Fostering Oral Interaction and Self-Regulation through Problem-Based Learning

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Declaration

I hereby declare that my research report entitled:

Fostering Oral Interaction and Self-regulation through Problem Based Learning

- is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared and specified in the text;
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- has been submitted by or on the required submission date.

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FOSTERING ORAL INTERACTION AND SELF-REGULATION THROUGH PBL

Abstract

The purpose of this study was to analyze the incidence of problem-based learning (PBL) approach to foster oral interaction and self-regulation. Forty-five undergraduate students enrolled in an intermediate English course level of a public university located in Pasto, Colombia participated in this study. This project was carried out to identify the strategies that strengthen students' language abilities, and their capacity to self-regulate learning, and self-efficacy, while discussing relevant, current topics by solving problems creatively.

The intervention consisted of ten lessons, which were first applied to 30 participants of group 1 and replicated with 15 participants in group 2. During this time, a variety of data collection instruments were used, such as a pre-test and posttest, field notes, a teacher journal, a students' self –assessment, a checklist, and interviews. The results revealed that PBL fosters students' oral practice and interaction, encouraging them to take risks to communicate, to develop transferrable skills, and to self-evaluate their learning while fostering a student-centered approach. However, most participants agreed this method is more suitable for a controlled or semi-controlled classroom environment than for applying it in an independent context.

Key words: Problem-solving, oral expression, self-regulation, creativity

Resumen

El propósito del presente estudio fue analizar la incidencia del aprendizaje basado en resolución de problemas (ABP) para promover la interacción oral y la autorregulación. Cuarenta y cinco estudiantes matriculados en el cuarto nivel de inglés de una universidad pública en Pasto, participaron de este estudio. El proyecto se llevó a cabo con el fin de identificar las estrategias que fortalecen las habilidades lingüísticas de los estudiantes y su capacidad para auto-regular su

aprendizaje y autoeficacia, mientras discuten temas actuales relevantes, solucionando problemas creativamente.

La intervención pedagógica consistió de diez lecciones, aplicadas a 30 participantes del grupo 1 y replicadas con 15 participantes del grupo 2. Durante este periodo, se utilizaron varios instrumentos para recolectar los datos, tales como un pre-examen, un post-examen, diarios de campo, un formato de autoevaluación, y entrevistas. Los resultados revelaron que el PBL promueve la práctica oral, la interacción, el desarrollo de habilidades transferibles y de auto-evaluación, fomentando un modelo educativo centrado en el estudiante. Sin embargo, la mayoría de participantes concordaron en que esta metodología es más adecuada en ambientes de aprendizaje controlados o semi-controlados, que dentro de contextos totalmente independientes.

Palabras claves: Resolución de problemas, expresión oral, autoregulación, creatividad

Table of Contents

Chapter 1: Introduction

The question in this inquiry intended to identify whether creative problem-based-learning tasks benefit the speaking skills of a group of undergraduate students, especially when interacting with each other, as well as fostering their self-regulated learning to self-assess their progress and become independent.

In this perspective, this study analyzed one of the most common problems students face when they are learning a foreign language that is the difficulty to use their speaking skills to interact with their peers. Although there is a vast amount of literature on oral interaction, which is based on the fact that the ability to communicate orally by using the target language provides EFL students with a sense of self-achievement, improving their capacity to reflect on the strategies which work better for them, it still represents a challenge for both teachers and learners.

Brown (2006) claims that some factors affecting learning are related to personal ones, including self-esteem, willingness to communicate, motivation and anxiety, which influence students' attitudes towards learning a foreign language, as well as on their performance. With this in mind, it is necessary to reflect on the importance of renewing the pedagogical practices so that students play an active role in their learning, and move beyond their comfort zones, especially in lecture-based environments, fostering oral communication, self-awareness, cooperation, leadership qualities, and creativity, which are essential 21st-century skills to construct learning in a non-traditional way.

1.1 Rationale for the study

Due to the importance that oral communicative skills have in academic, professional and personal environments, it is vital to foster a student-centered approach in the classroom, which

enhances learners to interact each other in an independent manner, while providing them with appropriate stimulus to strengthen their motivation and confidence; researching on problem-based learning may provide useful information to benefit English language learners to improve their oral skills, to get a more active role when they are learning, and to develop autonomy.

According to Ellis (1999) interaction requires the interpersonal activity occurring during face-to-face communication, and the intrapersonal activity implied in mental processing. Within the framework of these criteria, this research was carried out, not only to support the existing knowledge about the relationship between problem–based learning and oral interaction efficacy but also to inspire English language teachers to think of innovative scenarios that enhance creativity and encourage EFL students to monitor their progress.

In spite of all the significant information provided by ESL researchers who had already investigated the effect that problem-based and autonomy have on learning a second language, those findings had not been always distinguishable from the learners' academic outcomes, as Schunk claims:

> In many studies, measures of metacognition, self-regulation, and self-regulated learning are not linked with measures of students' learning or achievement. It is tempting to assume that if students who use more self-regulatory strategies demonstrate higher achievement than students who use fewer strategies, then the self-regulation produced the difference in achievement. But these data are correlational, not causal. To make causal statements, researchers must collect behavioral measures of self-regulation and link these to changes in learning, a procedure followed in few research studies. (Schunk, 2008, p. 467)

To avoid falling out in the same paradigm, both the data collection instruments and the intervention plan were compliant with appropriate pedagogical criteria in order to provide

consistent information about the participants' performance, as well as statistical indicators. In this connection, it is also important to mention that the participants had been immersed in lecture-based environments, mainly following the instructions provided by their teachers, thus the PBL approach aimed to move students outside their comfort zones while providing them a stimulus to interact.

1.1.1 Needs analysis and problem statement

This study was carried out in the language center of a Colombian public university located in Pasto, Nariño. As a graduation requirement, the internal institutional policies of this university have established students have to approve at least two of the six English levels offered. Moreover, the teaching philosophy of these courses focuses on the development of the linguistic components of a foreign language, the knowledge of cultural and intercultural aspects, the internationalization of cultures, and the function of the languages in the process of globalization. In this context, the curriculum has been designed following the principles of communicative language teaching to encourage students to use the foreign language as a communicative device in order to develop the four language skills (speaking listening, reading, and writing).

In accordance with the internal educational policies of the university, undergraduate students must take a 96-hour English class each semester, which is equivalent to one level. Each level is aligned with the Common European Framework (Council of Europe, 2018), starting with the elementary (A1) and ending with the upper-intermediate (C1).

With respect to the needs analysis, it consisted of three instruments that included a questionnaire, a written interview, and an oral test, which were applied to a group of 50 female

and male students, enrolled in different English levels. (See 6.5Appendix A:). The participants were selected at random and the instruments intended to collect reliable data to identify how effective students' interaction in the classroom was and to find out whether students used any strategies to get success in their oral interaction exchanges.

The results of the needs analysis revealed that 60% of students were uncertain about the strategies that help them to develop communicative skills, and most of them (46.9%) stated that it is essential to know how to communicate ideas orally when learning a foreign language, as it provides them better academic, personal and professional opportunities. Moreover, the interview showed that the majority of respondents associated effective communication to the development of the four language skills.

Although 32% of those surveyed assured they were able to complete a task requiring interaction, using the target language successfully, the majority of participants also admitted that fluency and organization of ideas in L2 represented a problem. In relation to the most simple and the most difficult tasks requiring interaction, the majority of students indicated that participating in short conversations, including every day and notional-functional language, is more feasible than answering and asking questions. These results were coherent with other responses, as 55.1% of students admitted that they spent more time answering questions than formulating them when interacting. Indeed, the majority of participants (56.3%) also accepted there are psychological barriers, which affect their ability to interact, mainly because of their lack of confidence and shyness. They suggested that these psychological barriers might be overcome if they work on tasks, which foster spontaneous interaction and thinking skills.

In spite of the fact that most students (56%) failed the oral test, they looked enthusiastic to develop each task. Additionally, as students were not told they would be evaluated, most of

their answers were spontaneous, and they were not worried about making mistakes. The results revealed that assigning tasks requiring speaking about a topic, not necessarily enhances interaction, but involved learners in less traditional speaking tasks stimulating their curiosity to provide natural answers, so it is worthwhile to explore these facts deeper.

1.1.2 Justification of the problem's significance

After analyzing the subject responses, it was evident that students' oral interaction skills might be improved by implementing stimulating tasks, which provide them with opportunities to exchange their ideas fluently, building up their confidence and monitoring their progress.

According to Knight (2015) nowadays, the ability to communicate in English represents a great benefit to many organizations, even those who do not use English as an official language. Particularly, companies making business internationally appreciate employees who speak English as a first or second language and perceive their ability to use it in the workplace as very valuable.

Furthermore, Barbosa et al. (2017) claim "there is a gap between the skills developed at the Universities and the ones required in the workplace" (p. 31). The authors state that in the literature, transferrable skills or generic capacities include work planning, problem-solving, information management, communication technologies, personal relationships development, oral communication, creativity, innovation, and continuous learning. In the same way, the authors claim that those skills are strongly associated with self-regulation, self-motivation, self-confidence, and cooperative work. These views are relevant and coherent with the world changes we are facing.

Considering that the participants of this project have been immersed in a lecture-based context, the PBL approach intends to move them gradually to a more student-centered environment, encouraging them to use their creative skills, gaining awareness to reflect on their performance and to self-regulate their learning. Besides, and thanks to the flexibility of this approach the tasks can be easily adapted according to the particular goals of each group. In this perspective, this study deals with a common problem in the ESL classroom, collecting useful information to carry out future research on this issue, according to the global transformations in academic and professional settings.

1.1.3 Strategy selected to address the problem of the study

To address the issue of this research project, the problem-based learning approach (PBL) was selected. As stated in the introduction, this approach goes beyond the traditional teaching procedures, encouraging students to work in different kinds of projects depicting their own reality or social context.

This strategy was chosen after examining the principles and guidelines suggested by the Ministry of Education in Colombia, stating that "the ability to solve problems enhances social learning and cooperation skills, which together with the capacity of communicating and negotiate are considered 21st-century skills." (Ministerio de Educacion, 2016, p. 35) These skills comprise seven categories: critical thinking and problem-solving, creativity and innovation, collaboration, teamwork and leadership, cross-cultural, understanding, communication and media fluency, computing and ICT development. Additionally, the suggested English Curriculum for secondary schools released by MEN proposes to transform the English language teaching and learning by integrating tasks, projects and problem-solving to the curriculum, while

improving students' linguistic skills, the settings, the materials, and the strengthening of institutional, regional and national aspects to foster diversity.

Armitage et al. (2015) state that problem-based learning promotes interaction in the classroom, keeping learners talking to each other, fostering autonomy, and a cooperative environment. Thus, this approach exhorts students to be active participants of their learning and to solve problems from different perspectives by respecting the difference and promoting reflective learning, which is another purpose of the National Policies in Colombia.

1.2 Research question(s) and objective(s)

1.2.1 Research question

- What effect do creative problem-based learning (PBL) tasks have on undergraduate students' oral interaction skills, and on their self-regulated learning?

1.2.2. Objectives

- To foster undergraduate students' oral interaction skills through the integration of Problem-Based Learning (PBL) and creative tasks.
- To describe the connection between creative problem-based tasks and self-regulation learning.

The research project presented in this paper intended to identify the effect of creative Problem-Based Learning (PBL) tasks on the students' oral interaction skills, and on their self-regulated learning. The first one refers to the students' ability to participate in communicative exchanges while solving problems creatively, and the second to their capacity to take control of their own learning process to develop independence.

The strategy selected is coherent with the objectives established in this study as well as with the principles suggested by the current National educational policies in our country, which advocate going beyond the traditional teaching and learning approaches to foster reflection, creativity, and a student-centered environment.

Chapter 2: Literature Review

One of the biggest challenges in the EFL classroom is to encourage students to use the language they are learning with communicative purposes, especially to interact with each other. Unfortunately, as stated by the ESL literature, the lack of linguistic resources, the psychological barriers to developing self-confidence and the teacher-centered environments limit students' oral production. Although, along the time several teaching approaches have dealt with this problem, it still represents a trial for English language teachers and English language learners. With this in mind, and considering the objectives of this research, this chapter defines the five constructs of this study: constructivism, self-regulated learning, problem-based learning, the twenty-first-century skills, and oral interaction.

2.1 Theoretical framework

2.1.1 Constructivism

According to Jenlink & Kinnucan (1999) constructivism is the conception that learners play an active role to construct their knowledge, as it is not fixed or independent to the learner, but it takes place, regarding their experiences and ideas. Additionally, Li (2011) states that a constructivist oriented methodology in the classroom fosters real-life communicative situations and help students to improve their speaking skills, learning by doing, learning by using the language, by solving problems and by interacting, while applying and adapting their self-constructed knowledge.

These notions exhort researchers, administrators, and teachers to think about the relevance of this theory to renew the traditional teaching approaches, reflecting on the importance of engaging students in their learning process, so that they find extra opportunities to

interact, cooperate and create, making learning more effective, as explained by Bruner (1994) knowledge takes place only when it is discovered by the learner because discovery assures understanding. He claims that "mere" learning is usually forgotten as it tends to be outward and non-transferable, consequently knowledge and learning occurs when learners construct understandings, reformulating and elaborating previous knowledge.

In the field of language learning, constructivism, which emerged at the beginning of the 18th century, has always represented a challenge because of the typical lectured-classroom environments, which are mainly organized for lecturing, limiting extra practice. In this regard, is necessary to better understand this theory and its applications, as "education is not an affair of telling and being told, but it is an active and constructive process" (Dewey, 1916, p.38)

To begin with, and in order to examine the way a constructivist philosophy is conducted in foreign English language classrooms, it is necessary to understand the differences and similarities between cognitive constructivism and social constructivism. Individual or cognitive constructivism was a reaction to behaviorism, claiming that cognitive processes are better constructed whether learners are challenged to discover answers by themselves. According to Piaget (1956) teachers may mentor students but, finally, they will discover the answers on their own, once discovery has taken place, learners will be able to organize the existent information or placing the new into schemes or even transforming knowledge.

In contrast, social constructivism emphasizes that learning takes place when it is built on the meaning of social interaction within cultures and languages; therefore, it is learner-centered bearing in mind both the social environment and the social interaction. Vigotsky, (1978) states that consciousness and cognition are mental processes resulting from the product of socialization.

Regarding the importance of transforming the current teaching classroom into a more student centered-environment, it is vital to incorporate pedagogical strategies, which involve students actively in the learning process, and help them to develop cognitive and social skills in a balanced and effective manner. In light of this, the Nobel Prize in Physics, Wieman (2014), points out that it is time to renew the traditional teaching methods, especially in higher education; exhorting learners to reflect on their understandings, and providing them with effective feedback, as they need to devote more time to processing, applying, answering questions, completing worksheets, and discussing problems than to memorizing.

Additionally, taking into account the research question and the objectives of this study, the creative problem-solving tasks designed for participants need to be coherent with the characteristics of constructivist learning environments; which according to Jonassen (1999) provide multiple representations of reality avoiding oversimplifying the real world, emphasizing on knowledge construction, fostering meaningful, authentic communication, and real-world settings to self-regulate learning as well.

2.1.2 Self-regulated learning

Zimmerman (1989) argues that self-regulated learning refers to the degree that students have to be active participants in their learning process, so long as developing their metacognitive, motivational, and behavioral capacities by receiving a fair guidance from instructor, but directing learning to acquire knowledge by themselves, and using specific strategies to achieve their goals. Zimmerman & Martinez-Pons (1988) explain there are three strategies learners should follow to develop independence: *self-regulation strategies, self-efficacy perceptions, and commitment to goals.* The first is essential to process and organize information, requiring memory aids; the

second, as stated by Bandura & Cervone (1986) requires organization, determination, and self-confidence to implement a task; and the third refers to the rewards learners receive after completing it.

In this sense and regarding the objectives of this research, providing students with opportunities to improve their speaking skills by solving problems cooperatively, exhorts them to reflect on their own performance, identifying the strategies required to accomplish an oral task, their strengths and weaknesses when interacting each other, as well as their willingness to be creative, innovative, and to believe on themselves. According to Pajares (1996), it is vital for self-regulated learning, as students need to be enthusiastic, and persistent to achieve a challenge. From this perspective, problem-based learning becomes a suitable learning approach to foster self-regulation in the classroom, as it is challenging, dynamic and well-integrated, inspiring students to play a proactive role, and strengthen their awareness.

Paris & Paris (2001) also point out that problem-based learning fosters reflection, as students use their knowledge to solve the problems raised, working cooperatively, assessing the effectiveness of the strategies applied to achieve a task, and monitoring their own performance. This notion is also consistent with the speaking tasks developed in this study, which focus on helping learners to improve their interaction capacity.

2.1.3 Problem-Based-Learning

Problem-based is an approach, which has proven to be effective to stimulate students to take an active role in learning, enhancing motivation and autonomy. According to Barrows (1996), PBL is the resulting learning from a process of working and solving problems, fostering student-centered environments, cooperative work, and problem-solving skills, while new

information is acquired, and teachers act as facilitators. Additionally, Levin (2001) states that problem-based learning engages students to offer solutions, thinking critically, developing self-confidence to explore the language, and share their views regularly, which may improve their speaking skills.

In light of this, and after regarding the research problem, this approach is suitable to enhance oral interaction, vary the lessons, and observe the participants' performance, as well as their reactions when they are placed in challenging learning situations, which require using the foreign language, while cognitive, social and self-regulation skills are developed. Moreover, PBL is a hybrid approach for learning, which exhorts learners to construct knowledge, as asserted by Tobin & Tippins (1993), PBL mediates between the cognitive and social constructivist theories overcoming their dilemma as " knowledge is personal constructed and socially mediated" (p. 224).

Regarding the objectives of this study, it is necessary to mention the advantages, and the drawbacks of this approach in order to determine the goals of the tasks and anticipate possible problems. Engel (1997) argues that the key features of PBL are related to the cumulative, integrated, progressive and consistent role in the process of learning. The teacher enculturates the learner into a specific community of practice, using an explicit process and sequential steps to help learners to identify the problem, looking for information, synthesizing and offering a solution. Consequently, it increases motivation and autonomy. In addition, Newman (2008) assures that the effectiveness of this approach lies in the fact that it increases cognitive development, it is innovative and affect positively students' learning styles and promote more desirable attitudes toward practice, fostering student-centered-learning.

The literature states that PBL integrates three developments: cognitive, metacognitive and personal. Newman (2008) summarizes these three focuses as depicted in Figure 1.

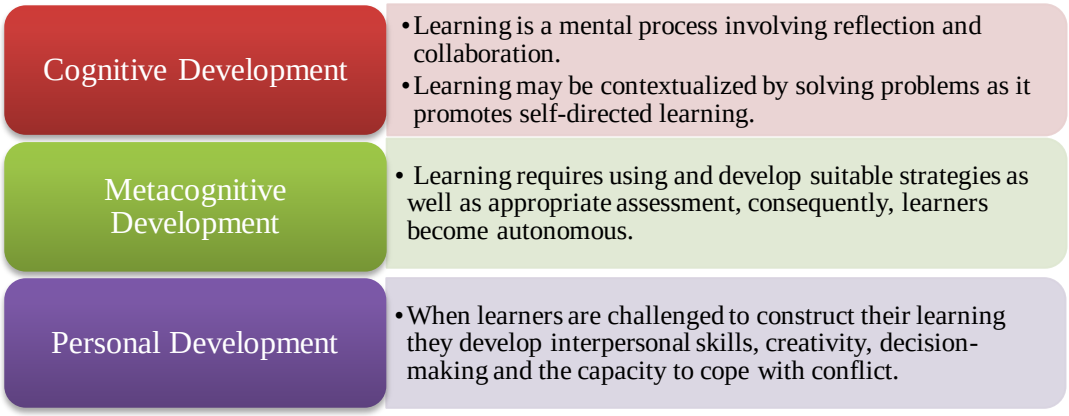


Figure 1. The three focuses of PBL by Newman, (2008)

Unfortunately, PBL is not suitable for beginners as its application in the classroom may require that students have reached certain independence to produce the target language. Additionally, most learners tend to use their mother tongue while they are working on the problem or even they expect the teacher to solve it for them. (Matthews, 2007)

To overcome these limitations students need to be guided, using versatile and flexible strategies, Field (2019) suggests thinking aloud, formulating questions, breaking a topic into parts, using graphic organizers and mind maps, creating opportunities for correction, and fostering discussion. These suggestions are also coherent with the high order thinking levels proposed by Bloom (1984) as it encourages learners to create, evaluate, analyze, apply, understand, and remember.

Despite all the boundaries, this methodology is appropriate for this study, because PBL opens a door to creativity, as teachers can enrich, vary, and renew their pedagogical strategies to raise the problems, while learners are challenged to propose thoughtful and creative solutions. In this respect, Qvortrup (2014) defines PBL as a “creative learning process, enhancing common

creation, and creative thinking". (p. 12). Additionally, Runco (2004) states that creative thinking encourages learners to solve problems as it is self- explorative, self-expressive and aesthetic. In this vein, it results in an appealing exploring area, specifically in lecture-based classroom environments, because there is a need to educate future professionals to be innovative problem-solvers, who express their ideas and interact to each other, according to the challenges of the current world; which implies renewing and adapting the pedagogical strategies in the classroom.

In this respect, Richards (2015) assures that the role of the creative process in PBL is to reconcile individual and collective aspects of innovative problem-solving. Thus, when learners are engaged in a task requiring work together, they become aware of collaborative teamwork; opening their minds to explore knowledge and challenge themselves. Interestingly, Runco (2004) asserts that creative thinking is not available to some particular minds, but all human beings count with the mental capacity to be creative. However, the author clarifies that "although some people have high levels of intelligence and low levels of creativity, no one getting high levels of creative potential possesses a low level of intelligence."(Runco, 2004, p. 2)

All these views are coherent with the principles and guidelines proposed in the current Suggested English Curriculum for secondary school, stating that "the development of social learning and cooperation skills, which together with the capacity of communicating and negotiating are considered 21st-century skills." (Ministerio de Educación Nacional, 2016, p. 35) With this in mind, the exploration of the theoretical, social and pedagogical benefits of PBL in the ESL classrooms and the way creativity unfolds with this approach, might be helpful to determine the impact upon undergraduate students' oral interaction, and upon their self-regulated learning.

2.1.4 Twenty-first-century skills

Delors (1998) states that twenty-first-century skills emerged from the approval made by the Internal Commission of Education and UNESCO to promote life-long learning. Both organizations agreed that education should be built upon four pillars: "learning to know, learning to do, learning to live together, and learning to be." (Chu et al.2017,.p.18). Nowadays, thanks to the advancement of technology and communication, these pillars (now called transversal competencies) were revisited and reformulated following three important frameworks. The first of the fourth pillars are based on the organization of economy and cooperation, the second on assessment and teaching; and the third is based on the NGO Partnership for 21st Century Skills, especially in the field of information and technology. In relation to the fourth pillar, Chu et al. (2017) mention three skills sets: learning and innovation (core subjects, critical thinking and problem-solving, communication and collaboration, creativity and innovation), digital literacies (information literacy, media literacy, information, and communication technology), and life career skills (flexibility and adaptability). Taking into consideration this research aims to explore the effect that creative problem-based tasks have on the students' oral interaction skills, and on their self-regulation process, it is also necessary to understand the differences and interchangeability of creativity, creative thinking, and divergent thinking.

Creativity is defined by Saebo, McCammon & O'Farrell (2016) as a mental condition in which all of our intelligence are involved, requiring seeing, thinking and innovating our contexts and the states to promote it. In addition, Robinson (2015) states that creativity requires passion, discipline, and control because it is a discovery-oriented skill, which fosters designing, innovation and imagination, as well as critical thinking, and critical judgments in order to determine the quality of what is created. Both definitions exhort us to reflect on the fact that

creativity is essential for learning, as it may help learners to develop awareness and self-efficacy, awaking their curiosity, intrinsic motivation, organizational skills, and autonomy making the learning process more meaningful and engaging.

However, Piawa (2010) asserts that at some point critical thinking and creativity differ each other, because the first produces logical ideas, while the second one produces non-conventional or original ideas, using imagination to find new alternatives or solutions to a problem, even though the author remarks that both are undoubtedly required in problem-solving. In this connection, it would be interesting to explore the balance between critical thinking and creativity when students are asked to solve a problem, as well as their convergence, to determine whether students are or are not willing to think outside the box.

In regards to divergent thinking, Runco (2007) explains that it emphasizes the mental cognitive procedures, which results in atypical thinking, consequently, a single problem might be analyzed from multiple perspectives. Although creative thinking and divergent thinking are similar terms, as both encompass the production of original ideas, enhancing positive stimulus and innovation, there are some slight differences. Robinson (2005) states that divergent thinking is not an equivalent of creativity, but an essential skill to create, interpret and stop thinking traditionally, it is a possibility to see numerous solutions. In contrast, creativity enhances positive stimulus and innovation.

Having a closer perspective about the complexity of the creative process and the way it is connected with the pedagogical purposes, improves its application in the classroom, making the learning process more dynamic, stimulating learners to develop their oral skills while solving problems; constructing their knowledge, and reflecting on their performance.

Lastly, regarding the creative process, is essential to explain the four stages of creativity suggested by Wallas (1926), and their connection with problem-solving tasks. (See figure 2)

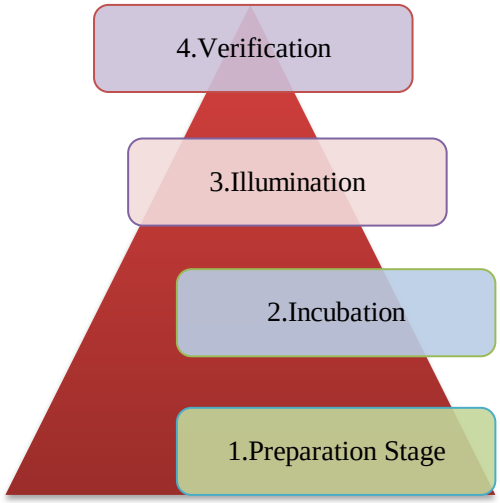


Figure 2. The four stages of creativity proposed by Wallas, (1926)

According to Wallas (1926) firstly, a problem is consciously recognized, represented, observed or studied (preparation stage). Then, during incubation, the thinker evaluates the possibilities while presenting the problem consciously. Thirdly, the incubation is followed by illumination, characterized by a "Eureka" effect, and fourthly, conclusions that lead to the possible solution of the problem are drawn to finally transform the unconsciously formulated into a conscious task (verification). Understanding and applying this sequence is essential for designing the creative problem-based tasks during the pedagogical intervention, and for students to reflect on the stages required to solve them while working cooperatively; which nurtures appropriate learning environments to foster oral interaction, creativity, and the development of intra and interpersonal relationships, which are essential to becoming independent learners.

2.1.5 Oral interaction

Rhonda & Jenefer (2014) argues that oral interaction is a communicative process, taking place between two or more speakers, taking turns to construct meaningful exchanges. It is an integral part of human communication, and it is essential for learning a language, playing a significant role in pedagogy.

Before going deeper into this notion, it is important to look back to the theoretical foundations of the communicative approach, as oral interaction is rooted in its principles. Communicative language teaching emerged in 1970, as a methodological alternative for teaching English as a foreign language, emphasizing on the development of the four language skills (speaking, listening, reading, and writing), the three language components (pronunciation, vocabulary, and grammar), and the use of language as a resource for meaningful communication, as stated by Richards & Rodgers (1986) "the primary function of language is for interaction and communication."(p.16).With this in mind and considering the current world demands requiring professionals who use foreign languages properly, developing effective strategies to foster the practice of oral interaction skills become essential. In this regard, Rhonda & Jenefer (2014) assert that students need oral interaction to to succeed socially, academically and vocationally, and that is why it is a crucial part of the curriculum. Some features of oral interaction entail negotiation of meaning, spontaneity, disfluencies, repetition, and redundancy.

The authors point out that in the classroom, oral interaction occurs between teachers and learners or among peers, and it has a variety of purposes such as sending and receiving messages, making agreements, giving opinions, or discussing specific topics. However, it is a complex process, which is usually affected by the age and the personality of the learners, along with affective factors and motivation.

To go deeper into the understanding of oral interaction, Ellis (2008) classifies it into two categories; interpersonal interaction and intrapersonal interaction. The first one occurs during face-to-face communication and it is required to interact personally, then the intrapersonal operations involved in language acquisition are triggered. On the other hand, intrapersonal interaction involves mental processing mainly. Consequently, when both procedures are connected language, acquisition takes place.

With the framework of this criteria, and as aforementioned, PBL is a challenging approach that can be easily adapted and enriched to foster interaction, while complex contents are taught, and the high order thinking skills (creating, evaluating, analyzing), and low order (applying, understanding, remembering) proposed by Bloom et al. (1984) are developed. In this respect, Ur (1996) also states that solving a problem increases students' oral participation and motivation, as they get involved in the tasks easily, stimulating imagination, emotions, and growing up intellectually and morally.

The five constructs here described are coherent with the research objectives and are interrelated to answer the research question, because of their integration foster self-regulation, encouraging students to reflect on their performance, and assessing their progress in terms of speaking, while thinking creatively to solve a problem; which is vital for self-constructing their knowledge.

2.2 State of the art

This section presents some research in the field of problem-based learning, self-regulation, creativity, and oral interaction, in order to analyze their contributions and limitations; demonstrating that the research question is reasonable, and deserves to be explored deeply to

identify previous gaps while understanding the interconnection of variables to foster oral interaction and self-regulation.

In regards to PBL, Muñoz (2017) carried out an exploratory study to determine the impact of this approach on higher-order skills, transferable skills, the research knowledge, social skills, and self-management. The participants were 54 students enrolled in the ELT program at a regional university in Chile, and they worked in teams to solve local contexts problems, such as racial, religious, and sexual discrimination. The study revealed that PBL promotes the execution of challenging tasks, encouraging learners to synthesize information while dealing with the solution of a problem. More than two-thirds agreed that PBL contributed to the self-regulation of academic work and related skills. However, not many participants think this approach fostered personal skills or contributes significantly to their future role as teachers.

Following these results, it is possible to state that problem-solving tasks benefit learners in terms of motivation, and creativity, but not always fosters the development of certain skills, requiring designing, cooperating, interacting, or which are applied in other contexts (transferrable skills). This fact is visible when students are presented with a problem, and they address their efforts to find out a quick solution, instead of taking advantage of the whole process; therefore, there is a need for exploring pedagogical strategies, which keep students engaged, while they interact about current world issues, and the social transformations that globalization has brought, fostering self-regulation at time.

In Colombia, Peña & Santos (2017) carried out a study to analyze the role of teachers when applying problem-solving activities in a partially flipped classroom. Twenty-six students enrolled in the sixth grade of a private school in Santander participated, and the researchers followed an action-research model, using different instruments to validate data such as pre-

assessment, post-assessment, teacher's journals, and interviews. Findings revealed that PBL improves learners' independence, while a technological platform provides them with opportunities to interact.

Consequently, it evidences that PBL encourages students to exchange ideas, and to gain awareness about their learning; in terms of making decisions, thinking about a strategy, planning a sequence, or selecting the most suitable solutions according to the context or the options provided. Cooperative scenarios also exhort teachers to examine learners' creativity in designing or observing their motivation to go beyond the problem and taking risks to sort it out, making their talents, and thinking skills more visible, which is an interesting area to explore, especially to determine its incidence on self-regulation.

Additionally, analyzing the effect of problem-based learning, and self-regulation in a flipped classroom environment, Çakiroğlu & Öztürk (2017) found that a group of mechatronic students, enrolled in a programming Language Course, improved their planning skills, willingness to set goals, structuring tasks, managing time, as well as their self-efficacy, and self-evaluation skills, through problem-solving tasks, which require interacting and using technological tools. In the same way, when examining the effects of self-regulation on the spoken communication of a group of 91 undergraduate students enrolled in an Economics class, Aregu (2013) reported that self-regulated tasks requiring goal setting, planning, recording errors, self-evaluating, self-talking, cooperative work, and changing learning environments improve the oral learners efficacy, making the learning process more meaningful and enjoyable. These findings are tentative to continue exploring the implementation of additional strategies in the EFL classroom, specifically when working with higher-level students or in lecture-based contexts.

In regards to creativity, Avila (2015) conducted a study to improve students' oral and written communicative skills through creative tasks. The intervention plan took place in a private English teaching institute in Colombia and eleven young female and male students participated. The researcher used an action model to plan, to act and to observe the pedagogical experience, following a systematic procedure to implement the activities. Findings revealed that the creative tasks helped learners to improve their performance in those language components, and to design creative products, making the learning engaging and effective. The author concludes that the experiment also benefits teachers, as they improved their pedagogical practice to expand their teaching horizons.

These outcomes are meaningful, regarding the importance of looking for innovative teaching and learning approaches, resulting in an appealing issue to look into, especially because of the demands of a rapidly changing world, which requires that teachers renew their teaching styles. Therefore, identifying specific creative teaching strategies for integrating them into PBL is useful not only to foster a real-communicative practice in an academic context but also to encourage learners to monitor their performance gradually, as well as inspiring educators to move beyond the syllabus and the contents established in the textbook. Certainly, whether is expected that students develop their creative skills, it is vital for teachers to reach higher levels of creativeness too.

Researching on creativity, Albert & Kormos (2004) found that creative tasks help students to perform their language skills and the quantity of talk, but there is no clear evidence about the linguistic measures of accuracy to identify which specific tasks are beneficial or relatively weak. Additionally, Ottó (2006) carried out a study to test the students' creative skills of a group of high school learners to find out whether creative tasks involving role-playing and

stimulating senses help them to perform better in communicative language contexts. The findings revealed a positive correlation between the test scores and the participants' grades in creative narrative tasks. Although both studies show that creativity is an effective strategy to enhance oral interaction, it would be worthwhile to identify which ones are useful to incorporate in lecture-based environments, or in higher education, especially when teaching complex issues.

In this respect, McDonough, Crawford, & Mackey (2015) explored the relationship between student creativity and PBL with fifty–five undergraduate students who were assigned with two different tasks, the first consisted of a three-picture completion/constructing task, and the second of interacting each other to solve a dilemma. The findings revealed that both activities helped learners to put into practice their L2 verbal abilities; during the first activity, participants showed emotional expressiveness, movement or action, humor and visualization, and the second enhances reasoning, predicting, and getting extra practice to understand grammar. Although this study supports the correlation between creativity and the progress in the student's performance considering narrative demands and interaction patterns, it would be important to analyze whether discussing or solving a problem in pairs or as a part of a group affect interaction.

Wang (2019) investigated the influence of creative tasks to foster negotiation of meaning in oral communication, by recruiting thirty-six undergraduate students in Japan. After testing their speaking and writing skills, they were assigned with four oral communication tasks; two creative tasks, consisting of exploring their insights and justifying their ideas, and two controlled tasks requiring providing answers based on specific options. Both tasks were developed with one decision-making, and one opinion exchange task. The research followed a three-stage procedure to implement them: topic activation, a group discussion, and a group

presentation. Findings revealed that creative tasks stimulate interaction and foster oral communication and negotiation of meaning, while controlled tasks challenge them intellectually.

After researching on divergent thinking and creativity, Runco (2004) asserts that there is still a lot of comfort in most educational settings, which follow traditional teaching strategies, mainly because students perform tasks, and take tests requiring using convergent thinking, consequently, not many institutions are willing to invest on research on creativity. Considering times have changed, and students are not learning in the same way that most of their teachers; exploring with different resources in the classroom to renew the traditional teaching approaches will provide data to analyze students' performance when they are moved beyond their comfort zones, and when they are provided with extra materials.

Dudek, Strobel & Runco (1993) also examined the divergent thinking skills of 1445 elementary students enrolled in different high schools in the United States. They found that socioeconomic status and the type of instruction received affect creative thinking. It was also reported that the immediate classroom environment plays a determinant role in creativity. Additionally, Wallach & Kogan (1965) that creativity is inhibited by typical classroom conditions, and test-like activities, but is significantly released when tasks are presented in an attractive and playful way. In this perspective, Runco (2004) asserts that creativity enhances the effectiveness of instruction and the teaching style, which is vital in current teaching-learning environments, as the role of learners is limited to listen to the teachers' instruction. Going deeper into this issue, certainly provides insightful strategies to progressively turn lecture-based classrooms into student-centered settings, where better scenarios to interact and self-regulated learning are offered.

In light of this, Ashton, Claire & Chartrand (2009) tested the hypothesis that behavioral mimicry enhances creative thinking when interacting, conducting a study with fifty-eight participants, who were assigned with experiential opportunities in which they were either mimicked or not mimicked by a partner during five minutes conversations. Findings reported that being mimicked develops convergent thinking, enhancing collaboration, while not being mimicked enhances divergent thinking, fostering improvisation. Researchers concluded that when participants feel familiarized with each other, it affects their behaviors and feelings, resulting in innovation and in better creative thinking styles. In that view, identifying the type of creative task carried out in lecture-based classroom is useful to explore the effect of pair work, and group work on students' interaction, their willingness to think outside the box, and to express their views spontaneously; improving EFL teachers' pedagogical practices, and fostering reflection, as Jackson (2014) states creativity is undervalued in higher education, but it is intrinsic to human character, so professionals need to be creative to get success in an unpredictable, changing world.

Concerning oral interaction in our local context, Riaño & Espinoza (2017) analyzed the effect of socio-cultural interaction strategies in students' negotiation of meaning using task-based activities. This study was carried out with 18 ninth-grade students from 13 to 16 years old from a public high school. The intervention consisted of implementing SI (socio-cultural strategies) for learners to plan the actions before presenting them to oral interaction procedures. These strategies were based on comprehending, manipulating, producing, and interacting using the target language. The authors found that the use of SI strategies increased participants' confidence, as they were able to plan communicative tasks effectively, and planning procedures making oral interaction practical. Participants demonstrated to be more active and made efforts

to communicate, also they were able to use paralinguistic devices to negotiate meaning such as mimics, sounds, and gestures. Exploring oral interaction in the classroom is also helpful to get an overview of the fluctuations in speaking when students interact with a partner, and to observe the opportunities they might be provided with to self-regulate their performance, identifying their strengths and weakness when exchanging ideas, and the creative resources they use to cope with a problem.

Regarding the strategies to improve students' oral interaction, Hurtado (2013) conducted an exploratory study with thirty-two, thirteen-year-old students enrolled in the seventh grade of a public high school, to determine if guided collaborative speaking tasks help them to improve their oral skills. The selected strategies included different tasks, based on collaboration, self-direction, discussions, pictures sequencing, sharing stories, making presentations, role-playing, and a pre-test/post-test. The researcher found a significant improvement in the participants' confidence, and in their fluency, concluding that students perform better in those tasks requiring presenting a general idea about a specific topic, but they feel more pressure in those activities including oral discourse. Finally, in examining the implementation of PBL to enhance oral communication using contextualized materials, Barrero (2018) carried out a study with twenty-one students enrolled in tenth grade. The participants were provided with two workshops focused on specific local problem situations, which were familiar for them, and findings revealed that real-life problems, engage learners in relevant situations, fostering oral communication, and self-assessment.

In conclusion, after analyzing the evidence provided by the existing research the question raised is reasonable, as it contributes to close the gap of looking for effective strategies, which turn lecture-based environments into more creative student-centered contexts, exhorting EFL

teachers to use PBL for teaching complex issues to undergraduate students, while helping them to develop independence as well as improving their own pedagogical practice, especially in those settings where opportunities for oral interaction, self-regulation, and the development of creative skills are limited.

Chapter 3: Research Design

This chapter describes the type of study, the context, the participants, and the role of the researcher, the data collection instruments, as well as the qualitative and quantitative procedures to collect data, and the ethical considerations to carry it out.

3.1 Type of study

The type of study the researcher conducted was action research. According to Carr & Kemmis (1986), action research is a form of collaborative self-reflective inquiry, which encourages researchers to analyze, justify, and improve social or educational practice, providing solutions to problems. Additionally, Cohen et al. (2012) state that action research is a remarkable method, which fosters change and improvement after following certain procedures to solve a specific problem, and examining the effects of the intervention.

With this in mind, action research is suitable to reach the objectives of this study, because it aims to analyze the effects of creative problem-based learning tasks to foster oral interaction and self-regulation on intermediate level students (B2). After implementing the pedagogical strategy, and analyzing the interconnection among the variables, the findings answered the research question and reported relevant data about those scenarios, which enhance a student-centered approach.

Nunan and Bailey (2008), states that action research turns into a powerful tool, for professional teachers' development, as they commit researchers into an exhaustive reflection of ideas, their application, and their experimentation through the practice and the critical evaluation of the outcomes. Similarly, to other types of researches, action research includes posing questions, collecting data, analyzing and interpreting, which bring change, and transform the

pedagogical practice. They also explained this type of research is cyclic, systematic, and iterative. In this sense, this research included these stages, which are depicted in figure 3.

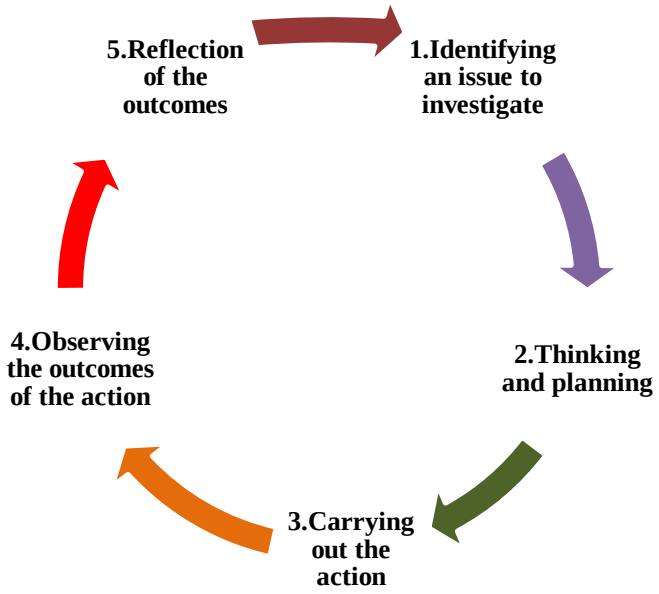


Figure 3. Action research cycle by Nunan and Bailey, (2008)

During the first stage, the researcher pinpointed the problem and the objectives of the study, and then the researcher started planning and designing the research, selecting the most suitable approach and strategy to reach the goals. In the third stage, the researcher carried out the actions to implement the pedagogical intervention simultaneously in both groups and collect the data. Afterwards, the researcher analyzed the outcomes using several artifacts such as pre-assessment, post-assessment, field notes, teacher journal, students' self-assessment checklists, and written interviews. Finally, the researcher reflected on the results to determine the effectiveness of the experiment.

3.1.1 Participants

The participants of this study were forty-five undergraduate students whose ages ranged between 18 and 20 years old, and who were enrolled in different academic faculties such as law, social sciences, medicine, business administration, and environmental engineering. They were placed in an intermediate English level class (B2) according to the Common European Framework (Council of Europe, 2018).

The aim of the course was to help them to develop their communicative competence while integrating the four language skills, speaking, reading, listening, and writing. They took class six hours a week in two class sessions and they should work independently to prepare homework, presentations, and oral and written tests. Although they have all taken English classes before, not all of them were at the same skill level, which affected their motivation. Furthermore, they were enrolled in different programs, and most of them required learning some strategies to take more responsibility and autonomy.

3.1.2 Researcher's role

Due to the type of study, the researcher performed two roles, the first one consisted of planning the lessons, preparing the materials, and teaching each session, the second one, was designing and administering the data collection instruments to register and organizing the information. Once the topics were introduced to the students, they were asked to complete suitable tasks, working individually and cooperatively. Then they were presented with a problem and they worked in small groups thinking about suitable and creative strategies to solve it.

As a teacher, I scaffolded the learning process, so that learners were equipped with the appropriate content and linguistic resources, so that they were able to understand every task, supervising and assessing their performance, as well as providing them with feedback. As a researcher, I observed and registered data in my field notes, assessing objectively the participants' behaviors, and reactions in each step of the research cycle.

Making this distinction clear was essential to avoid unreliable or biased results, as both roles required a thorough intervention to analyse the pedagogical components of the lessons and to register the impartiality of the findings.

3.1.3 Ethical considerations

According to Kelly (1989), "action research is especially sensitive to experiment ethical dilemmas because researchers must be able to overcome any temptation to lie".(p. 100). Additionally, Hopkins (2008) states that it is important for researchers to identify the difficulties they experience while researching is taking place in order to deal with them as well as maintaining the confidentiality and personal respect. Some of the principles to guide action research suggested by Kemmis, Mc Taggart & Nixon (2014) consists of informing relevant persons, committees and authorities about the research process asking for their approval; involving participants in the process, taking into account their feelings, wishes, expectations and responsibilities; obtaining explicit authorizations before using quotations, pictures, audios and video recordings and maintaining reliability.

The ethical considerations for this study involved institutional and personal aspects, consequently, consent letters to implement the study were sent to the director of the program,

and to the participants who took part in this study. Furthermore, the identities of the students were respected assigning them a code.

Regarding the type of study, the researcher performed the roles of researcher and class instructor but making a clear, honest and objective distinction between both since the beginning of the project.

3.2 Data collection instruments

As mentioned previously, the selected instruments to conduct this study consist of a pre-assessment, a post-assessment, a teacher journal, field notes, a student's self-assessment checklist, and written interviews. All these instruments were helpful to register and analyze the students' reactions, as well as their progress accordingly to the objectives of this research, while the exploration and the intervention plan were taking place.

Table 1 presents the main characteristics of each instrument and the dates they were implemented.

Table 1. Data collection instrument

Instrument	Objective	Type of instrument	Implementation
Pre-assessment	To identify the strengths and weaknesses of participants when solving problems, interacting with each other and using their creative skills.	Qualitative Quantitative	March 7th (Group 1) March 19th (Group 2)
Post-assessment	To identify the changes or/and variations in the strengths and weaknesses of participants when solving problems, interacting with each other and using their creative skills, after the pedagogical intervention took	Qualitative Quantitative	April 26th (Group 1) April 28th (Group 2)

	place.		
Classroom observation	To observe the participants' reactions, behaviors and actions during the implementation stage.	Qualitative	From March 8th to April 28th
Field notes	To register the reflections of the pre-assessment, the lessons, and the post-assessment by writing down objective comments about what was observed before, during and after each class.	Qualitative	From March 7th to April 28th
Self-assessment Checklist	To provide learners with opportunities to evaluate their performance during each lesson to analyze their responses, regarding the constructs of the research.	Quantitative	At the end of each session
Written interviews	To gather information, data, opinions and comments of the participants about the lessons, the procedures and the tasks assigned and the constructs of the research	Qualitative Quantitative	From March 8th to April 28th

3.2.1 Descriptions and justifications

3.2.1.1 Pre-assessment and Post-assessment

One of the most common and reliable techniques to collect data and to measure participants' achievements is to design pre and post-assessment instruments. They are useful to determine the students' knowledge and performance before and after the pedagogical intervention.

Greenstein (2015) defines pre and post-assessment as a strategy taking place at the beginning of any type of instruction and displaying students' incoming knowledge in relation to teaching and learning. Moreover, designing a pre and post-assessment may provide enough

information to recognize misconceptions about a topic, raising students' curiosity and engaging learners. The author explains that this design is as valuable for teachers and researchers because it allows them to monitor students' real-time progress to adjust instruction appropriately. In light of this, the pre-test was helpful to identify the students' performance when interacting in English, solving a problem, and designing a creative product cooperatively, and the post-assessment was useful to compare and to contrast the results, determining the impact of the pedagogical intervention.

3.2.1.2 Field Notes

Phillippi & Lauderdale (2018) points out that field notes are a vital instrument in qualitative research, as they provide researchers with a detailed description of the study and key information to document data. The main functions of field notes are to remark on the environment and the type of interactions to enrich language focused-data, encouraging reflection and identification of bias, simplifying coding procedures, increasing the reliability, and contextualizing the information.

The researcher used this instrument because it allows me to observe and register participants' behaviors and reactions when they were interacting with each other, working cooperatively, and designing products. Moreover, it was useful to record relevant information about the lessons, the pedagogical strategies, and the type of questions and answers to foster interaction, as well as the type of feedback to encourage self-regulation.

3.4.1.3 Teacher Journal

This instrument was selected because it provides me with the opportunity to register data while reflecting on findings, which was useful to remark on specific details. According to Tomal

(2010), journals are very helpful tools for researchers as it is possible to observe behaviors and to make a detailed analysis of what occurs in each stage of the process, besides they are a method for recording incidents. The author explains there are different types of journals such as logs and diaries; both required that researchers observe students and make narrative recordings about the events taking place in the classroom. However, logs journals involve a more detailed description of the incidents occurring in educational contexts, whereas a diary registers personal events, entailing the performance, incidents, and feelings of the subjects.

To get trustworthy data, the researcher used both types of journals, the first (log journal) was helpful to observe the sequence of events during the pedagogical implementation; the second provided me with suitable data about the participants' reactions, their attitudes and the execution of specific tasks. The researcher included this instrument because it is practical, reliable, and helpful to reflect on the pedagogical strategies throughout the process.

3.4.1.4 Students' self-assessment checklist

A checklist is an instrument, which allows researchers to identify the participants' specific abilities, to determine the type of instruction given to students, and to measure its impact according to certain criteria. Johnson (2012) asserts that a checklist guides instruction, providing evidence of the skills covered in a lesson, consequently researchers obtained more accurate and trustworthy information, even more than the one gathered through classroom observation. According to Johnson (2012), a checklist includes specific attributes to assess the participants' progress in determining the usage of each skill and its levels of understanding.

This instrument helps me to gather data after each session in a practical manner, exhort students to asses, and reflect on their performance in terms of interaction, cooperative work, and creativity.

3.4.1.5 Interviews

Interviews are typical tools to gather and validate data as they provide participants to register their experiences, and researchers get a closer and deeper understanding of them. According to Cohen et al. (2012), an interview consists of two or more people exchanging views about a topic of mutual interest, which is the main purpose of human interaction to produce knowledge and also to remark the social aspects of research data. According to the authors, interviews are flexible data collection instruments, allowing researchers to gather information spontaneously. However, they are time-consuming, open to bias and represent some inconveniences for respondents. Therefore, careful design and clear validation procedures are required.

There are different types of interviews, but considering the characteristics of this inquiry, ten short written interviews, mixing standardized open and closed-ended questions were designed and administered, at the end of each session, and only the most relevant answers were analyzed. (See Chapter 5:) The researcher decided to include this instrument because the information was collected in a varied style, and it was possible to obtain a deeper understanding of the students' opinions, feelings, and experiences.

3.4.2 Validation and piloting

Validation and piloting play an important role in every inquiry as they determine the transparency of the data collected and the results obtained. Cohen et al. (2012) assert that validity

has always been effective to do research and to demonstrate the usefulness and reliability of any instrument. For qualitative data, validity applies ethical principles, maintaining honesty, and triangulating the information objectively. Likewise, in quantitative data, careful sampling, appropriate instrumentation, and appropriate statistical treatments are essential.

Although the authors argue that both types of data are limited by a certain degree of bias because of standard error and subjectivity, several researchers agree that authenticity is essential to get reliable data, because "they are only representations of reliability and not reproductions of it." (Hammersley, 1992, p. 170). Reliability also represents a synonym for consistency and replicability over time, the instruments, and other participants.

With this in mind, and to validate the information, two procedures were followed; firstly the researcher selected some students (different to the participants of this research) at random to verify and pilot the questions, along with another English Language teacher, and once the information was collected, the triangulation technique was applied. Cohen et al. (2012) define triangulation as a well-known procedure of physical measurement to explain the richness of certain behaviors by studying them from diverse standpoints and using quantitative and qualitative data, for this reason, the instruments described were triangulated to confirm the results.

Considering this study aimed to explore the effect of creative problem-based learning tasks to enhance oral interaction and self-regulation, the designing procedures and the instruments intended to gather information about the students' performance when solving problems in terms of communication and self-regulation. Additionally, in order to obtain reliable data, some procedures like validation and triangulation were applied. The next chapter presents the intervention and implementation of the study.

Chapter 4: Pedagogical Intervention and Implementation

This chapter encompasses specific features of the vision of language, the vision of learning and the vision of the curriculum where this study was carried out. It also describes the procedures followed to implement the pedagogical intervention cycles, the activities designed, the lesson planning and the materials used. The intervention consisted of three stages, a pre-stage, a while-stage, and a post-stage, each procedure was developed according to the principles of action research, which intends to foster reflection to transform the pedagogical practice.

4.1 Visions of language, learning and, curriculum

4.1.1 Vision of language

The vision of language in this study is coherent with the institutional philosophy of the public university where this research took place, which is rooted in the principles of the communicative language approach. This vision fosters the development of communicative competence and the four language skills to promote students' interaction while talking about their experiences, feelings, and opinions. Hence, teaching and learning strategies using authentic materials and designing challenging and motivating tasks are essential.

In this perspective, the implementation stage was planned carefully, setting up the objectives of each lesson, the assessment procedures and the selection of materials, accordingly to the communicative goals established in the curriculum.

4.1.2 Vision of learning

The vision of learning at the institution where this research was carried out is based on the fact that the main purpose of learning a foreign language is to use it with communicative

purpose, as suggested by Richards and Rodgers (1986) language is a system to express meaning and its function for interaction and communication (p. 156). This definition is coherent with the institutional philosophy, which aims to develop communicative competence through meaningful real-life communication. Additionally, Ausubel (1968) asserts that learning must be meaningful and introduce new information, thus students must understand the material presented and associate learning with their previous knowledge to integrate them effectively in their cognitive structure. (n. p)

In recent years, the institution has remarked on the importance of incorporating creative and innovative tasks as part of the methodological procedures to enhance students' learning.

4.1.3 Vision of curriculum

The curriculum of the institution focuses on the development of language input (grammar, vocabulary, and everyday expressions) and the integration of the four language skills; speaking, listening, reading and writing. According to the Institutional Statute, students must take five English levels as a requirement to graduate. Each level is aligned with the Common European Framework of Reference (Council of Europe, 2018) starting in the first level (A1) and ending in fifth level (C1) although it varies depending on the program students are enrolled in.

This document also emphasizes on the importance of the humanistic development regarding the purposes established in the institutional policies, which aim to redefine the humanistic approach since the perspective of current problems over the world and the understanding of the cultural, scientific, and technological models as well as the Economy and Globalization process. This humanistic approach is an essential component of all the curricula at the university, fostering reflection, investigation, and interculturality; integrating a social view of

the knowledge through pedagogical practice, competence and SABERES. The Minister of Education in Colombia defines SABERES as the integration of all the daily practices carried out inside or outside the institutions, which are the consequence of conscious or not conscious acts. Such integration refers "to know what, to know why, to know when, to know in what sense, to know to know, to know how to do, to know how to live, and to know how to be" (Ministerio de Educación Nacional, 2014, p.20)

Moreover, the institution is continuously working on the development of the new teaching approaches and the training of the teachers to encourage students to reach communicative competence. The vision of the curriculum also supports the implementation of innovative research projects to enhance communicative skills, cooperative work, creativity, and thinking skills.

4.2 Instructional design

In order to implement the pedagogical intervention into regular classes without affecting the syllabus of the course, the researcher planned ten instructional designs for being applied in both groups (group 1, and group 2). They were planned, accordingly to the objectives expected for the level. Each session lasted two hours and the total time allotted for the whole process was 23 hours, the sessions were firstly framed within the communicative approach set out in the curriculum of the Institution, secondly with the problem-based learning approach, and last but not least with the design of activities; enhancing creativity, divergent and critical thinking at the same time.

The implementation was planned to follow three stages: a pre-stage to administer a pre-test, a while-stage to implement the pedagogical strategy and collect data, and a post-stage to administer a post-test and analyze results. Once all the students were officially enrolled, the

researcher applied a pre-assessment lasting 90 minutes, which was useful to identify the students' oral skills when interacting with each other and their willingness to solve problems creatively. (See 6.5Appendix B:) Then, the researcher devoted ten sessions of 120 minutes to the application of cooperative and creative problem-solving tasks to foster oral interaction through group work, face-to-face exercises, and oral presentations. Initially, each session was carried out with the 30 students enrolled in the first group and replicated with 15 students of the second group. Finally, one session lasting 90 minutes was used for the application of the post-assessment. (See 6.5Appendix C:)

During the implementation, the researcher observed learners' reactions to solve simple and complex problem-based learning tasks, which require interacting in pairs, working in groups and using different stimuli to design a product by using their creative skills. The researcher introduced the ten topics and the problem-solving tasks gradually, taking into account their complexity and difficulty in terms of vocabulary and grammar.

The first three sessions were planned to help participants to get familiar with the approach of the research study. In the first one-titled "dilemmas" The researcher encouraged students to solve and discuss common problems that young adults face; in the second one "how does the brain work?" The researcher introduced the concept of creativity, challenging participants to solve a problem creatively. In the third session, students were enhanced to participate in different interaction tasks to talk about sleeping deprivation.

The next three lessons provided students with opportunities to discuss a topic, analyzing its positive and negative aspects for reflecting on their own experiences (selfie-obsession,), and for talking about current environmental problems (natural disasters: earthquakes, floods, wildfires). It is important to mention that the strategy selected for each session as well as for the

whole process consisted of routinizing participants to move them from controlled and semi-controlled practice to independent training.

Finally, in the four last sessions, participants discussed controversial topics, regarding specific and current issues, such as “workplace harassment” “crime,” “how to improve memory,” and “the peace process in Colombia.” They were also given the opportunity to select a relevant contemporary problem to discuss it with the class. After each session, students were asked to self-assess their performance, and answer some questions regarding their classroom experience.

4.2.1 Lesson planning

The researcher designed the lessons for the implementation according to the communicative approach set out into the curriculum of the institution. This philosophy intends to integrate the four language skills to promote real communication through meaningful tasks and the use of authentic materials. Larsson (2001) argues that in the classroom PBL improves students’ social skills, placing students in real-world situations where they need to use the target language for authentic communication, exchange information and negotiate to report solutions.

In this perspective, lesson plans consisted of a warm-up activity to introduce the topic, a review of the key terms and expressions, as well as the required structures, the assignment of a problem-solving group task, the elaboration of a final product to present it to the class and a short self-assessment. In order to address the research question and objectives, the lesson plans also described clearly the procedures to develop each step, setting out the aims, the materials, and including a brief reflection section to assess the lesson. I planned each session taking into

account the complexity of the topics and the language functions, in the same way, the materials were selected accordingly. (See Figure 4).

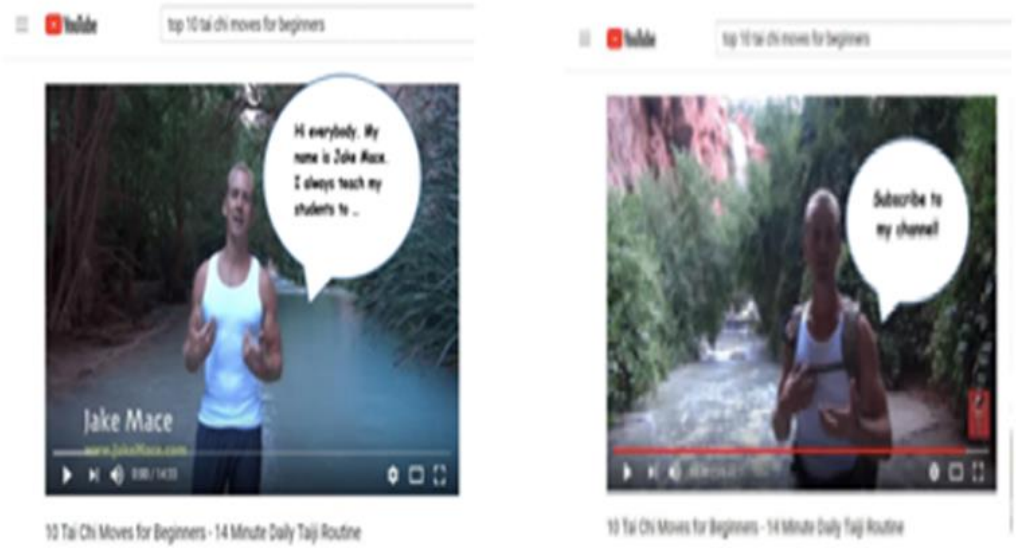


Figure 4. Handout for lesson plan and product session 9 by Mace, (2016) adapted by the researcher.

4.2.2 Implementation

This section presents the procedures the researcher applied to collect the data during the six weeks of implementation, scheduled from March to April 2018, twice per week and in single sessions lasting 120 minutes.

Regarding the vision of language and learning, the implementation was designed to provide students with opportunities to use the target language while interacting and solving problems creatively. The development of meaningful tasks was essential to design the problem-based learning tasks so that they could be easily implemented to integrate content with the language skills. Jaleniauskiene (2016) claims that PBL must encourage a live environment, reinforcing content, fostering class discussion and debates, as it aims to renovate the classroom.

As soon as all participants were officially enrolled in group one and group two, the researcher informed them about the research process through a consent letter. During the first week, the pre-assessment was applied to both classes. It consisted of a group work activity divided into 3 tasks: a matching exercise to identify some common daily problems, a short text presenting a dilemma and asking students to offer a solution, and the design of a creative poster regarding an imaginary stressful situation.

After introducing some key vocabulary and setting students up with instructions, they started working in small groups, and the researcher provided them with the required materials to complete the pre-assessment, whereas the session was observed and recorded through photos and some short videos to be interpreted later. Based on this analysis was possible to observe the students' reaction to a problem-solving task, their skills to work cooperatively, their interaction patterns, and their creative skills, along with their attitudes for working independently or following the teachers' guidance.

Through the next ten sessions (5 weeks) the pedagogical intervention with group one and group two was carried out and the information gathered from the classroom observation, the written interviews, and the students' self-checklist was registered in the field notes. Each session lasted 120 minutes and during this term, participants developed tasks requiring working cooperatively to solve a problem, interacting with each other, and designing a creative product to present it to the class. As one of the goals of this study was to observe the students' creative abilities and its fluctuationin divergent thinking skills, the researcher provided accurate instructions to all participants and a set of appropriate materials.

The activities proposed during the implementation were aligned with the goals of the syllabus provided by the Institution. According to the Common European Framework Council of Europe (2018), at pre-intermediate level (B2) students are encouraged to participate of free speaking tasks using some communicative functions, such as offering solutions to solve common problems or dilemmas, expressing their opinions about a specific topic, showing agreement or disagreement, and talking about advantages and disadvantages. Table 2 describes a detailed report of the pedagogical intervention and the topics developed during each session.

Table 2. Pedagogical Intervention

Topic	Language skills	Language Functions
1.Dilemmas	Reading-Speaking-Listening-Writing	Asking for and giving advice
2. How does your brain work?	Listening-Reading- Speaking-Writing	Expressing opinions Describing products
3. Are you sleep-deprived?	Reading-Speaking-Listening-Writing	Talking about sleeping habits Giving suggestions
4. Selfies obsession	Reading-Speaking	Expressing agreement and disagreements Interviewing a partner
5. Natural disasters	Reading- Speaking	Describing natural catastrophes Telling anecdotes using the past tense Giving suggestions
6. Workplace harassment	Reading –Speaking-Listening	Expressing opinions Expressing agreements and disagreements Giving advice
7. Crime	Reading- Speaking-	Talking about news Making decisions critically
8. How to improve your memory?	Speaking- Listening	Talking about self-improvement techniques for memory Giving suggestions

Topic	Language skills	Language Functions
9.Global problem issues	Speaking- Listening	Identifying and describing social-local problems Talking about problems and solutions.
10. The Peace Process in Colombia	Listening- Speaking- Reading- Writing	Talking about political issues Expressing opinions Talking about some relevant facts about the peace process.

In each class, students were engaged in guided and independent activities in order to get familiar with the topic raised. After introducing the contents through reading, listening or speaking tasks, they were asked to work in face-to-face activities and in small groups. Near the end of the class, the researcher provided each group with a set of instructions and resources to solve a problem, and finally, participants self-evaluated their progress by using a designed checklist.

The topics of the lessons were chosen considering the students' level, its relevance for the current world, its flexibility to be used in different communicative tasks and to keep learners interacting. During the sixth week, the researcher applied the post-assessment, which consisted of reading some dilemmas, and discussing the possible solutions, while working cooperatively to design a product and present it to the class. At the end of the process, students posted their creative products on the noticeboards around the university. Figure 5 depicts the stages followed to carry out these procedures.

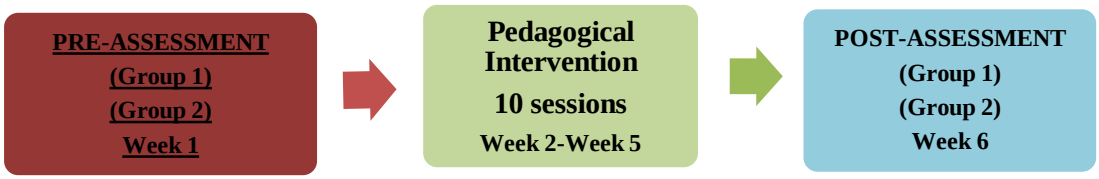


Figure 5: Implementation stages in action research

The implementation involved two groups, which received the same instruction because this research intended to analyze the effect of a pedagogical strategy on a typical problem in the EFL classroom so that collecting a significant amount of data was helpful. The intervention described in this chapter is consistent with the principles established in the institution along with its vision of language and learning, and every stage was designed according to the PBL approach, integrating language skills, cooperative work, and creativity.

The challenges faced during the implementation include time constraints for planning, creating and selecting materials, as well as maintaining students' motivation, in spite of the fact they all have different English language levels. The procedures I carried out to implement the pedagogical intervention were consistent with the general and specific objectives of this research.

Chapter 5: Results and Data Analysis

This chapter presents the results of this study, describing the methods and the procedures carried out to interpret the data qualitatively and quantitatively. The findings are organized through categories, patterns, and statistics emerging from the collection instruments and the observation of the implementation.

On the one hand, the qualitative analysis was done following the principles of the grounded theory approach, which as stated by Corbin & Strauss (1990) is a general methodology for developing concepts, based on the information gathered; the procedures followed in this theory aim to develop well-integrated notions, which explain social phenomena under study. On the other hand, the quantitative analysis was done according to the data obtained from the written interviews, the students' self-checklist and the pre and posttest results.

5.2 Data management procedures

Once students took the pre-assessment, requiring interacting, solving a dilemma, and presenting a creative product, the implementation process consisting of 10 lessons was carried out. Firstly, the researcher recorded the scores of the pre-test in Microsoft Excel; secondly, the field notes and the journal reflections taken were organized, along with the participants' self-assessment rubrics, and their responses to the interviews. Thirdly, a post-assessment, consisting of working in groups to solve a specific problem was administered, implying designing a creative product to present it to the class. Finally, the results of both stages were analyzed, following qualitative and quantitative procedures.

5.2.1 Validation

To validate the information, the researcher used the constant comparison method; this method consists of comparing new indicators with previous ones in order to find similar data and variations. After the end of each stage (pre-assessment, pedagogical implementation, and post-assessment), the data was registered and triangulated. According to Flick (2018) triangulation is a research strategy that combines methods of data to guarantee the reliability of the study and the information collected. In this study, triangulation was done by comparing the information registered in the classroom observation, the teachers' journal, the written interviews (open questions) and the pre/post assessment notes, to find similar patterns. (See 6.5Appendix D:)

To analyze the data gathered from the pre-assessment, the post-assessment, and the pedagogical implementation, the researcher took into account some specifications according to the tasks assigned. Firstly, the interaction among students; secondly, the problem solving; thirdly, the group work, and fourth the participants' creative skills to design and to present a product. These specifications were evaluated when observing the class, by registering notes in the journal and by analyzing the students' opinions in the interviews, as well as the answers of their self-assessment checklists. Additionally, some of the questions in the interviews were formulated to be statistically analyzed, which was useful to compare and validate the students' responses.

5.2.2 Data analysis methodology

In order to analyze data qualitatively, the researcher applied the principles of the grounded theory approach. According to Cohen et al. (2007), grounded theory is systematic and requires coding constant comparison in order to identify the core variable and plethora. This

systematic design points codifying data in three categories: open coding, axial, and selective coding, which were considered in the qualitative analysis of this study.

As suggested by Nunan and Bailey (2008), the quantitative data collected from the students' interviews and the students' self-checklist were displayed in bar graphs and pie charts to show, analyze and interpret the percentages. The pre-test and post-test results were also displayed in graphs, depicting the comparison of the scores through descriptive statistics.

5.2.2.1 Open Coding

Corbin & Strauss (1990) state that open coding is a process to interpret data analytically in order to provide the researchers with new insights to interpret the phenomena studied, according to the data collected, which facilitates the categorization of data by dividing it, and to identify the common patterns emerging from the raw data.

The first instrument analyzed was the pre-assessment, which was applied during the first week of the process, this test consists of simple tasks, requiring interaction among students, problem- solving, designing and presenting a product. As soon as the observation and the review of the tests were done, repetitive patterns were identified, including motivation, interaction, creativity, and cooperative work.

During the next eight weeks, the implementation stage was carried out and the lesson plans were executed, the classes in both groups were observed and the notes were registered in a journal. After each lesson, participants evaluated their performance by filling out a self-assessment form and a short written interview, which were useful to help them to identify their strengths and weaknesses. At the end of the process, a post-assessment was applied; students worked in groups to provide solutions to a problem while interacting with each other, using the

skills learned during the implementation to present their final product to the class. The researcher observed, and registered the process in the field notes and in a journal, and after reading, rereading and comparing the results, the post-assessment revealed similar patterns to those aforementioned.

5.2.2.2 Axial Coding

To identify open categories and to establish relationships among them, while defining subcategories, the researcher followed axial coding procedures, which Charmaz (2006) states are essential to determine the dimensions of a category, given consistency to the data analysis, finding relationships, and recognizing the emerging patterns from the raw data. The researcher used the color-coding technique to categorize and organize the information. This procedure was done by selecting the repetitive patterns found after analyzing the data collection instruments.

Figure 6 shows the main categories and subcategories emerging from the axial coding in order to answer the research question.

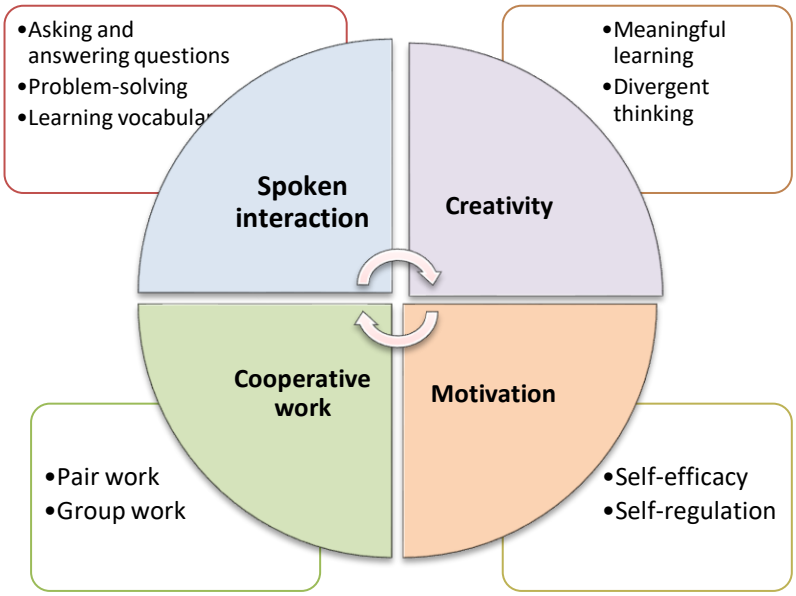


Figure 6. Categories and subcategories emerging from the axial coding stage

5.2.2.3 Selective Coding

Creswell (2012) defines selective coding as the final stage of grounded theory, which requires interpreting the interrelationships emerged from the selective coding in order to generate theory, based on the analyses of the factors and strategies involved during the research process to understand outcomes. Once the data was codified, it was interpreted to answer the research question.

5.3 Categories

A triangulation matrix to analyze the information and to validate the data, as well as the categories obtained accordingly with the research question. This procedure was useful to find similarities in the data, to simplify the information, and to focus on the key points to understand the phenomena under study.

5.3.1 Overall category mapping

Figure 7 illustrates the core categories of the axial coding stage, labeled as *interaction, creativity, cooperative work, and motivation.*

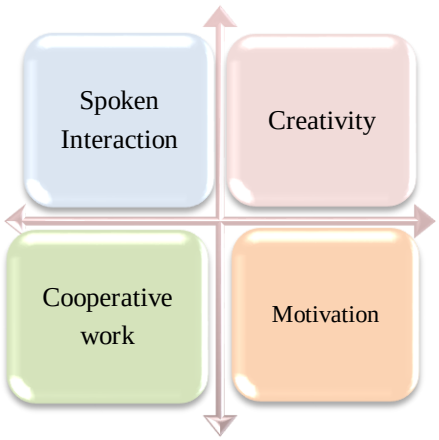


Figure 7. Category mapping

5.3.2 Discussion of categories

This section presents a description of the four categories depicted above, taking into account the quantitative and qualitative analysis of the data to discuss deeply the research question.

5.3.2.1 Spoken interaction

In regards to this category, it was observed that during the pre-assessment participants experienced some inconveniences when interacting, because they limited their responses to short answers, without daring to ask follow-up questions; in some other instances, only one student took the control of the conversation. However, throughout the implementation procedure the researcher realized that students gained a sense of independence when interacting, they were

spontaneous, negotiated meaning, supported each other to formulate questions, and self-assessed their performance, as stated in the excerpts below.

Were or were not the classes focused on problem-based learning useful to improve your oral language skills (speaking and interaction)? Explain your answer briefly.

> *"Problem-based learning tasks were useful because they helped me to interact with other partners, asked them questions, and not only to give answers as when speaking with teachers. I also learned more vocabulary." (Student 5)*

Written interview. Question 4. April 25, 2018. Translated by the researcher

> *"While students were exchanging opinions during face-to-face tasks, they were provided with more opportunities to interact, so they were less afraid to ask questions each other"*

Journal extract. Question 4. April 25, 2018. Translated by the researcher

According to Vacca and Gomez (2017), PBL leads EFL students to focus more on the content than on the form, as a result, this approach maintains students' attention on constructing knowledge through a communicative purpose, rather than in grammar. Throughout the pedagogical implementation, the researcher observed that the activities encouraged students to use their language skills, making agreements, and pointing their views. However, participation varied depending on their levels and interest on the topic.

Regarding the quantitative analysis, 91.3% of participants agreed that PBL helped them to identify their strengths and weaknesses to interact in English, which is significant to gain independence when learning a foreign language.

Were or were not the classes focused on problem-based learning useful to identify your strengths and weaknesses to interact in English? Why?

> *"It was useful for me because the dialogues in the text are not usually as spontaneous as in real conversations, so we could identify how much we have learned." (Student 1)*

Written interview.Question 8. April 25, 2018.Translated by the researcher

> *"Yes, group work activities were useful to identify my strengths and weaknesses and contribute to the solutions of the problem or the creative task." (Student 41)*

Written interview.Question 41. April 25, 2018. Translated by the researcher

According to Newman (2008), PBL provides learners with the appropriate tutorial process and suitable scenarios to foster learning, anticipation of problems, and dealing with difficulties, along with the development of leadership qualities and facilitation skills, which fit into their own learning styles.

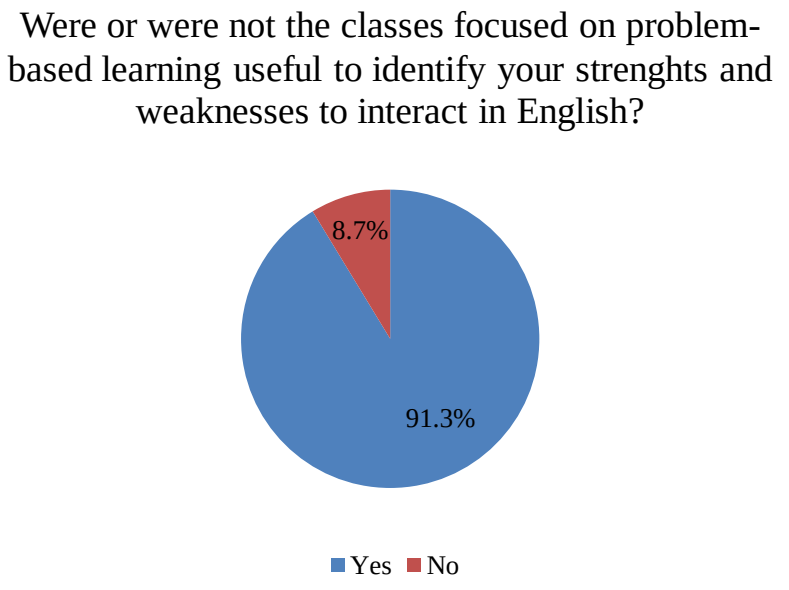


Figure 8. Written interview. Question 5. April, 2018

As long as the process was taking place, participants got used to the speaking task, requiring pair and small group interaction, increasing awareness about their abilities and limitations when using the language, which is essential to develop self-efficacy. The researcher also observed that the lack of vocabulary, the moments of distraction to check difficult terms, to correct structures, or to ask the right pronunciation of a word, affected negatively their speech. However, the interaction tasks were useful to encourage students to recognize their strengths; it was visible when participants remembered the new vocabulary, the expressions introduced in the lesson, or self-assessed their performance.

Additionally, although 54.8% of participants stated that all the tasks requiring working in groups and solving a problem were useful to enhance oral practice and interaction, field notes revealed that interaction increased when students were involved in pair activities, more than in small groups. (See Figure 9). When working cooperatively, participants tended to use their first language or interrupted their discourse to make agreements and decisions. Matthews (2007) explains this one of the limitations of PBL, because when students speak the same language they tend to use it more than English, especially when working in groups, and it is one of the biggest challenges of PBL.

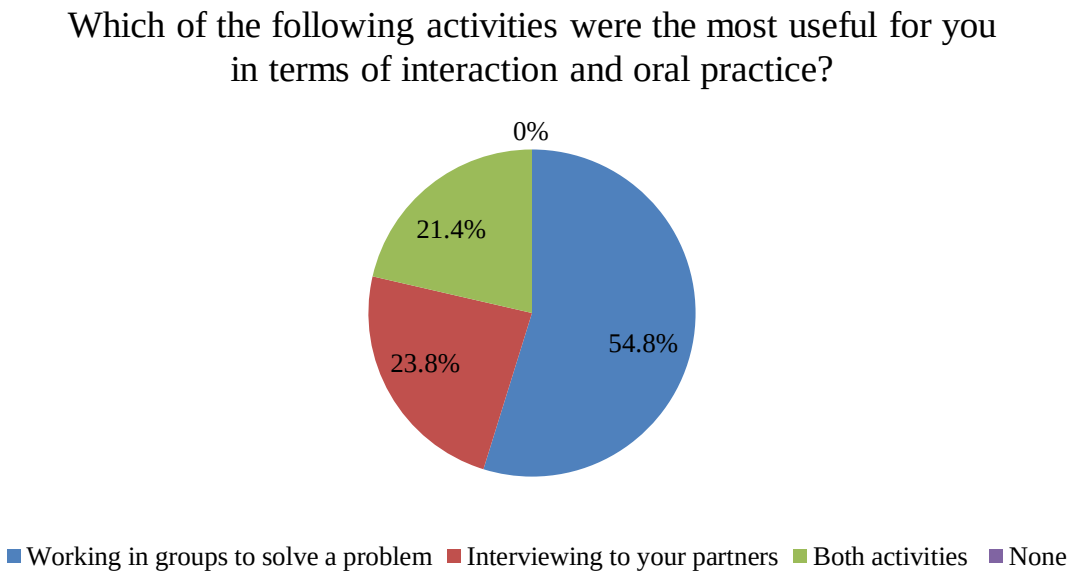


Figure 9. Written interview. Question 1. April, 2018

The answers expressed by students also evidenced that PBL helps them to reduce the affective or emotional barriers, which contributes significantly to their learning, and self-efficacy. In this respect, Krashen (1982) claims that stress and anxiety affect the comprehensible input, impeding learning. In addition, when the affective filter is low or removed, a better learning environment takes place. Oxford and Shearing (1994) argue that it is vital for teachers to show students that learning a language can be challenging, enhancing cultural awareness, self-confidence, and motivation.

However, it is necessary to discuss the resistance that a small number of students had to become involved with this approach, especially during the first three lessons, as the researcher observed some discomfort and difficulties to carry out the tasks. According to the data reported in the journal, common problems were related to the lack of vocabulary, low English proficiency level and incompatibility with PBL. Despite the tasks encouraged learners to extend their vocabulary by using their dictionaries and cooperating with each other to complete them.

65.4% of students recognized that the lack of vocabulary represented a problem when expressing their ideas and to ask questions. (See Figure 10)

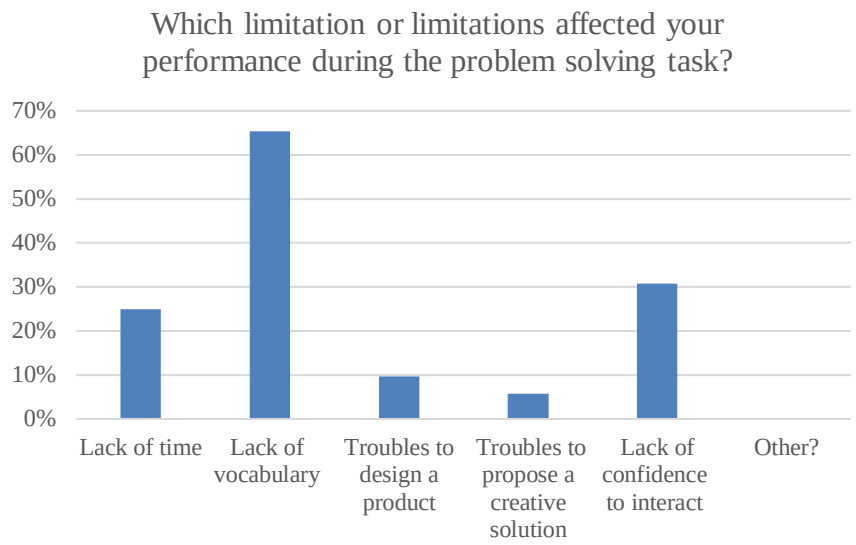


Figure 10. Written interview. Question 7. April, 2018

The qualitative data revealed that students agreed that PBL provides opportunities to practice the language, negotiate mean, improve fluency, and formulating and responding questions. I observed they were spontaneous and less anxious to communicate, using linguistic and paralinguistic clues (gestures, body language). Although, some students admitted the lack of vocabulary represented a problem to interact fluently, most of them asserted that face-to-face exercises, problem-solving tasks, and oral presentations were useful to strengthen their vocabulary.

Based on your own experience, did problem-solving tasks foster the practice of the oral communication skills or not? Explain your answers briefly.

" I think that speaking with others and interviewing our partners fostered both the pratice of vocabulary as well as new expressions to support our opinions"(Student 20)

Written interview. Question 2. April 18th, 2018.Translated by the researcher.

> *"Once students were organized in groups and read instructions, they decided which problems they would like to talk about, and the interaction process took place. When students spoke each other, they exhibited more confidence to ask questions and speech was more natural when sharing their views."*

Teacher's journal extract. Question 2. April 18, 2018.Translated by the researcher.

Did working on problems by offering creative solutions contribute or not to the development of your oral skills? Did they contribute, much, just a little or not too much?

Written interview. Question 3. April 21, 2018. Translated by the researcher

> *"Yes, because I lost my fear to talk, and my speaking skills became more spontaneous" (Student 35)*

Written interview. Question 3. April 21, 2018. Translated by the researcher

> *" I think, it did not contribute too much to me, because in spite of the fact that the activities enhance interest, if one does not have the required level, it is difficult to participate."(Student 31)*

Written interview. Question 3. April 21, 2018. Translated by the researcher

> *Problem-based learning provides opportunities to foster interaction and creativity, but it depends on the way the tasks are presented. Face-to-face tasks allow learners to use the TL to interact and negotiate meaning, while cooperative tasks challenge them to develop a product.*

Fieldnotes. March 24, 2018. Translated by the researcher

Regarding spoken interaction, the researcher also observed that when presenting the products, the majority of participants used the target language to explain their insights and to sketch their creative products, making efforts to interact. In this regard, Norman and Schmidt (2015) argue that PBL oriented classrooms enhance self-directed learning, intrinsic motivation,

memory improvement, activation of prior knowledge, and retention to develop analytical and reflective skills, encouraging students to use the target language, producing explanations and solutions. Oxford (1990) also states that pair and group-work activities are helpful to keep students sharing information, cooperating with each other, reducing anxiety and fostering motivation. In this respect, 72.1% of forty-two participants agreed that the approach is very useful to interact with their peers. (See Figure 11) 40% of them ranked sketching a television commercial as the most effective tasks to practice oral skills, followed up by choosing a topic portraying a problem to provide solutions (31.1%), as illustrated in Figure 12. However, the field notes revealed that sketching a television commercial (lesson 3) was more useful in terms of motivation and group working, than in providing authentic communication; while selecting a problem and suggesting solutions (lesson 9) kept participants more engaged with the tasks, especially when presenting their products. Remarkably, interviews revealed that some participants did not feel enough confidence because of their English language level, and the time constraints considering their schedules.

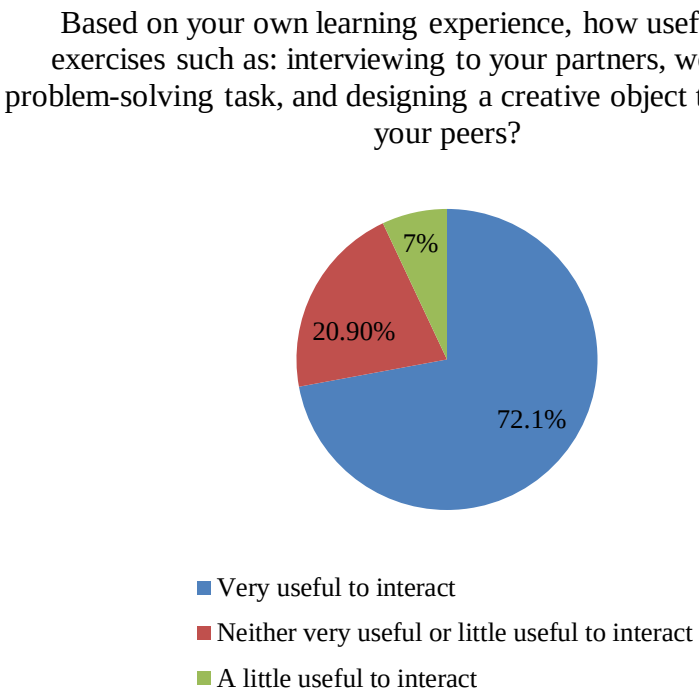


Figure 11. Written interview. Question 2. April, 2018

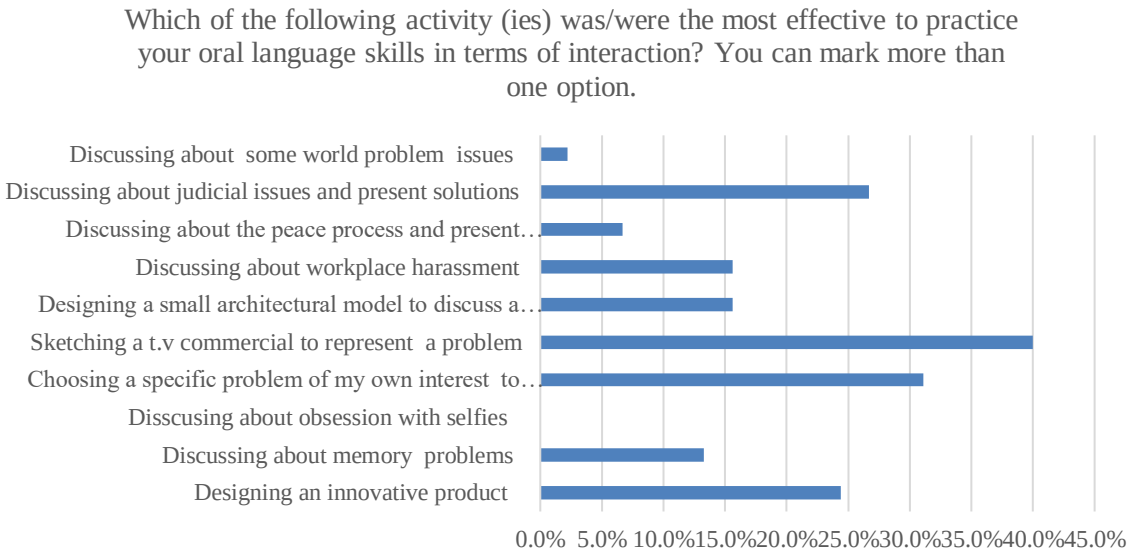


Figure 12. Written interview. Question 5. April 2018

Finally, when students were asked to rank the impact that the problem-solving tasks had in their learning, 64.4% ranked score 4 and 31.1% ranked score 3 (See Figure 13).

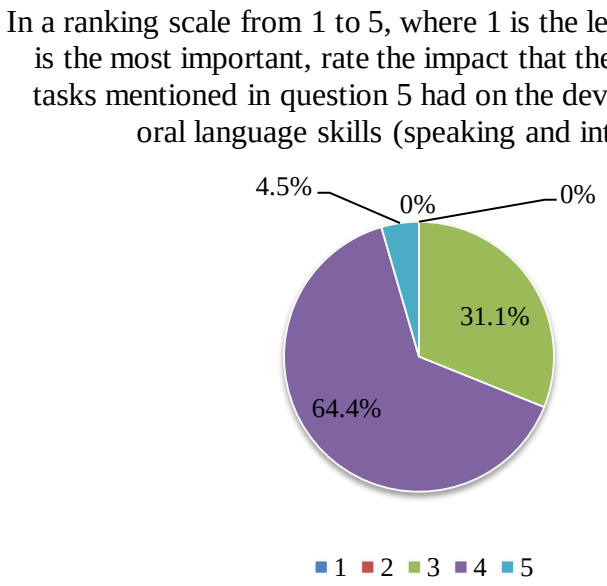


Figure 13. Written interviews. Question 6. April, 2018

5.3.2.2 Creativity

During the pre-test, participants exhibited some characteristics of creativity, which were maintained and strengthened up as long as the process was carried out. In this concern, the results confirmed that the tasks provided opportunities to be creative, fostering students'self-awareness which is an essential component of self-regulation. According to Robinson, (2006) education required to be redefined through creativity, helping learners to strengthen their individual skills, and the diversity of intelligence; especially because of the global, technological, and sociological changes the world is facing.

From this perspective, it was found that those lessons including creative strategies to present the topics and materials resulted in an appealing "surprise effect" enhancing learners' interest and creating scenarios to foster interaction, cooperation, autonomy, and reflection. With this in mind, is necessary to remark on the role of materials (videos, cards, LEGOS, clay, and realia) because they stimulate participants to design products, and to think about less

conventional solutions, that implied making decisions, reaching agreements, taking leaderships roles, planning, organizing, and managing stress and time, which are important skills to succeed when working cooperatively.

Did solving problems thinking by creative solutions contribute to your learning process as well as in the development of your oral skills or not?

> *Yes, because we were constantly using the language and using materials, which help us to play an active role and it kept us concentrated." (Student 4)*

Written interview. Question 3. April 19, 2018. Translated by the researcher

> *"During the group work tasks students were creative to develop their products and plan their presentations, as tasks encourage them to design posters, stickers, photo stories while interacting with each other.*

Journal extract. Question 3. April 19, 2018. Translated by the researcher

Were the activities in the lessons (interviewing to your partners, discussing and solving a problem with your group, and designing a product and present it to the class) useful for you? Why or why not?

> *"They were useful because they helped me to discover how creative I was and they were challenging." (Student 4)*

Written interview. Question 5. April 25, 2018. Translated by the researcher

> *"When participants were asked to guess what was inside the black bags, they were excited, especially after opening the packs and finding some puppets. Soon the classroom environment was full of joyful and there was a sense of interest to start working on the assigned tasks." (Journal reflection, session 10,4/27/2018)*

Journal excerpt. Session 10: The peace process. April 27, 2018

FOSTERING ORAL INTERACTION AND SELF-REGULATION THROUGH PBL

These findings are in line with the fact that PBL is also useful to change the traditional classroom environment and to foster art thinking. Lor (2017) asserts that art thinking is a teaching-learning strategy that can be applied in several disciplines, especially in higher education. This approach aims to develop the artistic, imaginative and creative skills, awakening the students' intrinsic motivation, and stimulating their feelings and senses. Moreover, it fosters learners' empathy and innovation, approaching them to the kind of environment they will encounter in the workplace.

However, in spite of the fact that most students agreed that PBL was useful to think differently about solving problems and to design products, the classroom observations revealed that they encountered some difficulties to use their divergent thinking skills when proposing solutions, suggesting mainly the most traditional. It means that the progress of the creative skills was evident in terms of the elaboration (designing, illustrating or sketching) of the products, more than in providing less conventional solutions or thinking outside the box.

> *"Although the presentation depicted some features of creativity (mind maps, brainstorming, illustrations) the solutions to the problems tended to be traditional (example: In order to get some money, it is a good idea to get a job, or to ask for a loan…*

Journal reflection. Session 1: Dilemmas. March 10th, 2018

> *"Most students were motivated and exchanged ideas spontaneously in face-to- face tasks. They also worked cooperatively when necessary. The solutions provided in the products were mainly traditional and not very creative at all."*

Journal reflection. Session 2: How does your brain work? March 8, 2018

Despite these limitations, it is important to mention that the creative tasks encouraged participants to deal with feelings of frustration and stress, which helps learners to be aware that even when they are motivated, the result may not be always the expected, and better planning is required.

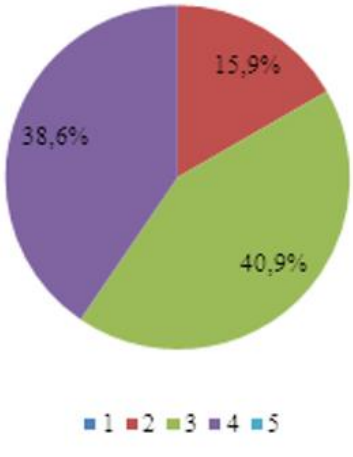
> *"Although the presentation showed some features of creativity (mind maps, brainstorming, and illustrations) the solutions to the problems were more traditional (example: In order to get some money, it is a good idea to get a job or ask for a loan…)*

Fieldnotes. Session 1: Dilemmas. March 10, 2018

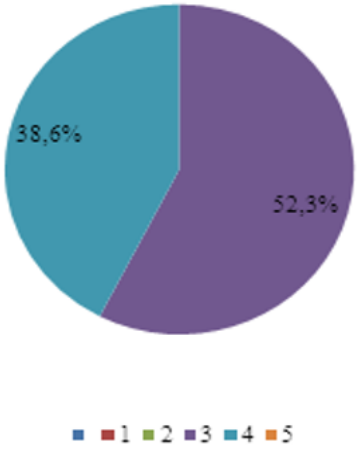
Additionally, the results of the qualitative and quantitative analysis revealed that PBL was useful to improve students creative skills and motivated them to solve problems by following the five stages of the creative process suggested by Wallas (1926) preparation, incubation, illumination, and verification, as participants sketched solutions, built-up products, and designed their own products. Firstly, they prepared the solutions while discussing and making agreements; secondly, they waited for the idea to have a sense of purpose, thirdly, they organized information to proceed with the creation resulting in "a-ha moment", fourthly, they adjusted their products before presenting them to the class, and finally, they self-evaluated their performance.

It was also found that students ranked higher scores when testing the progress of their creative skills, whereas the intervention was carried out; and interestingly only after session 9, they ranked their creativity with the highest score, which indicates that when participants are given independence to select the problem, and the materials, their creative, critical and divergent thinking skills also increase, as shown in Figure 14.

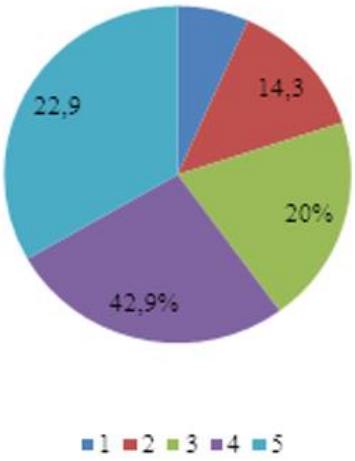
I used creative, critical and divergent thinking skills proposing different solutions to the traditional ones.



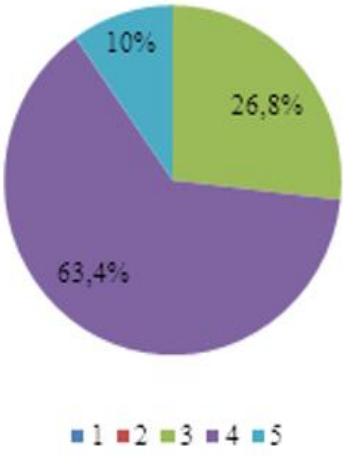
Session 2: How does your brain work?



Session 5: Natural disasters



Session 9: Global problem issues



Session 10: The peace process

Figure 14. Students' self-checklists. Question 3. April, 2018

Moreover, 35% of participants agreed that the skill that increased the most, after applying PBL was creativity followed up by teamwork skills (26.3%) as depicted in Figure 15.

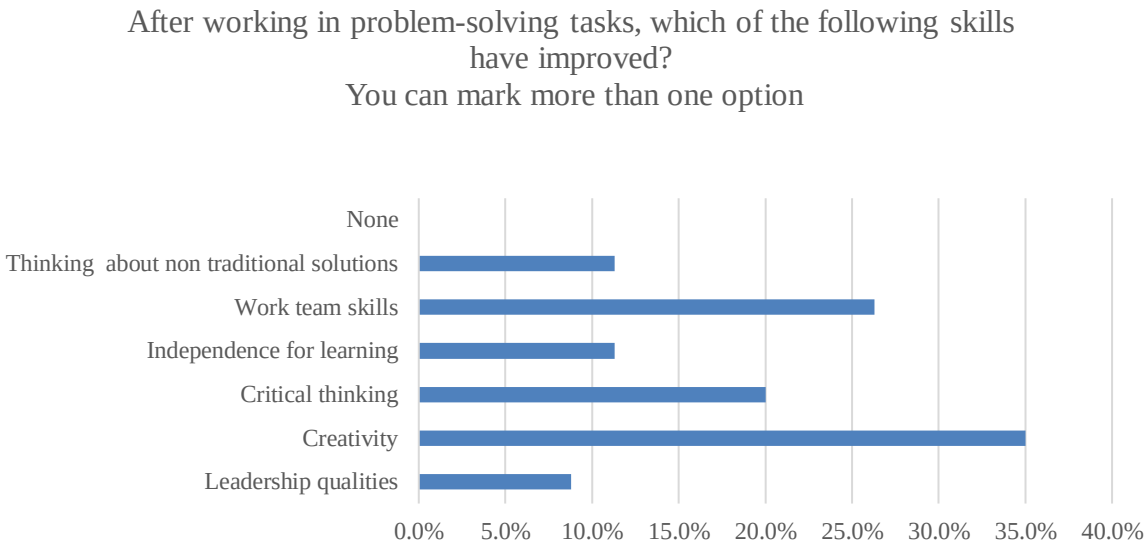


Figure 15. Students' self-checklist. Question 6. April, 2018

In regards to divergent thinking skills, findings revealed that those lessons requiring discussing dilemmas (lesson 1: dilemmas), stating a point of view firmly about a situation (lesson 6: workplace harassment), thinking critically to decide whether someone was guilty or innocent (lesson 7: crime), and analyzing two different views about a socio-political issue (lesson 10: the peace process in Colombia) were useful to enhance guessing, making assumptions fostering debate, and respecting different insights. Divergent thinking skills were also evident when participants designed their own products by drawing a mind map, sketching a situation, designing a poster, or a sticker. Most of the students' products were creative, which contribute to change the classroom environment and to foster cooperative work. Campisano (2016) asserts that the "art" studio classroom also provides opportunities to observe the students' talents and passions, as they gain awareness about visual communication and human understanding, making thinking visible.

Although the suggested approach promotes the development of creative skills and meaningful learning, not all students felt comfortable thinking outside the box to use materials for building up an object, to design an insignia or to sketch a situation; showing apathy or claiming they do not perceive themselves as creative students. However, creative tasks pushed students to play an active and conscious role when learning. According to Whenham (2018), active learning goes beyond the "eureka" moment, as it requires effort, hard work, practice, individual reflection and collaborative exchange to get better ideas and novel solutions.

Curiously, although 72.1% of participants agreed that the exercises including interviewing to their partners, working on a problem-solving task, and designing a creative product are useful to promote interaction, only 33.3% of them would assume the cost of the materials, as they claimed such expenses should be in charge of the institution.

5.3.2.3 Cooperative work

Regarding this category, the pre-test revealed that when students worked in groups, their interaction was not spontaneous and effective, as they used the first language, especially when proposing solutions for the problems raised. However, despite the grammar mistakes and the lack of vocabulary, some participants took risks to support their insights using the L2, and negotiating meaning. According to Brown (1994) risk-taking, gambling a bit, trying out hunches about the language, and making mistakes, are essential for being effective learners; it does not imply that those so-called shy students may not be successful, but they certainly need to be provided with more chances to demonstrate their capacities in ways that better fit into their introverted personalities.

As expected, during the initial stages of the implementation, participants found difficult to work cooperatively, and they remained using the L1 to express their insights. Furthermore, students got some difficulties to play their roles in the group during the first session, as they were only written on the board; it was not until the second lesson, after participants were provided with some cards labeling specific functions to perform, that they started contributing and becoming engaged with the problem-solving tasks.

Were the tasks requiring working cooperatively (face-to-face interviews, discussing and solving problems, and designing a product to prepare a presentation) useful for you? Why or why not?

"*Yes, they were because it enhanced a joyful environment, fostering creativity for everyone" (Student 3)*

Written interview. Question 8. April 25, 2018. Translated by the researcher.

"I think the activities were useful, especially the challenges, as they foster teamwork and it was easier to learn" (Student 23)

Written interview. Question 8. April 25, 2018. Translated by the researcher.

The results also indicated that throughout the implementation process, participants gained the confidence to interact with their peers and the roles of leaders were more visible, especially with those problems related to their specific fields of study. In lesson 5 (natural disasters), environmental engineering students proposed more solutions than their peers, being more active during the discussions. In lesson 7 (crime) law students were more critical and assertive when reading the dilemmas and deciding who were innocent or guilty, and finally,

when discussing a controversial issue like the peace process, those students enrolled in social sciences displayed more enthusiasm to participate.

> *The group work task enhanced motivation and cooperative work. In this task law students acted mostly like the leaders of the activity.*

Classroom observation. Session 7: Crime. April 14, 2018

> *Something remarkable of this lesson was that the problem did not awake students' interest at the beginning, but as long as the lesson advanced, they were engaged, especially when sharing their opinions and experiences about natural disasters. (Journal reflection, session 5, 4/5/2018)*

Journal excerpt. Session 5: Natural disasters April 5, 2018.

At the end of the process, it was observed that both face-to-face tasks and group work, encourage cooperative work helping students to feel more confident to establish relationships with their peers, to use the language with communicative purposes, as well as to manage stress. Nevertheless, most participants agreed that group-working tasks provided them with more opportunities for interaction than face-to-face exercises. (See Figure 16)

Considering your learning experience, write down a brief opinion about the pair work and the group work, carried out during these sessions. Justify your response.

> *"I think, working in pairs and in groups contribute a lot, because you learned from the others and they also learned from yourself." (Student 2)*

Written interview. Question 9. April 25, 2018. Translated by the researcher.

> *"These lessons requiring working together were a good opportunity to learn as a team, because they kept us active and we were able to express our opinions. (Student 32)*

Written interview. Question 9. April 25th, 2018. Translated by the researcher.

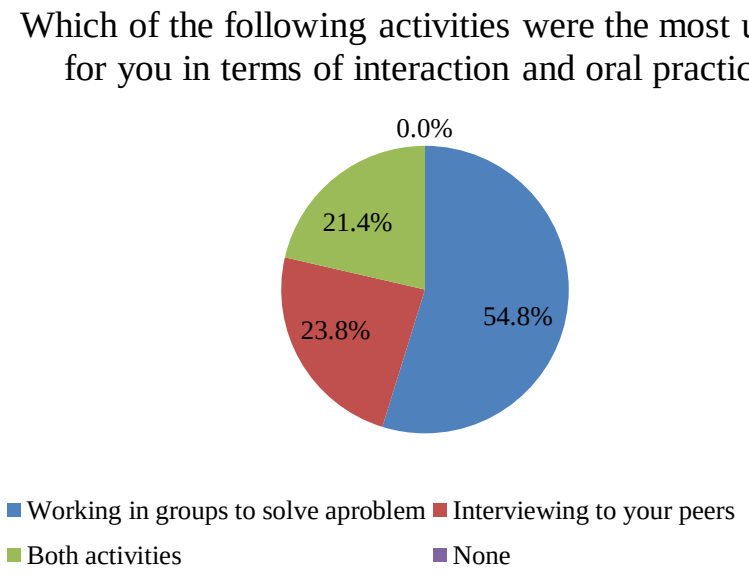


Figure 16. Written interview. April, 2018.

Additionally, the students' self-checklist revealed an increase in their team skills, whereas the intervention was carried out, as shown in Figure 17.

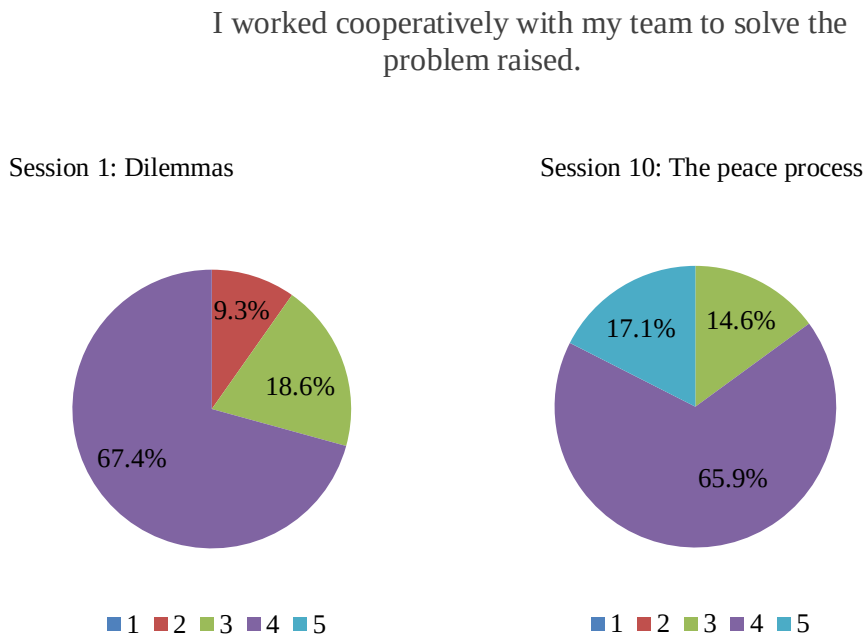


Figure 17. Students' self-checklist March and April, 2018

The findings also revealed that PBL fosters cooperation, enhancing motivation, interaction and social skills. However, it is important to mention that the methodology not always fit into the students' specific learning styles, because not all students felt comfortable working as part of a team and some were reluctant and apathetic to participate when thinking about a problem, planning, and presenting a product. This fact explains that the students' lack of vocabulary and their English language level limited their participation.

In light of this, Gaille (2015) asserts that although cooperative learning fosters high-level thinking levels, empathy, participation, responsibility and self-esteem (through the development of leadership qualities and problem-solving skills), it creates dependency and it is difficult to control who have or have not done their best. Moreover, Johson et al. (2014) explain there are psychological reasons implicated when working cooperatively, such as students' negative prior experiences or anxiety to get a good grade.

5.3.2.4 Motivation

Concerning motivation, the qualitative analysis revealed that the tasks proposed increased students' enthusiasm for learning and interacting with each other gradually. The lesson planning, the strategies, and the materials were also essential to keep participants' interest; enhancing their curiosity and fostering suitable contexts to develop self-regulation, and self-efficacy, as students play an active role, leaving their comfort zone and moving beyond the traditional ways of learning. In this study, 53.7% of those surveyed agreed that the activities focused on solving a problem, designing a creative product and giving a presentation were very useful to enhance motivation, curiosity, and interaction, as depicted in Figure 18.

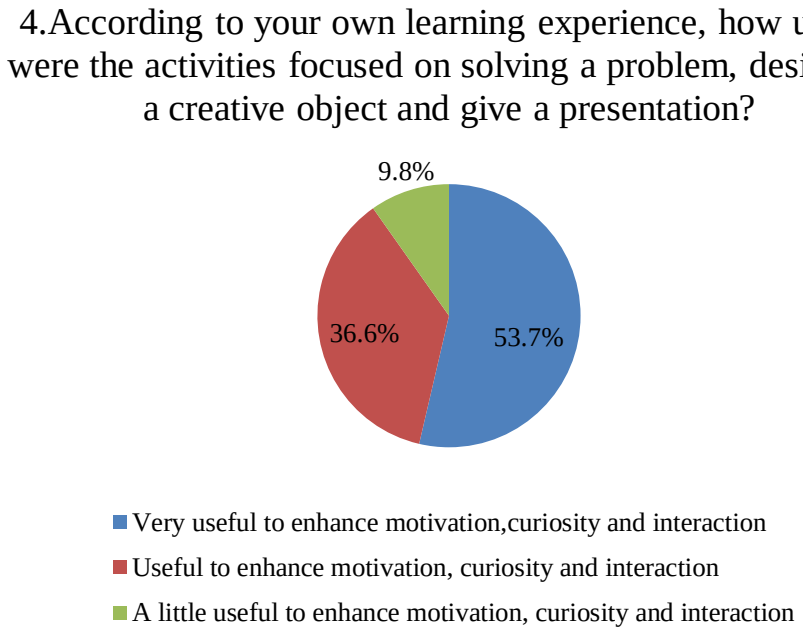


Figure 18. Written interview. April, 2018

Additionally, 44.8% of students consider that using a variety of didactic materials contributes to their performance during the problem-solving tasks. (See Figure 19)

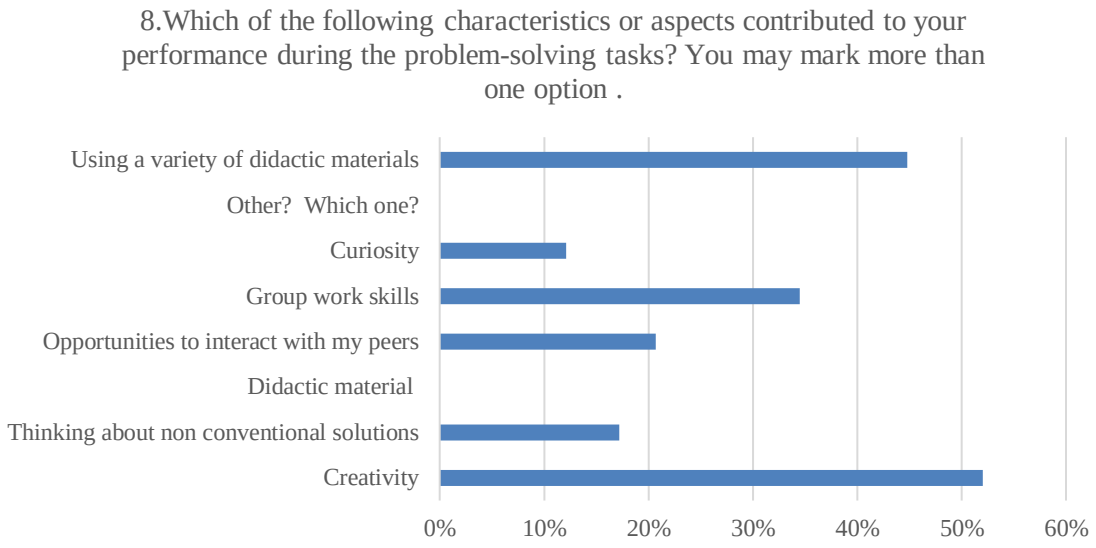


Figure 19. Written interview. April, 2018

Regarding this issue, Dembo and Seli (2016) argue that motivation consists of goals, beliefs, perceptions, and expectations determining our failure or success so that the problems and challenges intended to stimulate participants' interest to develop self-efficacy, which is defined by Greene (2018) as a persons' belief in their capacities to complete an assigned task.

Were or were not the didactic materials (cards, cardboard, markers, realia, clay, etc.) useful in your learning process? Why or why not?

> *"Yes, it was useful for me because it helped with my self-motivation and improved my individual performance inside the group." (Student 23)*

Written interview. Question 11. April 25, 2018. Translated by the researcher

> "*When students were presented with the video, they felt enthusiastic and something remarkable was they cooperate one to each other on developing the comprehension task. The black bags containing the materials awoke participants' curiosity once again and enhanced a lively class atmosphere. When planning and sketching the product to perform the task, motivation was visible."*

Journal excerpt. Session 2: How does your brain work? March, 23, 2018.

The gradual incorporation of challenging tasks and stimulating materials were helpful to self-regulate the students' oral interaction, cooperative work, and motivation. As soon as participants got familiar with the methodology, their enthusiasm to solve the problem was not only addressed to satisfy the teacher or their partners' expectations but their own, gaining some independence and being aware of their roles in the group. In spite of the fact that in the written interview most participants argued that they do not observe any significant progress in their self-regulation skills, some of them agreed the tasks were useful to improve their communicative performance and creative skills. Moreover, routinizing them was an effective strategy to foster autonomy, as their interest, reactions and attitudes to start working in the proposed task become more spontaneous gradually. According to Holden (2014) routines foster a positive learning environment and help students to become autonomous because they are aware of their own expectations about the lesson, gaining confidence. However, not all participants shared this view.

Did the problem-solving task offer some strategies to favor your autonomous learning and to be more independent in your learning process? (Strategies you can use outside the classroom without being supervised by your teacher) If so, which ones?

"Yes, creativity because I have realized that when you practice this skill, you are able to apply it in this subject as well and other related to our careers" (Student 4)

Written interview. Question 10. April 27, 2018. Translated by the researcher

No, because of the time, most of us have to invest on independent work (extra-hours) because these lessons are too short." (Student 30)

Written interview. Question 10. April 17, 2018. Translated by the researcher.

> *"During the post-test students were organized in groups, and they started reading the problems to select one. I realized students used the first language, but as soon as they started planning the answers and got ready to interact, all groups were using the target language, despite some grammar and vocabulary mistakes. Something remarkable was that the class environment reflected spontaneous interaction and participants took more risks to ask questions. When working in groups and designing the product, the creativity features exhibited in previous sessions were observed; there was a sense of enthusiasm that kept everybody interested."*

Journal excerpt. Post-test. April 28, 2018.

Zimmerman, cited by Dembo and Seli (2016) asserts that self-regulation improves one's learning while strengthening the perception of self-confidence and control over the learning process, establishing which methods are effective or ineffective to perform effectively and self-regulated learning. Although, not all participants seemed engaged with the task proposed, or with the manipulation of materials, motivation was evident as students were challenged to take risks, to control their emotions (tolerance to frustration, stress, or disagreements with their peers), and to think of strategies to succeed.

The findings also revealed that motivation increases or decreases depending on the problem discussed, affecting participation. A large number of students were active during the presentations of their partners, making comments or asking questions, while a small amount preferred to remain quiet. In the same way, when students hung their products on the bulletin board of the university, some of them were more self-determined than others, who only waited until their peers or the teacher did it. Remarkably when students were asked which activities

were more useful for them to enhance motivation, 44, 2% agreed that working in groups to solve a problem as illustrated in Figure 20.

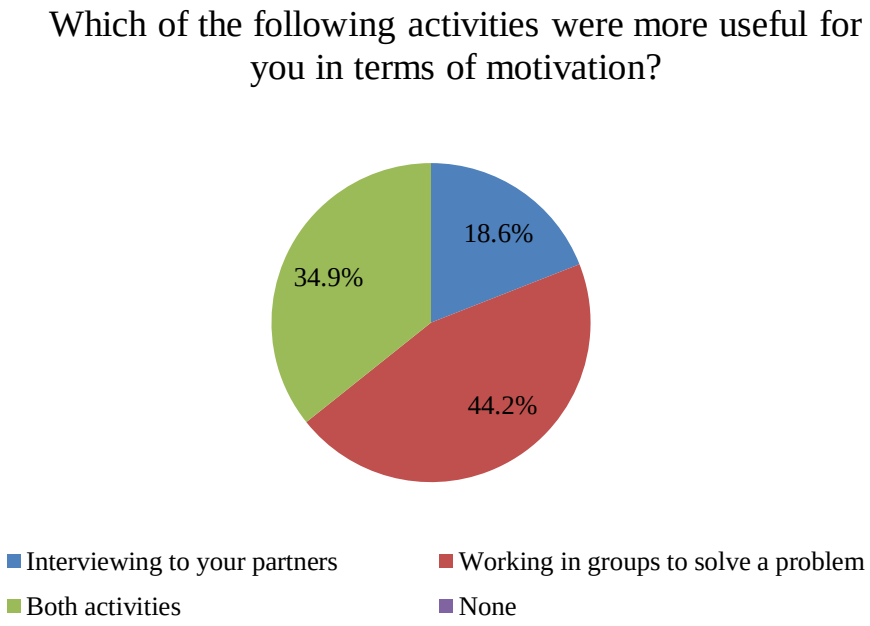


Figure 20. Written interview. Question 5. April, 2018.

Additionally, after the implementation, cooperative work and motivation increased, as students gained the confidence to identify their strengths and used them to contribute with their teams, learning to make agreements and overcome the typical constraints of group working. In relation to motivation, the post-assessment revealed that the approach as well as the material, as well as the material, stimulated learners to solve problems in an engaging manner and encouraged them to believe in their own capacities, sharing their views and own understandings of the problems, while gaining independence after being routinized.

Consequently, these findings validate the usefulness of PBL to foster interaction, and self-regulation while students gained confidence, critical attitude, and autonomy in a student-centered-environment. These results are also relevant as they contribute with the demands of the

current changing world, requiring professionals who will be able to design, innovate and think outside the box while providing teachers with useful pedagogical strategies to be replicated and adapted to other teaching environments, even when teaching complex, academic topics.

After discussing the four main categories of this study, the researcher will discuss briefly the results of the pre-test and post-test taken by participants in order to provide readers with a general picture of the results obtained.

5.4 Pre-test and post-test

When analyzing and comparing the results of the pre-test and the post-test, it was found that the pedagogical intervention was useful to enhance students' oral interaction skills and to improve their group work skills, creativity and motivation. At the end of the process, students showed more independence to interact with each other spontaneously and to take risks to start or maintain a conversation, and to make an oral presentation. However, the lack of vocabulary and the low English level, affected interaction, especially when asking questions.

Group work tasks also provide students with opportunities to improve their team skills, to play a role in the group and to design the product, but not all students felt comfortable working together, because of their different English levels. In terms of creativity and motivation, the posttest revealed that the didactic materials and the variety of the task enhance students' interest, awaking their curiosity to design the product, in spite of the fact that the solutions were more conventional than original.

The qualitative analysis was done by assigning a grade to the pre-test and the post-test, according to the performance of participants during the face-to-face exercise and the group-

work tasks, by evaluating their presentations in terms of grammar, pronunciation, vocabulary fluency, cooperative work, and creative skills.

After analyzing the data, the scores revealed that a large number of participants got higher scores in the post-test, although a fair amount of them got the same scores in both exams, and in some cases, the pre-test revealed better results than the post-test. The scores obtained in the pre-test were similar for both groups, the highest score obtained in-group 1 was 4.0, and the lowest was 1.8 (See Figure 21) and in group 2 the highest score was 3.7 and the lowest was 1.9. (See Figure 22).

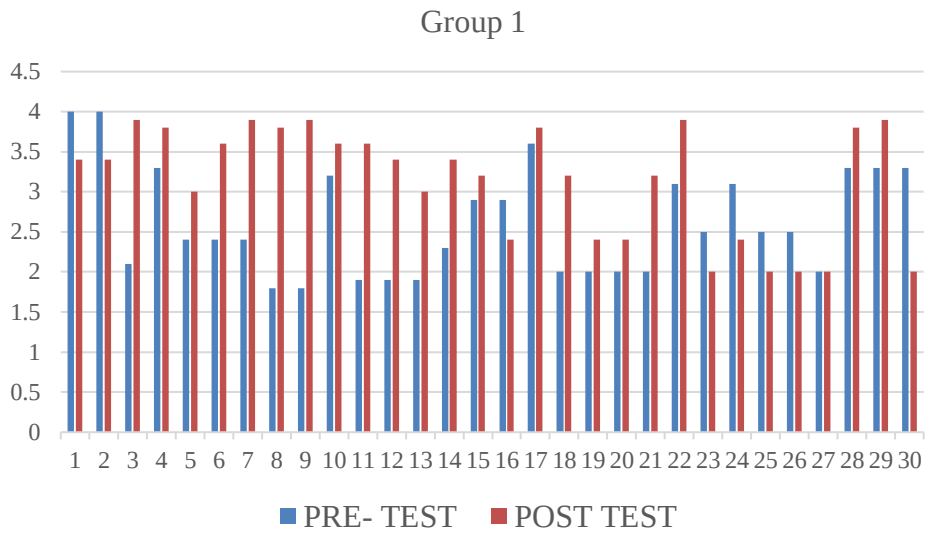


Figure 21. Pre-test and post-test results (group 1)

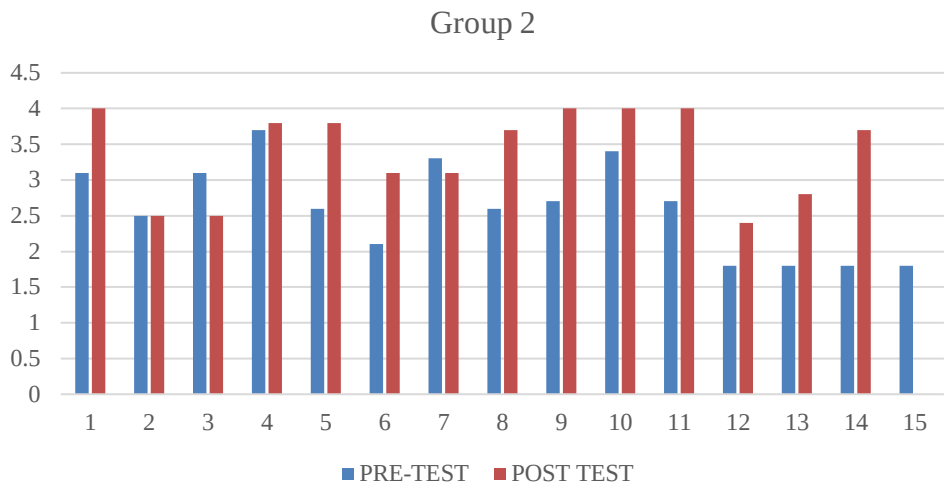


Figure 22. Pre-test and post-test results (group 2)

However, the results obtained in the second group revealed a significant improvement of the skills evaluated, as the highest score was 4,0, the lowest score was 2,4, and only one participant did not take the post-test. (See figure 23 and figure 24).

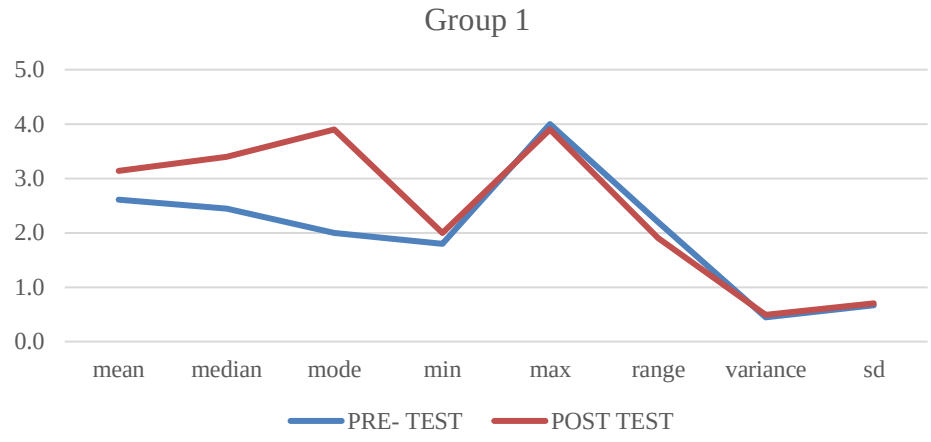


Figure 23. Pre-test and post-test scores: Descriptive statistics (group 1)

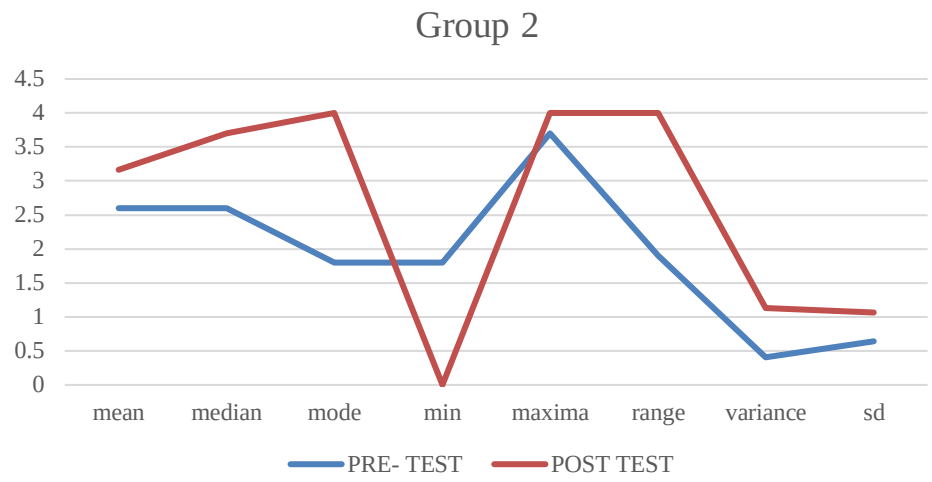


Figure 24. Pre-test and post-test scores: Descriptive statistics (group 2)

Considering there were more students in the first group than in the second, the results support the fact that speaking skills are developed more effectively in smaller classes because students get better opportunities for interacting and participating. In light of this, Bahansal (2013) asserts that contrary to larger classes, in small size groups teachers pay great attention to all the students, enhancing participation, and they get them involved easily, keeping their concentration.

All in all, creative problem-based learning tasks enhance interaction, and cooperative work, creating suitable scenarios to self-regulate learning. However, the students' progress depends on the intrinsic motivation about the problems discussed and their willingness to self-assess their performances to improve their learning gradually. In the same way, the proposed tasks developed self-efficacy, self-confidence, and independence, which are essential components to strengthen self-regulation.

Chapter 6: Conclusions and Pedagogical Implications

The conclusions described in this chapter intend to contribute with the current learning strategies, to gradually change lecture-based environments into student-centered contexts, encouraging students to move beyond their comfort zones and to develop independence to interact.

Moreover, through the conclusions drawn below, other English language teachers might reflect on their pedagogical practice enhancing creativity, cooperative work, self-assessment, self-efficacy, and self-regulation. With this in mind, this section encompasses a comparison between the results of this study and those mentioned in the state of art; the positive impact of the findings, the limitations and difficulties encountered during the study, the strategies, and the recommendations to explore deeply the phenomena under investigation.

6.1 Comparisons of Results with Previous Studies

The findings in this study revealed that PBL is an effective approach to foster oral interaction and academic skills, because students are exhorted to think critically, to be creative and to work cooperatively. These findings corroborate the studies of Muñoz (2017) and Peña & Santos (2017) who found that PBL had a positive impact on participants, engaging them into challenging tasks to analyze information. However, in contrast to Campos' findings, this research showed that for most participants, PBL develops transferrable skills, which can be used in their future professional environments. This fact confirms that this approach requires careful planning, considering the students' needs and expectations to awake their curiosity and enthusiasm, but they are not always satisfied. This study also confirms that problem-solving tasks foster cooperative work, group discussions, and oral presentations, triggering interaction and practice, turning passive learning environments into more creative scenarios to interact,

which is in line with the findings provided by Albert & Kormos (2004), Dudek et al. (1993), Wallach & Kogan (1965) nonetheless, teachers need to be tolerant and flexible, as students are often tempted to use their L1.

Regarding oral interaction, this study highlighted that PBL might be adapted to the learners' context to foster speaking, and reflection on their performance, which is coherent with the findings in Ottó (2006). In the same way, when this approach is properly integrated with creative tasks, students are provided with more opportunities to interact, as reported by McDonough et al (2015). In light of this, Çakiroğlu & Öztürk (2017) also found that incorporating meaningful problem-solving tasks, specifically, interviews, informal talks, role plays, and collaborative work, fostering interaction, and helping learners to develop their creative, planning and teamwork skills for self-assessing their progress to gain independence, which affects positively their self-efficacy, and self-evaluation skills. Furthermore, it was observed that routinizing learners self-regulate students' performance, as they have extra practice, gaining experience to talk about a topic or real-life problems, and become self-confident, because they establish social relationships with their peers, as indicated by Hurtado (2013), Riaño & Espinoza (2017), Ashton & Chartrand (2009), and Barrero (2018).

Interestingly, in regards to divergent thinking skills, this study revealed that participants found difficult to think outside the box, and they prefer to provide more conventional, and traditional solutions. This reinforces the fact that lecture-based environments are mainly addressed to develop convergent thinking so students might find it hard to think otherwise, repressing creativity, which was reported by Runco (2004) and Jackson (2014). Other findings, revealed that integrating PBL and creative tasks results into a powerful pedagogical strategies, involving learners into challenging, stimulating tasks, encouraging them to explore their hidden

skills, and talents, fostering student-centered environments, and self-regulation, as learners develop awareness of the strategies required to perform successfully, devoting more time to practice, which is in complete agreement with Wang (2019) and Aregu (2013).

6.2 Significance of the results

Concerning the interpretation of the research question *"What effect does creative problem-based tasks have on undergraduate students' oral interaction skills, and on their self-regulated learning?* it was found that problem-solving tasks involving face-to-face interviews, team-work, short interviews, designing creative products, sketching problems and solutions, and making oral presentations, encouraged learners to participate in communicative exchanges, and stimulated them to take risks when interacting each other; increasing their practice to use the target language and reflection on their performance. Consequently, as stated in the literature review, PBL contributes significantly to turn lecture-based classrooms into student-centered environments, energizing the learning process, promoting active learning and self-regulation.

The results of this research also revealed that PBL was a suitable approach to foster and maximize students' oral interaction, building scenarios to self-regulate their learning while developing creative tasks and working cooperatively. However, not all students are receptive to this approach, showing resistance and apathy, especially those who have not reached the expected English level, or find it difficult to move beyond their comfort zones, especially at the initial stages, that is why scaffolding the tasks was essential.

With this in mind, the first objective of this research was to examine whether creative problem-based learning influences on the undergraduate students' oral interaction skills. In this way, the data revealed that the PBL approach involved students in discovery-oriented tasks, which encourage them to take risks to express their ideas, negotiating meaning, and using

linguistic and paralinguistic signs to communicate in the L2, while discussing their views, experiences and possible solutions to the problems. However, the way the problem-solving task is presented and the students' own interest influences interaction. In spite of the fact that most participants affirmed that group-work fostered interaction, it was observed that students used the L1 in the planning stages, or when providing solutions, more than in face-to-face exercises, informal talks or short interviews. Moreover, PBL enhances creativity, pushing students to use the four stages of the creative process.

The second objective was to establish whether PBL tasks might enhance students' self-regulated learning. In this sense, it was found that routinizing them to discuss problems while using their group-work, and oral skills, fostering creativity, critical thinking, team-work skills, and to self-asses their performance, as they gained extra practice and independence as long as the process was carried out. Additionally, using problem-based learning tasks also contribute to the students' self-regulation skills as the activities assigned were useful to develop higher, lower, and transferrable thinker skills, which are useful to succeed in their future professions.

The research project depicted in this paper was relevant for the institution, as it might be replicated in other contexts, and it is coherent with its methodology and the vision of language and learning. On one hand, the vision of language aims students develop their communicative competence through the integration of the four language skills, using authentic materials, and participating in challenging tasks. On the other hand, the vision of learning intends students to share ideas, opinions, and experiences, using the language with communicative purposes, through meaningful learning and real communication.

These results may be transferrable to other contexts fostering active learning and teaching while discussing current problems to stimulate students' oral skills and self-regulate

their learning. Additionally, the national policies in our country expect students at a higher level will be able to improve their speaking and transversal skills to replicate them in their workplaces. Taking into account these demands, the strategy implemented fostered the practice of oral skills, teamwork, creativity, and self-regulation.

In relation to the global context of English education, the results of this study expect to be useful to the nowadays challenge of turning teacher-based classrooms into more student-centered context, encouraging both teachers and learners to be active, and creative to develop academic, social and professional skills which may be visible for the institutions they belong to.

6.3 Pedagogical challenges and recommendations

One of the biggest challenges to apply this strategy is to encourage undergraduate students, and sophisticated university-level professors to transform lecture-based environments into more student-centered context, as students are mainly used to performing passive roles, and educators might find difficult to vary their teaching strategies while fostering problem-solving, oral interaction and self-regulation at time. To face this challenge, careful planning and selection of materials is required, which implied to count on optional tasks, and extra resources. Additionally, considering PBL may be a new methodology for most of the students, it is useful to keep an engaging attitude, inviting them to be spontaneous and to take risks to use the foreign language, as well as changing the organization of the classroom. Professors may also adapt this methodology to their own teaching styles, exploring their own creativity to foster interaction and self-regulation.

Another challenge is to deal with the students' English level, as not all of them feel prepared to take part in controversial discussions or to perform presentations. Consequently, it is necessary for teachers to scaffold learners using warm-up activities, contextualizing the topics,

teaching key terms, and fostering pair and group work. Additionally, teachers need to be prepared to deal with apathy or frustration feelings, especially at the initial stages. In terms of self-regulation, and considering not all students are familiarized with self-assessing their learning, it is important to remind them to be honest and conscious about their own performance.

Finally, teachers need to be skillful to plan, design, adapt problem-solving tasks and encourage interaction, creativity, and self-regulation. In this sense, working with colleagues to avoid time constraints and benefit one from each other might be valuable to improve the effectiveness of the strategy, and explore it deeply as well.

6.4 Research limitations on the present study

One limitation of the present study was to deal with external stressors, as student-centered environments may become noisier than expected. Although discipline management in higher education is not as complex as in other contexts, excessive noise may bother colleagues or interfere with other activities. Considering the first group was bigger than the second, it was necessary to remind students to maintain order, especially when working in groups. In light of this, teachers require to vary strategies depending on the number of participants. Consequently, it might affect the validity of the study because the results will vary accordingly.

In the same way, time constraints represented a limitation for some participants, and despite the fact that the lessons were planned carefully, some of them stated that they would have liked to have extra time to construct or to design their products, but it was not always possible, because of the specific schedules given to the course. Fortunately, none of these limitations affected the significance of the results.

6.5 Further research

This study contributes to the existing research about the effects of PBL on students' oral interaction skills, creativity, cooperative work, and self-regulation. Additionally, it may be the starting point to analyze the benefits of this approach to foster student-centered environments, active learning, active teaching, and the specific strategies which might help students to think outside the box, and develop leadership qualities while self-regulating learning.

Besides, this research provides English Language teachers with simple strategies to promote interaction in the classroom, active participation, and do-it-yourself tasks, creative group work, and self-assessment. However, it would be worthwhile that other researchers explore these issues deeper, empowering teachers and learners to transform education into a more participative experience, promoting interaction, and self-reflection.

In conclusion, these findings not only evidenced that integrating PBL fosters oral interaction, enhances a student-centered environment, and teamwork, but also opens a door to continue researching on those strategies which help EFL students to self-regulate their learning, and to succeed on spoken tasks. The findings also exhort readers to reflect on the powerful role of the problem-based learning as an approach to improve teachers' pedagogy, while encouraging self-efficacy, self-confidence, problem-solving, oral interaction, teamwork, creativity, leadership, and transferrable skills, which are essential qualities of twenty-first-century learners.

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Appendix A: Needs Analysis

This section presents the instruments used to analyze the research problem depicted. Although, they were not applied to the same groups of students who participated in the pedagogical implementation, they were useful to analyze the performance of 60 undergraduate students when interacting to each other as well as their reactions when solving different problems.

A.1 Instrument 1: Needs Analysis Interview

Fostering F2F Oral Interaction through PBL

Instrumento 1: Entrevista

Propósito: Recoger información pertinente sobre las habilidades de interacción oral y las estrategias de aprendizaje que utilizan los estudiantes de pregrado en los cursos de competencias básicas en lengua extranjera (inglés).

["**Purpose**: To collect information about the undergraduate students' oral interaction skills and their learning strategies"]

Participantes del estudio: Estudiantes de pregrado que están cursando tercer nivel de inglés en la universidad pública en el departamento de Nariño. (Level B1 de acuerdo con el Marco común europeo (CEFR)

["Participants of study: Undergraduate students who are enrolled in the third English language level of the language center of a public university in Nariño. (Level B1, according to the Common European Framework (CEFR)"]

Constructo examinado: Interacción Oral y estrategias de aprendizaje.

["**Examined construct**: Oral interaction and learning strategies"]

Consideraciones éticas de la recopilación de datos: Toda la información suministrada a través de este instrumento es confidencial y será utilizada únicamente con propósitos educativos, académicos e investigativos.

["Ethical considerations about the data collection: All the information collected is confidential and it will be only used with educational, educative, and research purposes."**]**

TIEMPO ESTIMADO PARA RESPONDER LA ENTREVISTA: 10-15 minutos aproximadamente

[Estimated time to answer the interview: 10-15 minutes approximately]

A través de esta entrevista se recolectará información de los estudiantes de pregrado que actualmente están matriculados en los cursos de competencias básicas en el nivel pre-intermedio B1. Naturalmente, su identidad será respetada y sus respuestas utilizadas únicamente con propósitos investigativos.

["Through this questionnaire information about the undergraduate students, who are enrolled in the Fourth English Language Level will be collected. Naturally, their identity and answers will be only used with research purposes"]

Indique con una X todas sus respuestas ["Mark with a X your answers"]

Comprendo y estoy de acuerdo que las respuestas suministradas en este cuestionario sean utilizadas para propósitos investigativos. ["I agree all my answers in this questionnaire will be used with research purposes"]

1.Información Demográfica. Indique su género

["Demographic information. Select your gender"]

Masculino (M) ☐ **Femenino (F)** ☐

["Male (M)] ☐ **["Female (F)"]** ☐

2. Edad: Indique el rango de edad en el que se encuentra ["Age: Indicate your age range"]

a. 16-20 ☐

b. 20-25 ☐

c. 25-30 ☐

d. ¿Otro? ¿Cuál? _____ ["Other? ¿Which?_____"]

3. Indique con una **X TODOS** los niveles de inglés que ha cursado o está cursando y/ que ha aprobado en la Universidad hasta el momento.

["Indicate with an X ALL the English language levels completed or those you have been enrolled in until now"]

	Cursado **["Completed**	**Cursando** **In progress**	**Aprobado** **Approved"]**
a. Nivel 1 ["Level 1"]	☐	☐	☐
b. Nivel 2 ["Level 2"]	☐	☐	☐
c. Validación nivel 1 y nivel 2 ["Validation level 1 and level 2"]			☐
d. Validación Nivel 2 ["Validation level 2"]			☐
e. Homologación Nivel 1 y Nivel 2 de acuerdo al resultado obtenido en inglés en la prueba **SABER 11** ["Homologation level 1 and level 2 according to the result obtained in the standarized test **SABER 11**"]			☐

4. Indique durante cuánto tiempo ha recibido clases de inglés como lengua extranjera (Tenga en cuenta su formación básica, media y superior o cursos con entidades privadas)

["Indicate the time you have received formal instruction in learning English as a foreign language. Take into account the classes received in elementary school, high school, university, English courses in private institutions"]

a. Entre 0 y 5 años ☐ ["Among 0 and 5 years"]

b. Entre 5 y 10 años. ☐ ["Among 5 and 10 years"]

c. Entre 10 y 15 años. ☐ ["Among 10 and 15 years"]

d. Entre 15 y 20 años ☐ ["Among 15 and 20 years"]

e. ¿Otro? ¿Cuál? _____ ["Other? Which one_____"]

5. Indique el número de horas en el que recibe clases de inglés semanalmente

["Indicate the number of hours in which you received English classes weekly"]

a. 2 horas ☐ ["2 hours"]

b. 4 horas ☐ ["4 hours"]

c. 6 horas ☐ ["6 hours"]

d. ¿Otra.? ¿Cuál? _____ ["Other? Which? _____"]

6. Indique el número de horas de trabajo independiente que generalmente dedica a esta materia semanalmente.

["Indicate the number of hours of independent work you devote to this subject weekly"]

a. Entre 1 y 2 horas ☐ ["Among 1 and 2 hours"]

b. Entre 2 y 3 horas ☐ ["Among 2 and 3 hours"]

c. Entre 3 y 4 horas ☐ ["Among 3 and 4 hours"]

d. ¿Otra? ¿Cuál? _____ ["Other? Which?_____"]

Sección 1: Entrevista escrita ["Section 1: Written interview"]

A continuación, encontrara una serie de afirmaciones y/o preguntas relacionadas con su experiencia de aprendizaje del inglés. Lea cada una cuidadosamente antes de responder.

["Here you will find several statements and/or questions related with your English language learning experience. Read each question carefully before answering it"

7. ¿Conoce las estrategias que le permiten comunicarse efectivamente en inglés?

["Do you know the strategies to communicate effectively in English")

SI ☐ **NO** ☐

["YES"] **["NO"]**

Si su respuesta es afirmativa mencione dicha estrategia(s) y explique brevemente como mejora (n) sus habilidades comunicativas

["If your answer is affirmative, mention the strategy (-ies) and explain briefly the way they improve your communicative skills"]

Ejemplo: Las actividades enfocadas a completar cierta información utilizando preguntas y respuestas favorecen mi aprendizaje y habilidades comunicativas porque aprendo expresiones y vocabulario que puedo utilizar en situaciones reales.

["Example: The activities focused on completing certain information using questions and answers, favor my learning and communicative skills because I learn expressions and vocabulary, which I can use later in real communicative situations."]

_____
_____
_____
_____

8. ¿Qué tipo de actividades promueven la interacción oral en inglés en el aula?

Explique brevemente su respuesta.

["What type of activities Foster oral language interaction in the classroom"?]

Ejemplo: En mi opinión los juegos de roles promueven la interacción porque es una oportunidad para poner en práctica el vocabulario, las expresiones la gramática y la pronunciación que hemos aprendido en clase.

["In my opinion, role playing fosters oral interaction as it is an opportunity to put into practice the vocabulary, the expressions, and the grammar learned in the class."]

_____
_____
_____

9. ¿Cuándo interactúa en inglés, que encuentra particularmente más difícil?

["When you are interacting in English, what do you particularly find more difficult?"]

Indique con una X. Puede marcar más de una opción

["Indicate with an X. You can mark more than one option"]

Formular preguntas ☐ Utilizar suficiente vocabulario ☐ Hablar sin usar su lengua materna ☐
[Asking questions Using enough vocabulary Speaking without using my native language]

Responder preguntas ☐ Organizar ideas ☐ Tener fluidez ☐
[Answering questions Organize ideas Getting fluency]

10. ¿Considera que el proceso de desarrollo de la habilidad comunicativa oral, es fundamental dentro del aprendizaje de una lengua extranjera?

["Do you consider the process to develop oral communication skills is essential in the learning of a foreign language?"]

SI ☐ **NO** ☐

YES ☐ **NO** ☐

Si su respuesta es afirmativa, explique brevemente la razón y/o razones
["If your answer is affirmative, explain your reason or reasons briefly"]

_____
_____
_____
_____

11. Cuando debe completar una tarea que requiere interactuar utilizando la lengua extranjera (inglés) ¿En qué porcentaje (aproximado) utiliza el inglés?

["When you are asked to complete a task, which requires interacting using the foreign language (English) how much time do you approximately speak in English?"]

a. Entre 80% y 100% ☐ ["Among 80% and 100%"]

b. Entre 60%y80% ☐ ["Among 60% and 80%"]

c. Entre 40% y 60% ☐ ["Among 40% and 60%"]

d. Entre 20%y40% ☐ ["Among 20% and 40%"]

e. Entre 0%y20% ☐ ["Among 0% and 20%"]

12 ¿De los siguientes tipos de interacción cuál o cuáles le resultan más sencillos al momento de comunicarse? (Puede marcar más de una opción)

["Which of the following types of interaction is simpler for you at the moment of interacting?" (You can choose more than one option)"]

Conversaciones cortas y/o sencillas que involucran lenguaje cotidiano (saludos, despedidas, hablar sobre el clima, hablar sobre actividades de tiempo libre. ect…) ☐

["Short or simple conversations, requiring using everyday language (greetings, leave takings, talking about the weather, talking about free-time activities, etc.)"]

Conversaciones que implican discutir sobre un tema específico, expresar una opinión o expresar acuerdo y desacuerdos (ejemplo: ¿Que piensa sobre el uso de las redes sociales en la actualidad?) ☐

["Conversations implying discussing about a specific topic, expressing agreements or disagreements (example: what do you think about the use of social networks nowadays?)"]

Utilizar el lenguaje de manera funcional (preguntar la hora, pedir y/o dar un consejo, solicitar ayuda, pedir un permiso etc.…) ☐

["Using functional language (asking the time, asking and /or giving advice, asking for help, asking for permission, etc.)"]

Preparar una presentación oral sobre un tema específico que NO requiera interactuar con su audiencia. ☐

["Preparing an oral presentation about a specific topic which NOT requires interacting with the audience."]

Preparar una presentación oral sobre un tema específico que requiera interactuar con su audiencia (formular preguntas o responderlas) ☐

["Preparing an oral presentation about a specific topic which requires interacting with your audience (formulating questions or answer them.)"]

Diálogos que han sido previamente planeados o elaborados. ☐

["Dialogues which have previously planned or elaborated."]

¿Otro? ¿Cuál? ☐

["Other? Which one?"]

_____

13. Dentro de su experiencia de aprendizaje, ¿Cuál o cuáles situaciones de interacción le resultan más difícil (es)? Puede marcar más de una opción.

["According to your learning experience, which interaction situations result more difficult? (You can mark more than one option.)"]

a. Responder preguntas formuladas por el profesor ☐

["Answering questions formulated by the teacher"]

b. Formular preguntas a mi profesor utilizando la lengua extranjera ☐

["Formulating questions to my teacher, using the foreign language"]

c. Formular preguntas a mis compañeros ☐

["Formulating questions to my classmates"]

d. Responder preguntas formuladas por mis compañeros ☐

["Answering questions formulated by my classmates"]

e. Responder y formular preguntas ☐

Answering and formulating questions

f. ¿Otra? ¿Cuál? _____

["Other? Which one? _____"]

14. Las actividades que se mencionan a continuación son típicas en los contextos de Enseñanza. Dentro de su propia experiencia de aprendizaje. ¿Qué actividades le han resultado más útiles para incrementar su capacidad de interacción en inglés?

["The following activities are typical in the English learning contexts. According to your own experience, which ones have been more useful to increase your oral interaction skills?"]

a. Discusiones de clase ☐ ["Class discussions"]

b. Dramatizaciones o Juego de roles ☐ ["Role plays"]

c. Exposiciones ["Oral presentations"]

d. Talleres ☐ ["Worksheets"]

e. Entrevistas ☐ ["Interviews"]

f. Tareas ☐ [" Homework"]

g. Trabajo en grupo ☐ ["Group work"]

h. Ninguna de las anteriores ☐ ["None of the above"]

Otra ¿Cuál? _____ ["Other? Which? _____"]

15. ¿Cuál de los siguientes aspectos siente que debe mejorar para interactuar oralmente de manera efectiva? Escoja una:

["Which of the following aspects, do you need to improve in order to interact effectively"?]

a. Comprender y/o entender mensajes expresados en inglés ☐
["Understanding messages in English"]

b. Formular preguntas adecuadas que me permitan dialogar de manera espontanea ☐
[Formulating suitable questions to talk spontaneously"]

c. Conocer estrategias de aprendizaje para tener una comunicación efectiva ☐
["Knowing learning strategies to have an effective communication"]

16. ¿Cuál o cuáles recursos tecnológicos utiliza con mayor frecuencia para practicar habilidades comunicativas que impliquen interactuar en lengua extranjera? ☐
[**"**Which of the following technological resources do you often use to practice communication skills, implying interacting in a foreign language?"]

a. Correó electrónico ☐
["Electronic mail"]

b. Redes sociales ☐
["Social networks"]

c. Aplicaciones digitales (ejemplo: WhatsApp) ☐
["Digital applications (whatsapp)"]

d. Recursos digitales que requieran utilizar webcam (Skype) ☐
["Digital resources requiring using cams"]

e.¿Otro? ¿Cuál? _____

["¿Another? ¿Which one? _____"]

f. No utilizo ninguna herramienta tecnológica para practicar habilidades comunicativas en inglés. ☐

["I do not use any digital tool to practice my communication skills in English"]

(Si selecciona esta opción explique brevemente la razón)

["If you choose this option, explain the reason briefly"]

_____

_____

_____

17. ¿Cuándo usted debe interactuar en inglés con sus compañeros de manera espontánea, siente que existen barreras psicológicas que le impiden hacerlo?

["When you have to interact in English with your partners spontaneously, do you feel there are Psychological barriers interfering?"]

SI ☐ **NO** ☐

["YES"] ["NO"]

Sí su respuesta es afirmativa. Indique cuál o cuáles. Puede marcar más de una opción.

["If your answer is affirmative. Indicate which or which ones. You can choose more than option:"]

a. Ansiedad ☐

["Anxiety"]

b. Temor a la crítica o evaluación negativa ☐

["Fear of criticism or negative evaluation"]

c. Timidez ☐

["Shyness]

d. Inseguridad ☐

["Lack of confidence"]

e. Prejuicios ☐

["Prejudices"]

f. ¿Otra? ¿Cuál? _____

["Other? Which? _____"]

18. ¿Qué tipo de actividades pueden ser útiles para vencer las barreras psicológicas que le impiden hablar o interactuar en inglés?

["What type of activities can be useful to overcome the psychological barriers interfering when you are speaking or interacting in English"]

a. juego de roles ☐

["role playing"]

b. d**r**amatizaciones ☐

["dramatizations"]

c. actividades que promuevan la interacción espontanea ☐

["Activities fostering a spontaneous interaction"]

d. actividades que fomenten y activen el pensamiento en una lengua extranjera ☐

["Activities fostering and activating thinking in a foreign language"]

e. ¿Otra? ¿Cuál? _____

["Other? Which one? _____"

19. ¿Qué tan satisfecho se siente con la capacidad de interactuar en inglés alcanzada hasta el momento?

["How satisfied are you with the capacity you have reached to interact in English until now?"]

Muy satisfecho ☐ ["Very satisfied"]

☐

Satisfecho ["Satisfied"]

Insatisfecho ☐ ["Unsatisfied"]

Muy insatisfecho ☐ ["Very unsatisfied"]

Ni muy satisfecho, ni muy insatisfecho ☐ ["Neither very satisfied, nor very dissatisfied"]

¡GRACIAS POR SU COLABORACIÓN!

["Thanks for your participation!"]

A 1.2 Instrument 2: Questionnaire 1

Fostering F2F Oral Interaction through PBL

Instrumento 1: Cuestionario

Propósito: Recoger información pertinente acerca las habilidades de interacción oral y las estrategias de aprendizaje que utilizan los estudiantes de pregrado en los cursos de competencias básicas de lengua extranjera (inglés)

[**"Purpose:** To collect information about the undergraduate students'oral interaction skills and their learning strategies"]

Participantes del estudio: Estudiantes de pregrado que estén cursando el tercer nivel de inglés en el centro de idiomas de una universidad pública. (B1 de acuerdo con el Marco Común Europeo. CEFR)

["**Participants of the study**: Undergraduate students who are enrolled in the third English level of the language center of a public university in Nariño according to the Common European Framework CEFR"]

Constructo examinado: Interacción Oral y estrategias de aprendizaje

["**Examined Construct**: Oral interaction and learning strategies."]

Consideraciones éticas de la recopilación de datos: Toda la información suministrada a través de este instrumento es confidencial y será usada únicamente con propósitos educativos, académicos e investigativos.

["Ethical considerations about the data collection: All the information collected is confidential and it will be only used with educational, educative, and research purposes."**]**

TIEMPO ESTIMADO PARA RESPONDER EL CUESTIONARIO: 10-15 minutos aproximadamente

["Estimated time to answer the questionnaire: 10-15 minutes approximately"]

A través de este cuestionario se recolectará información de los estudiantes de pregrado que actualmente están matriculados en los cursos de competencias básicas cursando el nivel pre-intermedio B1. Naturalmente su identidad será respetada y sus respuestas serán utilizadas únicamente con propósitos investigativos.

["Through this questionnaire information about the undergraduate students, who are enrolled in the Fourth English Language Level will be collected. Naturally, their identity and answers will be only used with research purposes."]

Sección 1: Estrategias de aprendizaje e interacción oral

A continuación, encontrara varias afirmaciones relacionadas con las estrategias de aprendizaje e interacción oral. Léalas cuidadosamente y escoja una de las opciones indicadas en cada casilla.

["Section 1: Learning strategies and oral interaction.
In this section you will find several statements related with the learning and interaction strategies. Read them carefully and choose one of the options in each box."]

FOSTERING ORAL INTERACTION AND SELF-REGULATION THROUGH PBL

Afirmaciones

1.Tengo claridad sobre las estrategias que favorecen mi aprendizaje especialmente para comunicarme efectivamente en inglés.

["I know which strategies favor my learning, especially to communicate my ideas effectively in English "]

5 Totalmente de acuerdo ["Totally agree
4 De acuerdo Agree
3 Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement
2 En desacuerdo Disagree
1 Totalmente en desacuerdo Totally disagree"]

2.Los proyectos enfocados a promover la interacción oral en el aula podrían mejorar mi capacidad de aprendizaje autónomo.

["The projects focused on fostering the oral interaction in the classroom might improve my capacity of learning in an autonomous way."]

5 Totalmente de acuerdo ["Totally agree
4 De acuerdo Agree
3 Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement
2 En desacuerdo Disagree
1 Totalmente en desacuerdo Totally disagree"]

3. La capacidad de comunicación e interacción oral que he alcanzado hasta el momento satisface mis expectativas de aprendizaje.

[" The capacity of communication and oral interaction I have reached until know satisfy my learning expectations"]

5 Totalmente de acuerdo ["Totally agree
4 De acuerdo Agree
3 Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement
2 En desacuerdo Disagree
1 Totalmente en desacuerdo Totally disagree"]

4. Resolver situaciones en clases sobre diferentes temas, que me permitan opinar y discutir con mis compañeros podría mejorar mí capacidad oral y habilidad de interacción

["Solving situations in class about different topics which allow me to express my opinion and discussing with my classmates might improve my oral and interaction skills."]

5 Totalmente de acuerdo ["Totally agree
4 De acuerdo Agree
3 Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement
2 En desacuerdo Disagree
1 Totalmente en desacuerdo Totally disagree"]

5. Cuando interactuó en inglés con mis compañeros o profesor(a), empleo más tiempo respondiendo preguntas que formulándolas.

[When interacting in English with my classmates or teacher I spend more time answering questions than asking them]

5 Totalmente de acuerdo ["Totally agree
4 De acuerdo Agree
3 Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement
2 En desacuerdo Disagree
1 Totalmente en desacuerdo Totally disagree"]

6. Promover el trabajo cooperativo y discusión de clase basados en diferentes temas y proyectos similares a los que podría encontrar en el mundo laboral optimiza mis habilidades comunicativas.

["Fostering cooperative work and class discussion based on different topics and projects related to those I might find in the workplace optimize my communication skills."]

5 Totalmente de acuerdo ["Totally agree
4 De acuerdo Agree
3 Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement
2 En desacuerdo Disagree
1 Totalmente en desacuerdo Totally disagree"]

7. Cuando desarrollo una actividad que involucra interactuar con mis compañeros en Ingles de manera espontánea, casi siempre logro completarla satisfactoriamente.

5 Totalmente de acuerdo ["Totally agree
4 De acuerdo Agree
3 Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement
2 En desacuerdo Disagree
1 Totalmente en desacuerdo Totally disagree"]

["When I developed an activity involving interacting with my classmates in English spontaneously, I almost always complete it successfully"]

8. El contenido de las clases de inglés debe tener en cuenta un rango amplio de diversos temas que promuevan la participación.

["The content of the English classes must take into account a wide range of several topics fostering participation."]

5	4	3	2	1
Totalmente de acuerdo ["Totally agree	De acuerdo Agree	Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement	En desacuerdo Disagree	Totalmente en desacuerdo Totally disagree"]

9. Es importante conocer que estrategias de aprendizaje funcionan mejor para promover mi capacidad de comunicación oral, reconociendo sus fortalezas y el progreso que estas me proporcionan.

["It is important to identify which learning strategies work better to foster my oral communication skills, recognizing my strengths and the progress they provide me"]

5	4	3	2	1
Totalmente de acuerdo [" Totally agree	De acuerdo Agree	Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement	En desacuerdo Disagree	Totalmente en desacuerdo Totally disagree"]

10. Cuando escucho a una persona hablando en inglés, me aproximo para establecer una conversación sencilla porque es la mejor oportunidad para practicar mis habilidades comunicativas.

["When I listened to someone speaking in English I approached to him/her to establish a simple conversation because is the best opportunity to practice my communication skills."]

5	4	3	2	1
Totalmente de acuerdo ["Totally agree	De acuerdo Agree	Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement	En desacuerdo Disagree	Totalmente en desacuerdo Totally disagree"]

11. Generalmente me siento cómodo interactuando con otra(s) persona(s) en inglés.

["I usually feel comfortable interacting with other People in English"]

5	4	3	2	1
Totalmente de acuerdo [Totally agree	De acuerdo Agree	Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement	En desacuerdo Disagree	Totalmente en desacuerdo Totally disagree]

12. Los recursos tecnológicos podrían ser útiles para promover las actividades de interacción oral.

[" The technological resources might be useful to foster the oral interaction tasks."]

5	4	3	2	1
Totalmente de acuerdo [Totally agree	De acuerdo Agree	Ni en acuerdo/ ni en desacuerdo Neither in agreement or disagreement	En desacuerdo Disagree	Totalmente en desacuerdo Totally disagree]

¡GRACIAS POR SU COLABORACION!

["Thanks for your participation!"]

A 1.3 Instrument 3: Oral Test

Fostering F2F Oral Interaction through PBL

Instrumento 1: Examen Oral

Propósito: Evaluar las hábilidades de interacción oral de los estudiantes del nivel pre-intermedio (B1) llevando a cabo diferentes tareas que implican intercambiar ideas con sus compañeros acerca de un tema y /o situación planteada.

[“Purpose: To evaluate the oral interaction skills of the students enrolled in the pre-intermediate level, (B1) asking them to perform different tasks requiring exchanging ideas with their partners about a specific topic or a raised situation”]

Participantes del estudio: Estudiantes de pregrado que estén cursando el tercer nivel de inglés. (Nivel B1 de acuerdo al Marco Común Europeo MCER)

[“Participants: Undergraduate students who are enrolled in the third English level (level B1 according to the Common European Framework CEFR”)

Constructo examinado: Interacción Oral

[“Examined construct: Oral interaction]

Consideraciones éticas de la recopilación de datos: Toda la información suministrada a través de este instrumento es confidencial y será usada únicamente con propósitos educativos, académicos e investigativos.

[“Ethical considerations about the data collection: All the information collected through this instrument is confidential and it is only used with educative, academic, and research purposes.”]

TIEMPO ESTIMADO PARA DESARROLLAR LA EVALUACIÓN: 20 minutos.

A través de esta evaluación se recolectará información sobre la competencia oral de los estudiantes de pregrado que actualmente están matriculados en los cursos de competencias básicas cursando el nivel pre-intermedio B1. Naturalmente su identidad será respetada y sus respuestas serán utilizadas únicamente con propósitos investigativos.

[“Estimated time to develop the test: 20 minutes. Through this evaluation information about the communicative competence of the undergraduate students enrolled in the pre-intermediate

English level (B1) will be gathered. Naturally their identity will be respected and their answers will be used only with research purposes."**]**

Sección 1 ***["Section 1"]***
Instrumento: Examen Oral (parejas) ***["Instrument: Oral Test (pairs)***
Evaluador _____ ***["Evaluator_____"]***
Nivel: Pre-intermedio (B1) ***["Level: Pre-intermediate B1"]***
Tiempo estimado: 15-20 min. ***["Estimated time: 15-20 min"]***

1. INTERVIEW. Interview your partner to complete the chart below. Use a suitable question for each blank.

Name	**Age**	**Mobile Phone**	**Free time**	**Last Holiday**	**Life Experiences**	**Future Plans**

2. MAKING DECISIONS. In this task, you and your partner are going to talk each other about a situation described by your teacher, you will be given a few seconds to watch some pictures and get some ideas, before starting speaking. (You have about 2 minutes to talk)

Situation 1 You and your partner have been invited to a friend's birthday party. You have decided to buy him/her a present together. Look at the items below, talk to each other and decide which one is the ideal, taking into account his/her likes or dislikes.

1. a box of chocolates
2. a mobile phone
3. a pair of shoes
4. a wallet
5. a book

Students will be assessed considering their language accuracy, fluency, turn talking and negotiation of meaning.

Situation 2 You are the winner of a quiz competition. You have been offered to spend a day with a famous person. Talk together about the different people you could meet. Then decide which one to choose.

1. Barack Obama
2. Pope Francisco
3. Shakira Mebarak
4. Malala Yousafzai
5. Katherine Ibargüen
6. Jim Parson

3. COMPARING AND CONTRASTING. Look at the four pictures provided by the tester and identify the similarities and differences between them (celebrations, and communication now, and in the past). Interact with your partner about the topic suggested.

4. PROBLEM SOLVING: Read the lateral thinking situations below, then discus with your partner what you think happened. **There are no correct or incorrect answers in this task**. You will be given some minutes to organize your ideas and read the **example** below.

A man rode into town on Monday. He stayed
for three nights and then left on Monday.
How come?

Answer: The name of the horse is Monday

1. Tom is studying for an important test in a dark room. All the lights are off and he has no special night vision or anything. How is he studying?	2. A man went to a party and drank some punch. Then he left early. Everyone else who drank the punch later died from poisoning. Why didn't the man die?

3. There are six eggs in a basket. Six people each take one egg. How it can be that one egg is left in the basket?

Considering there is no correct or incorrect responses for the situations described, students will be assessed in terms of their language accuracy, fluency, turn talking and negotiation of meaning.)

Explanations

Situation 1: Tom is blind; he is studying by reading Braille.

Situation 2: Someone put a poisoned ice cube in the punch and when the man drank it, the ice had not melted yet.

Situation 3: Someone takes the basket with the last egg still in it.

Appendix B: Pre-assessment

1. MAKE A GUESS. Can you identify the problems below?

(Some letters are given to help you

S __ r __ s __ **p__ __ l__ __ __ __ n** **P__ a __ __ i__ S__ __ g__ r ____**

2. PROBLEM SOLVING TASK: What is a dilemma? Do you usually face dilemmas?

2a. Look at the pictures in the text below. What do you think is Linda's problem?

After discussing with your group, read the complete text.

A REAL DILEMMA

Who's Linda? Why does she have a dilemma?

Linda Gomez is a 26-year-old sales representative who works for Nestle Company in Bogota. Linda is in in charge of visiting customers all over the world. She is very happy working there and she loves her job.

Recently, her boss. Mr. Barrera has asked her to travel to Brazil next month to promote a new product and find more customers. However, Linda's husband bought some tickets to travel to England next month and having a wonderful time with her and their two sons.

Linda is very responsible and hardworking and she knows traveling to Brazil is a great opportunity to advance in her career, but she has not spent so much time with her family. What can she do?

3a. INDIVIDUAL TASK: WHAT SHOULD LINDA DO?

After reading the text, think about some suitable solutions for Linda's problem. You will be given **2** minutes to prepare your answer, before presenting it to your group. You can use some of the expressions in the "useful language box" and write down your ideas, but remember you are not allowed to read them later.

2b DISCUSSION: Write down the names of all members in your group in the chart below. As soon as you are ready cover **your** notes in exercise **2a**, and explain the solutions, you have thought about to your partners and **interact** with them, asking questions**. (Ex: What do you think? Do you agree or disagree with… etc.?)** While someone is speaking, the other members of the group are listening carefully while completing the chart below. (Use a stopwatch to check the time each one spends speaking). **If you do not understand anything, ask your instructor before starting!**

NAME	*TIME (sec.)*	*NUMBER OF QUESTIONS*
1.Andrea Ramirez	*1.50 sec*	*2 questions*

Example:

NAME	TIME (sec.)	NUMBER OF QUESTIONS
1.		
2.		
3.		
4		
5.		

GROUP WORK TASK-ORAL PRESENTATION

When did you last experience stress?

DESIGNING: Read the PROBLEM below.

The picture in your test shows a very small village. About 50 habitants live here, and they are suffering from stress (kids, teenagers and adults.) The major of the village ask you and your partners to present some creative solutions that help the people of the town to relieve this problem.

1. A. Now work cooperatively and prepare a short oral presentation for the class (5min) using the materials provided by your teacher and following the steps below:

a. Think about an original name for the village (*Ex: Megastressity*)

b. Design a poster including **a mind-map or graphic** presenting the proposal to solve the problem.

c. Be creative and remember everyone group must participate in the oral presentation.

d. Once you finished it, ask 2 or 3 questions to your audience (ex: What do you think about this idea. What is your opinion about…? What are the advantages or disadvantages of…?)

NOTE: Choose the role you are going to play in the group (the monitor, the scriber, the speakers, the spelling and grammar checkers, the main speakers)

Appendix C: Post-assessment

1 Group work: You will be presented with 4 different problems. Read them carefully with your group.

JIMMY Two years ago, I got a degree in Architecture from one of the most prestigious universities in my country, as the career was expensive, I made a loan and now I must pay it! However, I cannot find any job. Employers say I am too young and I do not have enough experience. What can I do?
ANNE & JEAN We are all students from a public University. Most of us are working to afford our careers, paying for our fee, textbooks and copies. As the campus university is too far we also need to use public transport every day which is too expensive. We want to organize a meeting and present some solutions to the University director. Any ideas?
MARCO Hello! My name is Marco. I am a personal assistant. I have a full-time job from Mondays to Fridays. I usually start working at 8:00 a.m. and I finished at 5:00 p.m. It is supposed, I am only in charge of dealing with phone calls, correspondence, and organizing meetings and appointments. Unfortunately, the new sales manager usually asks me to stay in the office for two more hours. I have to check the bills and even to prepare her coffee. What should I do?

LILIANA

Hi! I think the peace process in Colombia is not reliable.
I live in Paris and many people seem to be satisfied with the solutions given to my country, but when I speak with my family and friends, who are living there, they tell me there are many disagreements. What do you think? What is the best solution?

2. In groups choose one the problems you would like to offer solutions to. Then, **individually** prepare a short suggestion. (2 minutes)

3. Once you are ready, discuss your ideas with your group while completing the chart below.

Example:

NAME	*TIME (sec.)*	*NUMBER OF QUESTIONS*
1.Andrea Ramirez	*1.50 sec*	*2 questions*

NAME	TIME (sec.)	NUMBER OF QUESTIONS
1.		
2.		
3.		
4		
5.		

4. Now, in groups, prepare a short presentation, describing the problem and the solutions discussed. Include a creative product as part of your presentation too (example: a poster, a t.v commercial, a role-play, etc.…)

Appendix D: Triangulation

Patterns	Informal Interviews to Students	Classroom Observation	Teacher's Journal	Pre-Assessment	Post-Assessment
	"Solving problems in the class was useful to foster dialogues, conversations and the topics were appropriate to interact with each other"	Students solved some dilemmas and discussed some personal problems while interacting to each other. Most students were motivated and exchanged ideas spontaneously in face-to face tasks.	The face-to face tasks provided learners with opportunities to exchange opinions and they were a little less afraid to ask questions	A small number of students (15) contributed with a quick organization of the groups. As soon as the instructions were explained, participants started working. I realized that during the first exercise, several students got resistance to interact and they looked ashamed, but soon they were engaged with the task, and they made efforts to use the target language. When changing to the second task, some students (one group) made an effort to avoid start speaking	At the beginning some students used the first language, but as soon as they started planning the answers individually and got ready to interact, all groups were speaking using the target language, Something remarkable was that the class environment reflected spontaneous interaction and participants took more risks to ask questions and they got confidence on them as well as on their partners.
	"Problem based learning help me to get rid of my shyness to interact more effectively with my peers"	Students interacted with their teacher and their peers as well. During the group-working problem solving task students were highly motivated, exchanged opinions and interacted each other.	Something affecting interaction when working in groups and presenting the debate was the lack of vocabulary, especially to support their views, but students used agreement and disagreement expression and the cooperative work and roles assigned were	A small number of students (15) contributed with a quick organization of the groups. As soon as the instructions were explained, participants started working. I realized that during the first exercise, several students got resistance to interact and they looked ashamed, but	When students were provided with the materials to work in the problem-solving tasks, enhancement and motivation became more visible. Students were given with cards labeling the roles they might select to participate in the group work task, and this time there was

			more visible.	soon they were engaged with the task, they made efforts to use the target language	much more order.
	"Problem-solving activities were useful to identify my strengths and weaknesses, because they provide opportunities to self-evaluate our performance and improve in all the aspects we need to." "Solving and discussing problems allow us to learn vocabulary related to a specific contexts, identifying which words are useful to interact with each other"	Students enrolled in careers like laws played leaders role and were very spontaneous. There was too much cooperation and the presentation provided good opportunities to interact. However, lack of vocabulary and knowledge about topic make more difficult to foster debate as Students did support or justified their answers properly.	Students in both groups showed a great interest at the beginning of the lesson (mainly for the pictures showed) and participate of the initial questions to discuss the problem, but the complexity of videos represented a challenge for lower-level students, so they checked the vocabulary constantly, so they were willing to work with a peer.	Although an atmosphere of engagement was perceived during the pre-tests, some of the problems affecting interaction were related to the lack of vocabulary and little risks to ask questions, which limited spoken interaction.	When students spoke each other, they exhibited more confidence to ask questions and they were more natural when sharing their views
Interaction	"Solving problems offering creative solutions was useful for my learning, it helps me to interact, to express my opinion and to stimulate imagination."	Cartoons caught learner's attention and awake their interest. Students interacted with their teacher and their peers as well. During the group-working problem – solving task students were highly motivated, exchanged opinions and interacted to each other.	Once students were organized in groups and they read instructions, they decided which problems they would like to talk about, and the interaction process took place. When students spoke each other, they exhibited more confidence to ask questions and they were more natural when sharing their views, but there were still some troubles with vocabulary, especially when referring to technical terms.	The third task not only refreshed the class environment, but also enhanced students' interest as long as the task was taking place, but cooperation skills were not so visible. Remarkable problems were related to the lack of vocabulary, especially to ask questions and to propose different solutions to the traditional ones.	Students got confidence on them as well as on their partners, clues like smiling each other, negotiating meaning; gestures to indicate their peer to ask a question were also visible.

Group work	"Working on solving problems helps me to increase my vocabulary to speak, because it required to be witty, using different terminology"	During the group-working problem – solving task students were highly motivated, exchanged opinions and interacted to each other. Students enrolled in careers like laws played leaders role and were very spontaneous. There was too much cooperation and the presentation provided good opportunities to interact.	Most students showed enough interest for learning the vocabulary and the grammar taught. When students were asked to interact with each other about burglary and crime, they used cooperative work.	Something remarkable about this exercise was the participants' interest and their versatility to accomplish different tasks in short time, as well as their creativity when using the materials.	When students spoke each other, they exhibited more confidence to ask questions and they were more natural when sharing their views, but there was still some troubles with vocabulary, especially when referring to technical terms
Creativity	"It is better to work problem-solving tasks in the classroom, if these activities are replied outside the class; they would be like homework. Moreover, it would also reduce the opportunities for interaction."	Students solved some dilemmas and discussed some personal problems while interacting to each other. Most students were motivated and exchanged ideas spontaneously in face-to face tasks. They also worked cooperatively when necessary.	Students were creative to develop their products and selecting a problem to prepare their presentations. They designed posters, stickers, photo stories and interact effectively during their group-work presentations	Something remarkable about this exercise was the participants' interest and their versatility to accomplish different tasks in short time, as well as their creativity when using the materials	While working in groups and designing the creative product, the creativity features exhibited in the previous session were observed, when making the presentation of the solution, there was a sense of enthusiasm in the class that keep everybody interested