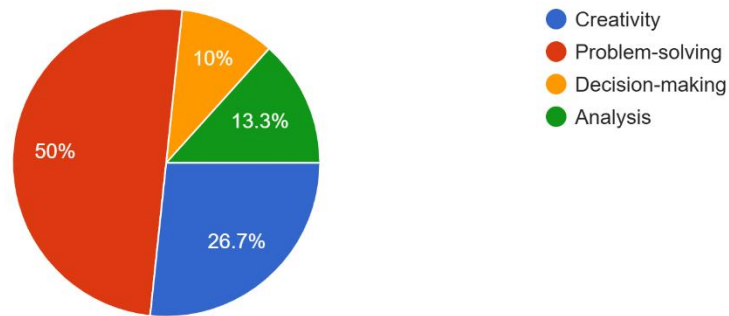


Figure 14: Skills’ improvement

The results show that 50% of participants identified problem-solving as the skill that improved the most, 26.7% pointed to creativity, 13.3% highlighted analysis, and 10% noted decision-making. These results suggest that problem-solving and creativity are the most enhanced skills, reflecting how PBL encourages both practical problem-solving and innovative thinking.

Q14: Does PBL help you think independently?

Does PBL help you think independently ?

30 responses

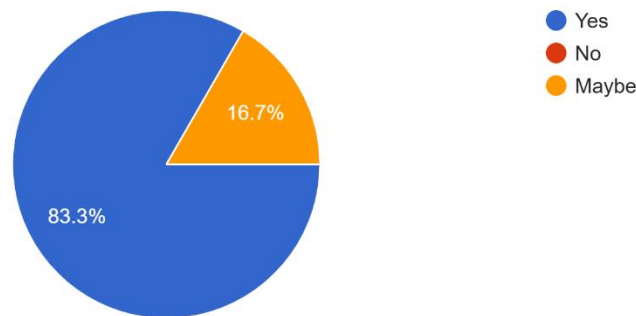


Figure 15: PBL’s effect of students’ thinking independency

The results show that 83.3% of students answered yes, and 16.7% said maybe, while no one responded no. This indicates that a large majority feel PBL fosters their ability to think independently. In my view, this suggests that PBL not only promotes critical thinking but also empowers students to take charge of their own learning (learner-autonomy).

Q15: I can better analyze problems after participating in PBL activities

I can better analyze problems after participating in PBL activities
30 responses

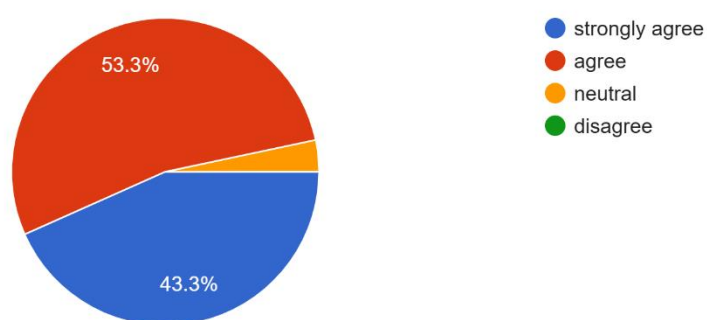


Figure 16: Students' ability of analyzing problems after participating in PBL activities

This final question in the PBL and critical thinking section asked whether students felt they could better analyze problems after participating in PBL activities. The results show that 53.3% agreed, 43.3% strongly agreed, and 3.3% were neutral, with no one disagreeing. In summary, nearly all students perceive an improvement in their ability to analyze problems following PBL. In my view, this further supports PBL's effectiveness in fostering deeper analytical skills.

Section 4: Challenges of PBL

Q16: Do you find it difficult to understand the problems/tasks?

Do you find it difficult to understand the problems/tasks?

30 responses

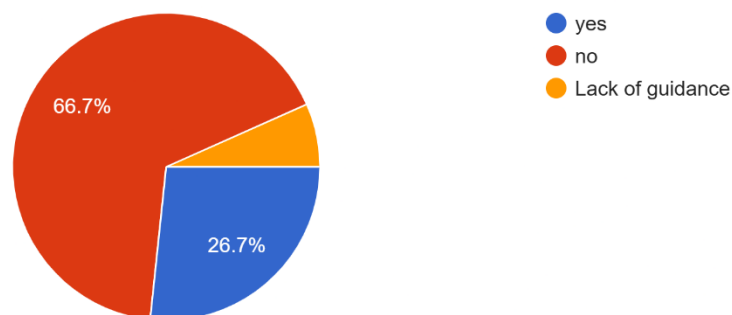


Figure 17: Students' difficulty level of understanding the problems and tasks

The results show that 66.7% of participants said no, they do not find it difficult to understand the problems and tasks. In contrast, 26.7% reported that they do find it difficult, and 6.7% mentioned a lack of guidance as a barrier. In summary, while most students do not struggle with understanding the tasks, a notable minority do, often due to insufficient guidance. In my view, this suggests that while PBL is accessible for many, clearer support structures may be needed for some students to fully engage which shows diversity as it has been mentioned before .

Q17: Does your level of English make PBL difficult for you?

Does your level of English make PBL difficult for you?

30 responses

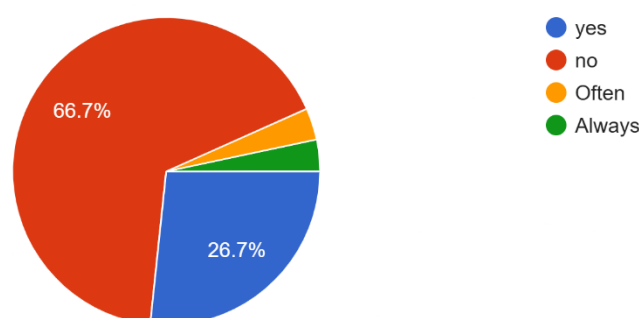


Figure 18: English level and its relation with PBL

This question examined whether students' English proficiency makes PBL more difficult. The results show that 66.7% of participants said no, 26.7% said yes, 3.3% said always, and another 3.3% said often. Given that these participants are master's students, it is expected that, overall, their advanced English level should reduce such difficulties. However, it is important to note that a quarter of the students still experience challenges, with some indicating frequent or regular difficulty. In my view, although the majority are equipped to handle PBL, this subset of students who struggle should be considered, as targeted language support might still be beneficial.

Q18: Do you feel confused or lost during PBL tasks?

Do you feel confused or lost during PBL tasks?
30 responses

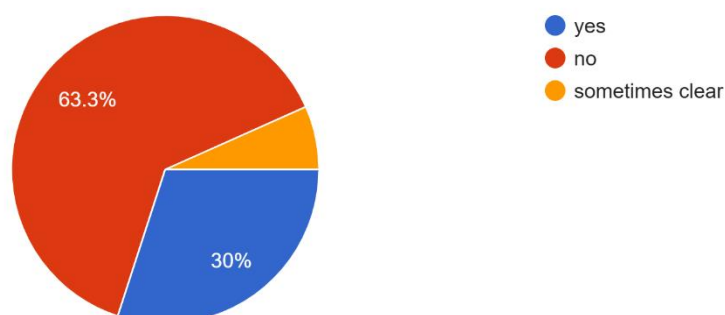


Figure 19: Students' confusion level during PBL tasks

The results show that 63.3% of participants said no, they do not feel confused, 30% said yes, and 6.7% said sometimes. Given that these are master's students, it is expected that many would navigate PBL tasks with confidence. However, the fact that 30% still feel lost, along with some experiencing occasional confusion, suggests that clearer instructions or more scaffolding might help. In my view, while most master's students manage well, addressing these pockets of confusion could further strengthen their PBL experience.

Q19: Is group work sometimes challenging?

Is group work sometimes challenging ?
28 responses

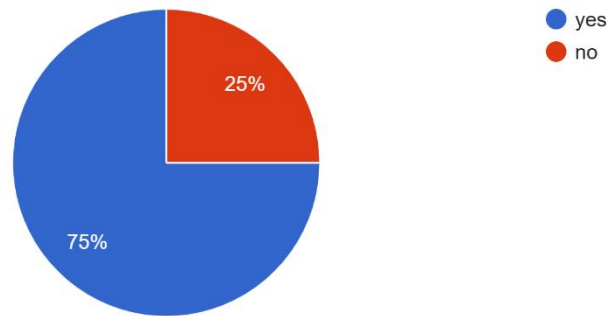


Figure 20: Students' Perceptions whether group work is challenging or not

The results show that 75% of participants said yes, while 25% said no. These findings suggest that a significant majority encounter challenges in group work, which may stem from coordination issues, differing levels of participation, or communication barriers. In my view, these challenges highlight the need for structured group roles or clear guidance to ensure equitable participation and reduce friction.

Q20: Do you prefer more guidance from the teacher during PBL?

Do you prefer more guidance from the teacher during PBL ?
28 responses

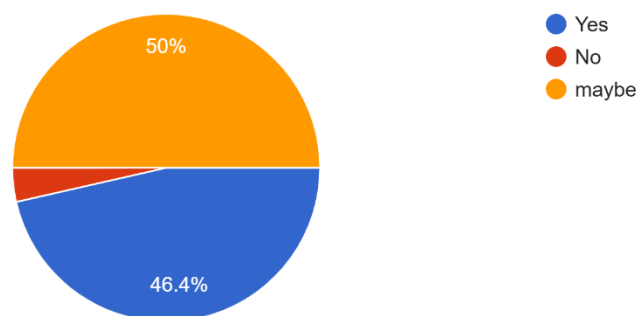


Figure 21: Teacher's guidance during PBL

The results show that 46.4% said yes, 50% said maybe, and 3.6% said no. If I were to select only three questions for the survey, this would be one of them, as it underscores the vital role of the teacher in facilitating effective PBL. In my view, the teacher's guidance is essential, as it helps structure the learning process and ensures students stay on track while still engaging in independent problem solving.

Q21: Do you feel more confident expressing your opinions after PBL activities?

Do you feel more confident expressing your opinions after PBL activities?
28 responses

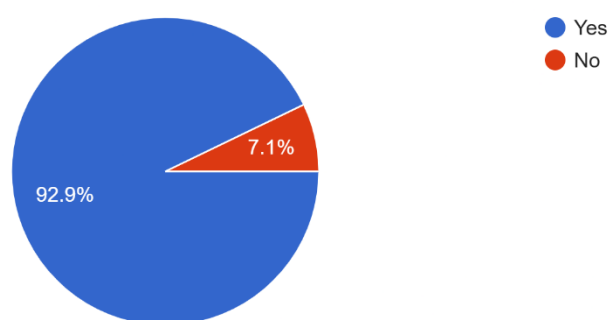


Figure 22: Students' confidence level while expressing their opinions after PBL activities

The results show that 92.9% of participants said yes, while only 7.1% said no. These findings reveal a striking majority who feel more assured in sharing their views, suggesting that PBL fosters a supportive environment for verbal expression. In my view, this strong confidence boost is a key benefit of PBL, as it encourages students to actively engage and articulate their ideas.

Section 5: Suggestions

Q22: What kind of help do you need from your teacher to improve your learning?

What kind of help do you need from your teacher to improve your learning?

30 responses

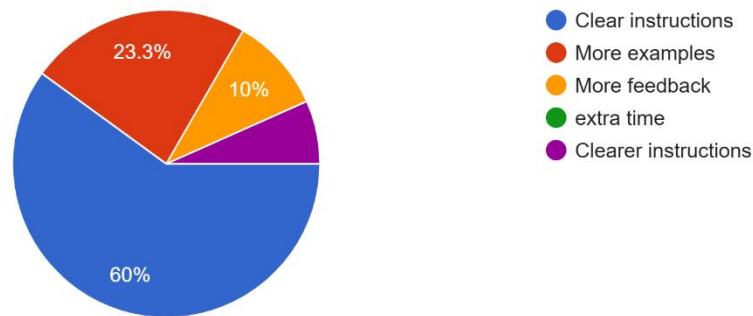


Figure23: Types of support needed from the teacher for students in order to improve their learning

The results show that 60% of participants identified clear instructions as the primary need, 23.3% wanted more examples, 10% requested more feedback. In other words, the majority of students emphasized the need for clearer instructions, while others requested additional examples or feedback. In my view, these findings highlight that students need a stronger scaffold especially through explicit guidance to help them navigate PBL tasks effectively.

Q23: Do you feel comfortable sharing your ideas with classmates?

Do you feel comfortable sharing your ideas with classmates?

30 responses

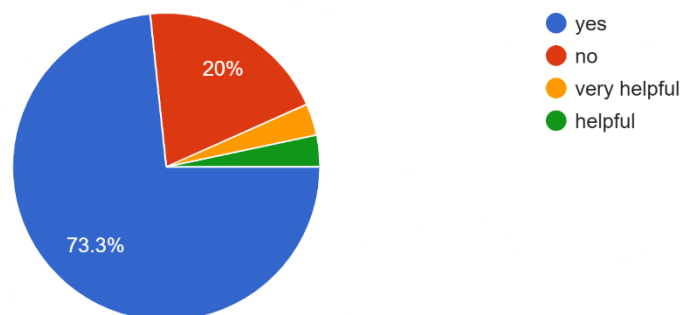


Figure 24: Students' being comfortable or not while sharing their ideas

The results show that 73.3% said yes, while 20% said no. The remaining 6.7% of responses may have been off-categorized, but the main trend clearly shows a majority feeling comfortable expressing themselves. In my view, this suggests that PBL fosters a supportive environment for peer interaction, though a small minority still feels hesitant.

Q24: Does PBL improve your communication skills in English?

Does PBL improve your communication skills in English?

30 responses

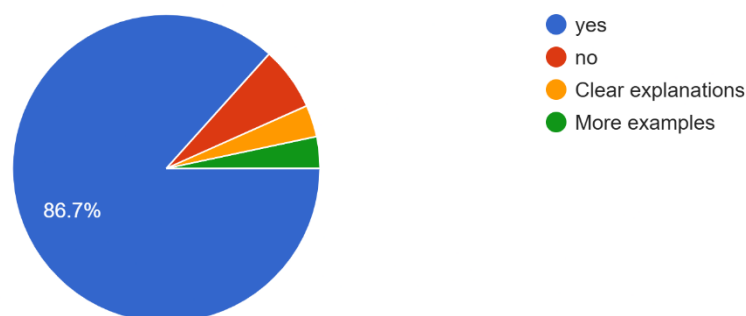


Figure 25: PBL and communication skills

The results show that 86.7% of participants said yes, and 6.7% said no. Again, some smaller categories like "clear explanations" or "more examples" might have been listed by mistake, but the main takeaway is that a large majority believe their communication skills have improved. In my view, this strongly indicates that PBL provides ample opportunities for practicing and refining spoken English, which is crucial in EFL contexts.

Q25: Would you recommend using PBL more often in EFL classes? Why?

The final question of the questionnaire was an open-ended prompt designed to allow students to freely express their thoughts and suggestions. The question asked, "Would you recommend using PBL more often in EFL classes, and why?" A total of 25 responses were recorded, reflecting a broad range of perspectives. Many students strongly endorsed PBL, emphasizing how it helps them engage in real-life language situations, boosts communication, and fosters critical thinking and autonomy. For instance, one student noted that PBL increases motivation by encouraging active participation in meaningful contexts. Another, which is my personal favorite response, stressed that PBL is crucial for developing autonomous learners by immersing them in real-world tasks. Conversely, a few students expressed reservations, with one stating that they do not find PBL useful. Another balanced their answer, recommending PBL but also noting it should be combined with traditional methods to support beginners.

Overall, the open-ended responses underscore the rich potential of PBL in EFL classrooms it empowers students to become more confident, communicative, and critical thinkers, while also inviting them to shape their learning journey in their own words.

3.2.2 The Analysis of The Interview

Results, analysis and interpretations

Teachers	Gender	Teaching methods	Teaching Experience
T1	Male	Problem-Based Learning	10
T2	Male	Problem-Based Learning	2
T3	Female	Problem-Based Learning	20
T4	Male	Traditional methods	12

Table 03: Demographic Information about the teachers

The above table describes detailed information regarding participants' gender, teaching methods and teaching experience. All the 4 teachers have a teaching experience ranging from 2 years to 20 years.

1- Teachers who use PBL

Q1: How many years have you been teaching English at the university level?

- Teacher 1: 10 years
- Teacher 2: 2 years
- Teacher 3: 20 years

Q2: What teaching methods do you usually use in your classes?

- Teacher 1: Interactive
- Teacher 2: Blended learning, flipped classroom, gamification, PBL, CBA
- Teacher 3: It depends on the lesson

Q3: How would you describe your students' level of critical thinking?

- Teacher 1: Low
- Teacher 2: Very low, often non-existent

- Teacher 3: Essential for learners, but not quantified (though emphasized as crucial)

Q4: How often do you use PBL in your classes?

- Teacher 1: Sometimes
- Teacher 2: Sometimes
- Teacher 3: Often

Q5: What motivates you to use PBL?

- Teacher 1: Activates students' thinking and places them at the center
- Teacher 2: Nature of the topic, shifts expectations
- Teacher 3: Reinforces deep thinking, sparks new ideas

Q6: How do students respond to PBL activities?

- Teacher 1: Positively
- Teacher 2: Varied; sometimes well, sometimes not
- Teacher 3: They like it, even without labeling it as PBL

Q7: In your opinion, how does PBL affect students' critical thinking?

- Teacher 1: Enhances it
- Teacher 2: Very positively, forces them to seek solutions
- Teacher 3: Enhances their thinking

Q8: How do you define PBL in the context of EFL?

- Teacher 1: Learner searches for information themselves, no just passive reception

- Teacher 2: The problem is a communicative situation, use knowledge to communicate and solve
- Teacher 3: Shifts from lecture-based to student-centered, teacher facilitates

Q9: Do you think PBL is suitable for all proficiency levels? Why or why not?

- Teacher 1: Not all levels, just advanced levels
- Teacher 2: Obviously not, critical thinking is a high-level skill tied to language proficiency
- Teacher 3: Only advanced levels

Q10: How important is developing critical thinking in EFL classrooms?

- Teacher 1: Very important
- Teacher 2: Very crucial, language is more than symbols, it needs critical thinking
- Teacher 3: Essential to analyze, criticize, and read between the lines

Q11: In what ways can PBL promote learners' ability to analyze, evaluate, and solve problems?

- Teacher 1: Forces them to solve problems themselves
- Teacher 2: Helps them think from multiple angles; weigh options
- Teacher 3: Encourages deep thinking, fosters discovery and creativity

Q12: Do you believe language learning should go beyond grammar and vocabulary to include thinking skills?

- Teacher 1: Yes
- Teacher 2: Most definitely, language is more than words, it requires critical thinking

- Teacher 3: Yes, absolutely, critical thinking is vital for all students, not just technical fields

Q13: What barriers (e.g., time, curriculum, assessment) might limit your use of PBL?

- Teacher 1: Time and class size
- Teacher 2: The curriculum is a major barrier, it focuses only on communication, not critical analysis
- Teacher 3: Time constraints, large class sizes limit individual attention

Q14: How does the teacher's role change when using PBL compared to traditional teaching?

- Teacher 1: The teacher is a guide
- Teacher 2: Shifts from knowledge provider to negotiator of meaning; learning flows both ways
- Teacher 3: Changes to facilitator, the teacher triggers students and guides them when needed

Q15: How do you balance guidance and learner autonomy?

- Teacher 1: Using PBL in activities
- Teacher 2: Let students explore first, guide only when they are off track
- Teacher 3: Balances by giving initial steps, then facilitates with feedback

Q16: Are you interested in receiving training on PBL methods? Why or why not?

- Teacher 1: Yes, they help a lot
- Teacher 2: No, training to think freely defeats the purpose

- Teacher 3: yes, open to balance since they emphasized guidance and autonomy

Interpretation of the teachers who use PBL Interview

The interviews with the three teachers provided rich insights into their experiences and perceptions of Problem-Based Learning in EFL classrooms. Despite their different levels of teaching experience, challenges and outcomes, all three emphasized the importance of critical thinking and integrating higher-order thinking skills within language learning especially for advanced levels like Master students. Teacher 1, with 10 years of experience, saw PBL as a useful, though not frequent as a method, citing time and class size as constraints. Teacher 2, a newer instructor (2 years), also appreciated PBL but highlighted the rigidity of the curriculum as a barrier. Meanwhile, Teacher 3, who frequently uses PBL, emphasized its power to engage students and foster independent thinking. Across all teachers, PBL was seen as a transformative approach that shifts the teacher's role from a source of knowledge to a guider and a facilitator. However, it is noted that class size and time constraints, as well as rigid curriculum, limit PBL's full potential and function, this is why, apart from the Interview, while discussing with teachers, the researcher found that most teachers that use PBL, when apply it in the classrooms they form groups of students to find a solution to a curtain problem. (This was stated as the best technique to apply PBL without facing several challenges, so the teacher's role involves organizing groups, giving instructions about the given task and manage the classroom), now the student remains as the main source to obtain knowledge.

2- Teacher who does not use PBL

Q1: How many years have you been teaching English at university level?

Answer: since he started as a substitute teacher, it's about 12 years, but as a main teacher, it's around 8 or 9 years.

Q2: What teaching methods do you usually use in your classes?

Answer: It depends on the subject. I have flexibility and adapt from year to year.

Q3: How would you describe your students' level of critical thinking?

Answer: I would describe their critical thinking level as moderate to low, they often need guidance to analyze and evaluate ideas.

Q4: Are you familiar with Problem-Based Learning?

Answer: Yes, I am familiar with PBL as a teaching approach.

Q5: Have you ever tried using PBL? Why or why not?

Answer: No, I haven't tried it because I don't find the atmosphere required among students. They're used to spoon-feeding.

Q6: What teaching methods do you prefer instead of PBL?

Answer: The biggest challenge is lack of engagement from students. They rely too much on easy shortcuts and AI tools.

Q7: What challenges prevent you from using PBL?

Answer: The main challenges are time constraints and large class sizes, which make it hard to facilitate individualized problem-solving.

Q8: Do you think PBL can improve students' critical thinking?

Answer: Yes, if used wisely. It depends on the students. Older generations were more creative, but today's students rely too much on shortcuts.

Q9: Would you consider using PBL in the future? Why or why not?

Answer: I might consider it if I got more support, but right now I find it too hard with the current students' habits.

Q10: What support or training would encourage you to use PBL?

Answer: I don't need training for myself, but I would need the students to be more willing and engaged first.

Interpretation of the teacher who does not use PBL Interview

The result of this Interview shows that the teacher has approximately 12 years of teaching at university, which reflects a solid professional background in university level instruction. The teacher does not rely on a fixed teaching method, but rather adapts his approach depending on the subject and the academic context. (as he added, he liked to be flexible). However, he shows a clear preference for traditional and teacher-centered methods such as lectures and guided discussions (as it was mentioned earlier) .

The teacher made it clear that the new generation of students' critical thinking skills are not advanced, as he described their level as moderate to low, noting that students often require guidance since they are more reliable to the teacher as the main source of knowledge. This perception is consistent with his decision not to use PBL, as he believes that students are not prepared for such an approach. Specifically, he explains that students are familiar to “spoon-feeding” and lack the engagement required for PBL activities.

He also identifies lack of student motivation and over-reliance on easy shortcuts, including AI tools as major barriers to implementing PBL which I personally agree with him on that, my first years studying English at the University, students were more active and autonomist learners who found several ways to enjoy studying. However, in recent years, ever since AI tools started to be common and familiar, students became more reliable on it without challenging themselves to be more creative. Although the teacher highlighted that PBL can improve students' critical thinking, he emphasizes that its effectiveness depends largely on students' attitudes and

willingness to engage. For this reason, he expresses hesitation about using PBL in the future, unless there is a noticeable improvement in students' involvement and classroom dynamics.

Interestingly, unlike other teachers, he does not see training as a necessary factor for adopting PBL. Instead, he believes that the main issue lies with the students rather than the teacher, highlighting the importance of learner readiness in the success of this approach.

3.3 Comparison Between Teachers Who Use PBL and Those Who Do Not

Aspect	Teachers Using PBL	Teacher Not Using PBL
Teaching Approach	Student-centered and interactive methods	Traditional, lecture and teacher-based methods
View of Critical Thinking	Low but can be improved through PBL	Moderate to low, students need guidance
Use of PBL	Used sometimes or often	Not used
Perception of PBL	Positive, enhances thinking and autonomy	Positive in theory but difficult in practice
Student Response	Generally positive	Students not ready or engaged
Main Challenges	Time, class size, curriculum	Student habits, lack of engagement, reliance on shortcuts
Teacher's Role	Guide, facilitator	Knowledge provider
Future Use	Willing to improve usage	Conditional, depends on students

Table 04: Comparison between teachers who use PBL and those who do not

The above table describes detailed analysis regarding the comparison between teachers who apply Problem-Based Learning and the teacher who does not.

The results reveal several important differences in teaching practices, beliefs, and classroom challenges. Teachers who use PBL tend to adopt a more student-centered approach, where learners actively participate in the learning process, while the non-user relies mainly on traditional, teacher-centered methods such as lectures and guided discussions.

Although both groups agree that students' level of critical thinking is generally low, they interpret this issue differently.

Teachers who use PBL consider it a reason to implement this approach in order to develop students' thinking skills, whereas the non-user views it as a limitation that prevents the effective use of PBL.

Discussion of the results of the questionnaire:

Firstly, the Questionnaire aimed at having a background information about Master one students of Didactics their attitudes, perceptions, perspectives, challenges and suggestions of inserting PBL in the English classrooms. The analyses reveal that the majority of the participants demonstrate a high level in English as a foreign language. The results showed also that the students preferred the PBL method and most of them agreed that it enhances their critical thinking skills, motivation, communication and learner-autonomy. On the other hand, the majority of them stated that clear instructions from the teacher are highly necessary, the teacher should be the facilitator. They also suggested implementing more PBL activities in the future since it helps them to learn through real life situations which is the correct way to learn a foreign language as one student said.

In addition, most of the students agreed preferring classroom discussions and group work rather than being tied up with traditional methods.

Discussion of the results of the questionnaire:

For the second means of data collection which was the teachers' interview, it aimed to investigate teachers' instructional practices, their views, challenges and perceptions on the role of critical thinking in EFL classrooms, and the challenges they may encounter when implementing PBL. Although teachers who use PBL and the one who does not show differences, However, all teachers agreed that students' level of critical thinking is generally low, which highlights the need for teaching methods that develop higher-order thinking skills. Teachers who use PBL practice it as an effective solution to improve students' thinking, engagement, and autonomy. They describe it as a student-centered approach where the teacher acts as a guide and facilitator. In contrast, the teacher who does not use PBL prefers more

traditional methods and believes that students are not ready for such an approach due to their lack of motivation and reliance on direct instruction.

My personal opinion, is that these findings suggest that the implementation of PBL depends not only on its effectiveness but also on teachers' beliefs, instructions, techniques and students' readiness, and the lesson provided.

Limitations of the research:

Like any research study, this research faced several limitations that may have influenced its results.

First, the study was conducted only at Abbes Laghrour University with a limited number of participants, including only Master one's EFL students and a small group of university teachers.

In addition, time constraints did not allow the researcher to conduct classroom observations or experimental sessions or even try new academic tests or strategies to examine the long-term effects of Problem-based learning on learners' critical thinking skills. Another limitation concerns the students' unfamiliarity with learner-centered approaches such as PBL, since many of them are more used to traditional teaching methods. Also, some participants may not have provided fully accurate responses due to lack of experience with PBL or personal differences in attitudes and motivation. Finally, the increasing reliance on AI tools and passive learning habits among students may also have affected authentic participation and independent critical thinking during the research process.

Recommendations and Suggestions:

Based on the findings of this study, several recommendations can be suggested for improving the implementation of PBL in EFL classrooms. First, university teachers should receive a sufficient training on how to effectively apply PBL and integrate it into their teaching practices. In addition, EFL curriculum should include more learner-centered activities that encourage critical thinking, and problem-solving skills. Teachers are also encouraged to create supportive classroom environments where students feel confident expressing their ideas and participating in discussions. Students should also be encouraged to become more autonomous learners and rely less on memorization and AI tools that limits critical thinking.

Conclusion:

To conclude, in this chapter I have presented the sample and the population of the research and the different means of data collection. Then I have provided a detailed analysis, interpretations and discussions of the results of collecting data which are Questionnaires and Interviews.

Finally, I have presented the results and the findings of this research which revealed that our participants had positive perceptions towards the technique presented in this study which is Problem-based learning, as it enhances EFL learners' critical thinking.

General Conclusion:

This study was set to investigate the attitudes and perceptions of teachers and learners about the effect of Problem-based learning on critical thinking in EFL classrooms. In this research, some light has been shed on the EFL learners and teachers' different perspectives about the use of this method. In addition to that, more attention was paid on finding out whether this technique helped in enhancing the EFL learners' critical thinking skills or not.

Concerning the aims of the study, it has been confirmed through the results obtained when analyzing and interpreting the data collected using various but meaningful investigative tools that the aims have been achieved.

The aim was to explore teachers and learners' attitudes, perceptions and challenges concerning the effects of PBL on learners' critical thinking. According to the interpreted results, we therefore confirm that the implementation of this method had a positive impact on helping the EFL learners to enhance their critical thinking skills, therefore we can say it has been successfully achieved.

In this research, both quantitative and qualitative methods were used (mixed methods), in order to obtain a deeper understanding of the topic. A questionnaire was administered to Master one's EFL students, while interviews were conducted with university teachers, including both teachers who apply PBL and those who do not. The main objective of this study was to examine whether PBL contributes to the development of students' critical thinking skills and to explore teachers and learners' perceptions toward this teaching approach.

First, the findings of the questionnaire revealed that the majority of students have already experienced PBL activities in their classrooms and generally hold positive attitudes toward this method. Most participants considered PBL more effective than traditional teaching methods, especially in terms of motivation, classroom engagement, communication, and problem-solving. In addition, students reported that PBL helped them develop several important skills, including independent thinking, creativity, analysis, and more importantly learner autonomy. The results also demonstrated that many students felt more confident expressing their opinions after participating in PBL activities.

Second, the teachers' interviews highlighted the importance of critical thinking in EFL learning. Teachers who apply PBL described it as a learner-centered approach that encourages students to think deeply, solve problems, and become more autonomous learners. They also emphasized that the teacher's role changes from being the sole source of knowledge to becoming a guide and facilitator. However, several challenges were identified, such as time constraints, large class sizes, curriculum limitations, and differences in students' proficiency levels. On the other hand, the teacher who does not use PBL acknowledged its potential benefits but expressed concerns regarding students' lack of engagement and dependence on direct instruction.

Responding to the research questions we shall say:

Q1: How does problem-based learning influence the development of critical thinking skills among EFL learners?

Answer: According to the revealed results, the researcher found that PBL positively influences the development of critical thinking skills among EFL learners by encouraging them to analyze problems, think independently, solve real-life tasks, and participate actively in learning.

Q2: What roles do teachers play in implementing problem-based learning to support learners' critical thinking?

Answer: The researcher found that teachers play the role of guides and facilitators in PBL by:

- explaining the tasks.
- forming groups.
- managing the classroom.
- encouraging learners to take accountability for their own learning.
- providing instructions.
- creating activities that promote analysis, problem-solving, and independent thinking.

Q3: What are the challenges that both teachers and learners face while implementing PBL?

Answer: Both teachers and learners face challenges in implementing PBL, including time constraints, large class sizes, curriculum limitations, students' low engagement, and the need for more guidance during activities.

In this research, both quantitative and qualitative methods were used (mixed methods), in order to obtain a deeper understanding of the topic. A questionnaire was administered to Master One's EFL students, while interviews were conducted with university teachers, including both teachers who apply PBL and those who do not. The main objective of this study was to examine whether PBL contributes to the development of students' critical thinking skills and to explore teachers and learners' perceptions toward this teaching approach.

After the various steps and the different procedures, this study has reached finally and positively what it has been set for and as in any scientific research I ought to say that this study was not so easy to investigate. In fact, many difficulties and hindrances have been encountered

throughout. However, I personally have enjoyed each obstacle and each step, as it proved to be deeply enriching and academically valuable, fostering both my personal growth and my research skills.

Abstract in Arabic

التلخيص

تهدف هذه الدراسة إلى فحص تأثير التعلم القائم على تنمية مهارات التفكير النقدي في أقسام اللغة الإنجليزية كلغة أجنبية. وعليه، تسعى إشكالية البحث إلى تحديد مدى إسهام هذا الأسلوب التعليمي في تعزيز مهارات التفكير النقدي لدى الطلبة وتحسين أدائهم داخل الصف الدراسي، كما تهدف إلى استكشاف تصورات أساتذة اللغة الإنجليزية كلغة أجنبية حول تطبيق هذا الأسلوب ودوره في تنمية التفكير النقدي لدى المتعلمين.

ومن أجل تحقيق أهداف هذه الدراسة، تم اعتماد منهجية البحث المختلط التي تجمع بين الأسلوبين الكمي والنوعي. حيث تم توزيع استبيان على طلبة السنة الأولى ماستر بجامعة عباس لغرور بخنشلة، بالإضافة إلى إجراء مقابلات شبه موجهة مع أساتذة اللغة الإنجليزية كلغة أجنبية في طور الماستر، وذلك لجمع البيانات المتعلقة بموضوع الدراسة.

وقد تم تحليل البيانات المتحصل عليها باستخدام استبيان إلكتروني. وقد أظهرت النتائج النهائية أن التعلم القائم على المشكلات له أثر إيجابي في تنمية مهارات التفكير النقدي لدى الطلبة، حيث ساهم في تعزيز العمل التعاوني وتشجيع التعلم النشط داخل الأقسام. كما أكد الأساتذة أن هذا الأسلوب يساعد المتعلمين على أن يصبحوا أكثر استقلالية وانخراطاً في العملية التعليمية. ومع ذلك، فقد تم تسجيل بعض التحديات والصعوبات التي تعيق تطبيق هذا الأسلوب بشكل فعال داخل البيئة التعليمية.

Abstract in French

Résumé

La présente étude vise à examiner l'effet de l'apprentissage par problèmes sur le développement de la pensée critique dans les classes d'anglais langue étrangère. Ainsi, la problématique cherche à déterminer dans quelle mesure l'apprentissage par problèmes améliore les compétences de pensée critique des étudiants ainsi que leur performance en classe. Elle vise également à explorer les perceptions des enseignants d'EFL concernant la mise en œuvre de cette approche et son rôle dans le développement de la pensée critique chez les apprenants.

Pour mener cette recherche, une approche mixte combinant des méthodes quantitatives et qualitatives a été adoptée. À cet effet, un questionnaire a été administré aux étudiants de première année de master à l'université Abbes Laghrour de Khenchela, en plus d'un entretien semi-directif réalisé avec des enseignants d'EFL du cycle master, afin d'atteindre les objectifs de la recherche.

Les données recueillies ont été analysées à l'aide de Google Forms. Enfin, les résultats ont révélé que l'apprentissage par problèmes a un effet positif sur le développement des compétences de pensée critique des étudiants, encourageant la collaboration et favorisant l'apprentissage actif dans les classes d'EFL. De plus, les enseignants d'EFL ont confirmé que cette approche aide les étudiants à devenir plus autonomes et plus engagés dans le processus d'apprentissage. Cependant, certaines difficultés liées à la mise en œuvre du PBL ont également été identifiées.

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