Design thinking as a strategy to strengthen 21st-century learning skills in the EFL class with seventh graders

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INTRODUCTION

Learning a foreign language is one of the needs globalization has created and reinforced in the last decades. As Palacios-Hidalgo, et al. (2021) said, “The 21st century has triggered profound changes in society. [...] also posed new social demands, such as the ability to communicate with people in an increasingly multilingual and multicultural world” (p. 76). Since being able to communicate using various languages different from the mother tongue enhances the opportunities to get a well-paying job (Gomez, 2020) and “English, being the first world language, [...] and the most widely used language in the world” (Rao, 2019, p. 66), people started to learn this language to meet these needs and be competitive in the new era. Another important need created by globalization is the development of new competences, known as 21st-century skills, that allow people to be competitive and successful in this century to excel in their careers and contribute to developing their countries (Ananiadou & Claro, 2009). The global impact of education has led to the development of national and local policies designed to enhance the quality of education in response to the demands of the international market (Osorio de Sarmiento, et al, 2020).

Considering the demands the new era has brought, governments of Latin American countries are promoting not only the acquisition of English as a foreign language but also the development of 21st-century skills. The 21st-century skills are those that allow learners “to benefit from the emerging new forms of socialisation and to contribute actively to economic development under a system where the main asset is knowledge” (Ananiadou & Claro, 2009, p. 5). These skills consist of three sets, commonly referred to as the 3Ls: life skills (FLIPS), literacy

skills (IMT), and learning skills (4Cs) (Ministry of Education, Government of India., n.d.). Our focus was primarily on learning skills.

The Colombian government's efforts to fulfill these needs have been implementing different programs throughout the years. When it comes to enhancing 21st-century skills, Colombia has implemented the Sacúdete strategy which supports the development of these skills in young learners "to formulate and successfully promote their life projects" (Inter-American Development Bank [IDB], 2019). Despite its efforts, results from the Program for International Students Assessment (PISA) have shown poor performance in collaborative work and problem-solving tasks and conclude that young people who graduated from high school in Colombia "have cognitive deficiencies as well as lack of 21st century skills" (Inter-American Development Bank [IDB], 2019).

When it comes to learning a foreign language, the Ministry of National Education (2021) in Colombia has set as one of the main purposes of its educational program to provide a competitive, relevant, and qualified education aiming for a B1 level of proficiency in English for all high school graduates. The Colombian government has created programs such as *Programa Nacional de Bilingüismo*, *Colombia Very Well*, and *Colombia Bilingüe*. However, this goal has not been reached, as seen in the results of the 2023 edition of the EF English Proficiency Index ranks, Colombia is the 75th country on the list and has a low English proficiency level, along with other countries like Mexico, Panama, and Ecuador. Colombia, as well as Mexico and Ecuador, are in the group of countries with very low proficiency (Betancourt & Ramos, 2024)

Considering these outcomes mentioned above, one factor that may contribute to the low proficiency of Colombian young learners is the lack of interest in their English learning process because of sociocultural aspects that affect their motivation (Bastidas & Muñoz, 2020). What is

more, “various researchers have developed taxonomies of factors influencing second/foreign language learners’ attitude which in turn affects their language proficiency, including personality factors, educational factors, social factors, and others like age and sex” (Ehrman, 1996; McDonough & Shaw, 1993; Spolsky, 1989; Van Ells et al., 1984 as cited in Getie, 2020, p. 8). According to Valdes, 1986 (as cited in Uba, 2023) “Sociocultural variables in a specific learning context are very important for language teaching and learning because they conceptualise how teachers and learners socially construct knowledge in many classroom settings” (p. 484). That is why it is important to avoid the negative consequences these factors may have on students' learning results. Therefore, educators are invited to provide functional learning environments that favor learning by considering not only the sociocultural aspects that surround learners but also their voices, feelings, and interests to strengthen 21st-century skills in the English learning process (OECD, 2013).

One of the most structured approaches that can be used to strengthen 21st-century skills in a learning environment is design thinking. The design thinking (DT) approach has five stages which are empathize, define, ideate, prototype, and test. These five stages can be done in an order and then any of the stages can be repeated if necessary (Al-Zebdyah, 2022). According to Tsai et al. (2023), DT is the best path to enhance learners’ motivation and improve 21st-century skills, such as critical thinking and problem-solving. As was mentioned before, 21st-century skills are divided into three categories. First, life skills are flexibility and adaptability, leadership and responsibility, initiative and self-direction, and social and cross-cultural interaction. Second, literacy skills are information, media, and technology literacy. Third, learning skills include critical thinking, creativity, innovation, collaboration, and communication. (Ministry of Education, Government of India., n.d.) While all three categories of 21st-century skills are

discussed, this study focuses on the learning skills. Considering learners' interests and implementing design thinking can contribute to enhancing the language learning process while promoting the development of 21st-century skills, such as creativity, critical thinking, and social and intercultural abilities, within learning environments. Design thinking was chosen as the approach used for this project.

This study was conducted to evaluate a pedagogical proposal to strengthen 21st-century learning skills in the English as a Foreign Language class with seventh graders based on a design thinking approach. This research was carried out in a private school in Floridablanca, Santander. The academic objectives of the institution are to strengthen communicative competence in English and to develop learning skills such as critical thinking and collaboration by fostering environments that facilitate the accomplishment of these learning outcomes. Participants were seventh-grade students aged between 12 and 13 years old, who received seven hours of English lessons a week. Students were asked to work on different activities to improve their learning skills and their language learning process. However, this sample was not homogeneous because some participants had higher levels of proficiency, and some skills were more developed than others because of different cultural factors.

To collect data, the following instruments were used. First, two questionnaires were conducted, one to identify seventh-grade learners' interests and the other one to identify their perceptions towards the English class. Second, participant observations were conducted during the implementation of the pilot in the classroom. Finally, some interviews were carried out to reflect on the results of implementing the pilot of design thinking approach activities on learners' learning process. Based on the above, the research question that led to this study was: To what extent can the design thinking approach enhance 21st-century learning skills in an EFL class?

LITERATURE REVIEW

Much research has been done to find effective ways to develop 21st-century skills in young learners because "nowadays the ability to learn, communicate, collaborate, to think creatively and solve problems in a digital information environment has become crucial." (Lazorenko & Krasnenko, 2019, p. 249). In this section, different aspects that contribute to the strengthening of 21st-century skills in the English learning process are discussed. Firstly, the focus is on 21st-century skills, which are those skills that enhance learners' learning competences. Secondly, the English learning process, characterized by the interaction between learners and educators within a learning environment, is examined. Subsequently, attention is given to learning environments, defined as all elements that surround the learning process. Lastly, design thinking, known as a problem-solving approach, that focuses on understanding learners' needs to strengthen their learning process, is explored.

21st-Century skills

Nowadays, people are required to develop various skills that are necessary to navigate efficiently and successfully in this new era. These skills are known as 21st-century skills, which "have been identified by UNESCO, OECD, and others as competences required for a sustainable future of the knowledge society" (González-Salamanca et al., 2020, p. 1). These skills are essential in different fields of society, like work and employment, health, science and technology, and education, among others. Therefore, it is necessary to encourage the development of both hard and soft skills, as well as competences, such as critical thinking,

creativity, communication, and cooperation, especially in education (González-Salamanca et al., 2020).

According to the Ministry of Education, the Government of India (n.d.), there are three different types of 21st-century skills: life skills, literacy skills, and learning skills. Being learning skills (known as "The Four C's"), the ones this study focused on, in which critical thinking, creativity, collaboration, and communication are included. According to Hummel (2024), students can solve problems and discover new things through critical thinking. Therefore, this is one of the most important skills they can develop to use in their professional lives in the future. Creativity is also important since it helps them to adapt and see things from a different perspective to find innovative solutions. Another key element is mastering collaboration because it might be a difficult skill to develop, but it is a useful one to work with others, compromise, and come to the best result to solve issues. Effective communication is crucial for clear idea sharing and prevents misunderstandings. Strong communication skills make someone a valuable team member.

Figure 1: Illustration of the three types of 21st-century skills

Note: The figure shows one type of 21st-century skills, which is Learning Skills, according to B. Hummel (2024).

As Gonzáles-Salamanca et al. (2020) posit, the development of these skills is not an innate human capacity. Consequently, it is vital to cultivate these abilities. In the educational context, numerous educators have devised efficacious strategies, including flipped learning, mind mapping, discussion clubs, and “brainstorming,” among others. However, even though strategies have been designed to develop these skills that are essential to succeed in a globalized world, according to Fandiño (2013), based on a review of Colombian scholarly publications there is still a lot to do to incorporate the different practicevs focused on learning 21st-century skills such as creativity, critical thinking, and collaboration in the classroom. Concerning this, the author stated that

> Students need to become not only literate, but also able to use that literacy within their personal information environment in order to succeed now and in the future [....] As a result, students need to learn to develop a whole new range of English language literacies, which involve emerging forms of communication, reading, and writing using online technologies (Fandiño, 2013, p. 201)

According to the British Council (n.d.), there are some recommendations for developing 21st-century skills in the EFL classroom. First, it is important for educators to make the experience personal by finding what they like and what they are curious about. Second, grab their attention by providing authentic content taken from a source online so that they know it is not going to be work from the book. Third, use relevant and entertaining topics that are appealing to learners. Fourth, low-prep activities that demand high-level thinking from learners by creating discussions, debates, or collecting information to create bar graphs or pies. Fifth, monitor learners during activities and provide feedback at the end. Finally, reflect on your work on your own or with peers.

English learning process

According to The World Encyclopedia, 1983 (as cited in Benzerrough, 2021), “Learning is the process by which changes in behaviour result from experience or practice. By behaviour, is meant any response that an organism makes to its environment” (p. 55). Consequently, learning is an individual’s adaptation to their surroundings. By developing 21st-century skills such as critical thinking, problem-solving, communication, and creativity, learners are keeping up with the demands of the globalized world and are adapting to it. Learners should be able to take this knowledge acquired through significant experiences and apply it in real-life situations (Benzerrough, 2021). Learners’ voices and interests, as well as learning environments, are interrelated. OECD (2013) studied the term learners’ voice, which is defined as learners’ thoughts about the learning environment and decisions they consider should be taken in the designing of these environments. Therefore, it is crucial to place learners in the central part of the learning process to enhance their attention, foster better understanding, and make them more committed to their learning.

Another demand of this new era has to do with English learning. According to Motta Bustos et al. (2024), “English is a Universal language. It is a means of communication not only among native speakers of English but also has become a means of communication between many of its speakers as a second or a foreign language” (p. 342) that is why it is also considered a lingua franca, which is defined as a common language used by people who do not share the same native language so “is often applied to the English language” (Todorova & Todorova, 2018, p. 336). In addition, according to Benzerrough (2021), teaching English as a Foreign language also requires educators to provide students with a fostering learning environment and requires educators to consider students’ learning styles and interests. In this regard, Jiménez & Betancourt

(2024) state that Colombia has a significant history in teacher training, particularly with regard to the integration of foreign languages into the curriculum. From the colonial period to the present day, the national government has implemented policies aimed at enhancing the proficiency in foreign languages among the population.

Hannon's 2012 study (as cited in OECD, 2013) explained that "one of the key factors in increasing engagement is the extent to which the learners feel a sense of agency over their own learning" (p. 120). Learners are active participants and educators should encourage this participation to ensure engagement and learning. Student-centered learning is one approach that encourages learners to take an active role in their educational path.

Not only should these above-mentioned aspects be considered for effective learning, but thoughtful planning for each class should also be important. Lesson plans are guides that help educators to think about how and what to teach. It also provides learners with confidence, as they can see "whether a teacher has thought about the lesson, and they respond positively to those that have" (Benzerroug, 2021, p. 56). While planning, educators should consider learners' prior knowledge and have clear and reachable objectives to choose the best approach to design their lesson plans. That is why, bearing in mind our objectives and learners' insights, design thinking was the approach used to plan all the activities that were carried out on the pilot. These activities could include a communicative component in English, which allows learners to develop the skills to use the language in real-world situations (Benzerrough, 2021). Additionally, the use of technologies, such as computers, the internet, videos, and other tools make language teaching and learning more interesting and engaging (Cela, 1994 as cited in Benzerroug, 2021, p. 58).

Learning environments

According to Vite's 2014 study (as cited in Rodríguez & Araque, 2020), it is essential to define an environment as everything that surrounds the teaching process, which includes affective, cultural, economic, and social aspects. There are three types of environments which are the classroom, real, and virtual. The first one is a traditional classroom, the second one refers to spaces such as libraries and laboratories, and the third one corresponds to a virtual scenario in which technologies are implemented (Vite, 2014). In an ideal learning environment, good interaction and communication should take place between learners and educators. Duarte's 2003 study (as cited in Rodríguez & Araque, 2020) explains that a learning environment should have these instances; the first one is information, where instructions and knowledge are exposed to students. The second one is interaction, where the main aspect is the interrelation of participants in an educational context. The third one is production, where learners can create something to evidence what they learned. Finally, the exhibition, where students show the product and the results of what they have learned, can happen in or outside a learning environment in different ways.

It is also necessary to point out that as OECD (2013) affirms, the four key elements of an innovative learning environment are learners, educators, content, and resources. First, when it comes to educators, their role is to provide students with learning experiences that favor the learning process and the development of skills (Vite, 2014). However, this is not always happening as it should, due to the lack of qualified teachers in Colombian schools (Porras, 2007 as cited in Valle et al, 2022). Second, learners' attitudes and perceptions should be taken into consideration to have effective learning environments. Teachers should be creative and innovative in designing learning environments. Third, choosing meaningful and useful content

plays an important role because it can keep learners engaged and motivated and leads to positive outcomes. That is why Parker et al, (2017) state “It is important to give students influence over how and what they learn in the classroom” (p. 37). Finally, educators should adapt resources based on linked objectives, the syllabus, and learning activities, to fit learners' needs and to get them involved in their learning process. Educators should consider learners’ social backgrounds and lives to select and design the correct classroom material to enhance students’ competences.

Moreover, there are four aspects of a learning environment in which changes can or should be made to be innovative. These aspects are educators, learners, learning time, pedagogy, and assessment. Design, evaluation, and feedback should be made to direct those changes when redesigning learning environments (Vite, 2014). Having a good learning environment is also important since good interaction and communication should take place between learners and educators. Educators should promote learning environments that favor learning and understanding students’ needs to help them develop their 21st-century skills. According to Rodríguez & Araque (2020), bilingual education does not focus only on languages but also on making students global citizens and responsible for learning from different cultures and their vision of the world. It is important to remember that learners are active participants in this process; their voices should be considered and if this happens, they will be more engaged. The purpose of change is to have innovative learning environments. There are some dimensions and perspectives to consider, having a formative cycle, including learning leadership, fostering self-reflection and working collaboratively, bringing challenges, assessing purposefully, and having learners as the center of designing.

Odanga’s 2018 study (as cited in Ternenge & Torkuma, 2021) states that “socio-cultural factors are those factors that affect the academic performance of students but originate from the

unique circumstances surrounding their school or home" (p. 6). Some of the sociocultural aspects that affect learning environments are "attitude, stereotyping, social distance, motivation, and personality" (Tawfiq, 2020, p. 83). Even though those factors may not always arise from the learning environments themselves, it is important to keep learners' context and reality in mind since they affect their attitude, performance, and learning process. "The manner in which learners respond to school and other educational settings, and the benefit they derive from these experiences, is influenced by the socio-cultural environments in which they are socialised and schooled" (McInerney, 2010 as cited in Mavuru, & Ramnarain, 2017, p. 1). Additionally, by incorporating these factors into the ESL class, educators can create a better learning environment with more authentic, significant, and engaging lessons. According to Vite (2014), achieving success in learning is directly related to the appropriate design and selection of learning environments. Efforts made to enhance lessons may improve students' motivation, participation, and interaction, and can also enhance their confidence. Therefore, a well-equipped learning environment and teachers' training will facilitate teaching practice (Rashid & Rahman, 2020). Finally, as Romero's 1997 study (as cited in Rodríguez & Araque, 2020) stated, a learning environment is essential not only for the implementation of learning tasks but also because it determines the quality of education.

Design thinking

According to Brown, 2008; Carroll, 2014; Dorst & Cross, 2001; Howard et al., 2008; Mosely et al., 2018; Razzouk & Shute, 2012 (as cited in Calavia et al. 2022), "Design thinking is a perspective of thinking based on the formulation and resolution of complex problems through an analytical and creative human-centered process, which involves people from the beginning" (p. 2). Research has indicated that design thinking is a solution-based approach that can be used

to address problems educators encounter every day in their classrooms (Luka, 2014). Al-Zebdyah (2022) stated that using design thinking in education facilitates students to solve real problems that are related to their lives, using content learners have learned before to solve those problems. Therefore, based on literature, design thinking is not only a great tool to strengthen the language learning process, but also one of the most structured approaches that can be used to the development of 21st-century Learning Skills, such as critical thinking, problem-solving, collaborative work, and creativity in students.

As cited in Al-Zebdyah's study (2022), design thinking has five stages, which can be carried out in order, or each stage can be done twice or more if necessary to come back and repeat it to understand the problem better and propose changes to improve the ideas. This is a cyclical process, with its primary focus on people and their needs to identify the problem, the solution, and the design (Luka, 2014). The first of these stages is empathy, which is the basis of DT and is a sincere feeling that helps to think about and find out other's needs and insights. It is important to recognize learners' different opinions, expectations, and learning styles to create learning experiences in which they feel assured and develop responsibility towards their learning process (Vite, 2014). Learners, who are the center of education and to whom all the educational decisions and actions made by educators affect, have active participation in the learning environment in a way that their experiences and their perceptions about the environment can favor their learning process. So that the learning environment is a space of collective construction and reflection where participants express their individuality and sociocultural diversity is seen in the interactions in the educational process (Rodriguez & Araque, 2020).

The second stage is called define, and in this stage, discussion, identification of needs, and insight from the information collected in the empathy stage is encouraged, to identify the

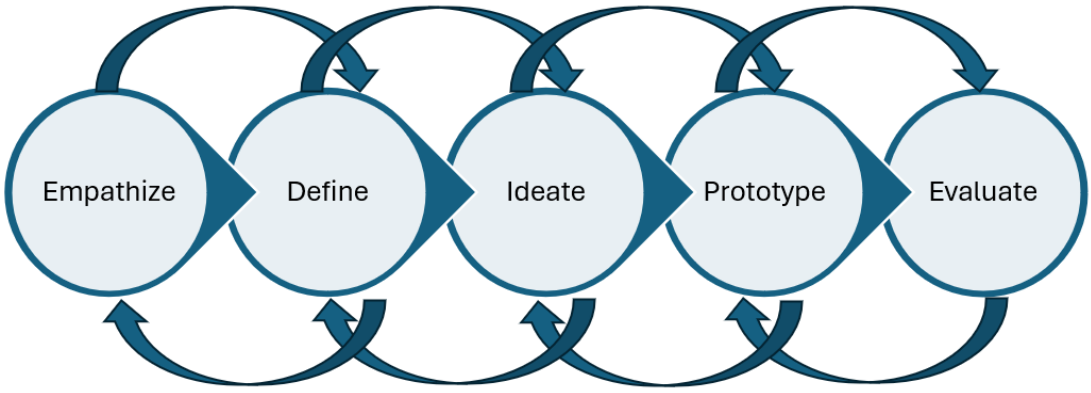
problem. It is intended to describe and frame it in a way that can guide learners toward a real solution. Learners are asked to write an actionable problem statement or a question that could start as “how can we…” and they will answer in later stages. Additionally, as Dam (2024) stated, this stage will facilitate learners in collecting innovative ideas to identify key aspects to address the problem. Through this stage, learners will be able to enhance a greater comprehension of the problem as well as engage in critical thinking. Finally, learners will be motivated to think of the problem from a collaborative approach.

Thirdly, in this stage, which is called the ideate generation, answers are generated to solve, in the best way, the problem identified in the previous stage. Additionally, discussions, debates, brainstorming, and additional information are crucial to find the most creative solutions and are essential activities to promote the active use of the English language. According to Trilling & Fadel (2009), these activities help to improve critical thinking, creativity, and effective communication skills, which as it has been mentioned before are essential 21st-century skills. Additionally, according to Pande & Bharathi (2020), it is essential to state rules for brainstorming, avoiding judgment or shame, and encouraging innovative and enthusiastic ideas. The authors Pande & Bharathi (2020) also stated that learners should be encouraged to find creative ideas through divergent thinking which is a free-flowing spontaneous creative process and find solutions through convergent thinking which is a critical process.

Fourthly, prototype is the next stage. In this stage, ideas that were narrowed down from ideation are created in a tangible form so that they can be tested. Here prototypes are created. These are, for example, comics, reflection diaries, posters, vision boards, act-outs, and paper models (Al-Zebdyah, 2022). The point of creating these prototypes is to test ideas and get answers to improve and change directions. It aims to identify the best solution for the problems

that were identified in the previous stages. In this stage, learners must create a representation of their ideas as they learn by doing, which is the best way to teach them to fail and adapt but also to develop problem-solving skills. Fifthly, evaluate is carried out. It is time to evaluate the prototypes and see the beneficiaries' responses to the prototype. During this stage, feedback is provided by others, and it helps learners to know what changes are necessary to improve the prototype. As was mentioned before, even if you are in the fifth stage, you can go back to a previous stage to collect new information and make improvements (Al-Zebdyah, 2022).

Figure 2: Illustration of the five stages of design thinking



Note: The figure shows the five stages of design thinking and its cyclical process, adapted from Luka (2014).

According to Tsai et al (2023), DT is the best path to enhance learners' motivation and improve 21st-century skills such as critical thinking and problem-solving, and to sum up the impact of design thinking, Sotlikova (2023) stated that it is not a traditional approach in language teaching but a transformative one that boosts language acquisition and promotes innovative thinking and proficient communication. By incorporating DT in the classroom, learners will be prepared for a globalized world where critical thinking, communication, and adaptability skills

are a must. Introducing design thinking to learners might also be a catalyst for students' confidence. "Through empathy, defined language learning challenges, ideation, prototyping, and testing, students not only acquire language skills but also develop critical 21st-century skills". (Sotlikova, 2023, p. 199)

PROJECT'S OBJECTIVES

General Objectives

- To evaluate a pedagogical proposal to strengthen 21st-century learning skills in the EFL class with seventh graders at a private institution in Floridablanca based on design thinking strategies.

Specific Objectives

- To identify interests and perceptions of seventh graders at a private institution in Floridablanca.
- To create lesson plans based on design thinking that strengthen 21st-century learning skills.
- To carry out the implementation of the pilot to strengthen 21st-century learning skills.
- To reflect on the results by analyzing the data collected during the observations and interviews.

METHODOLOGY AND PARTICIPANTS

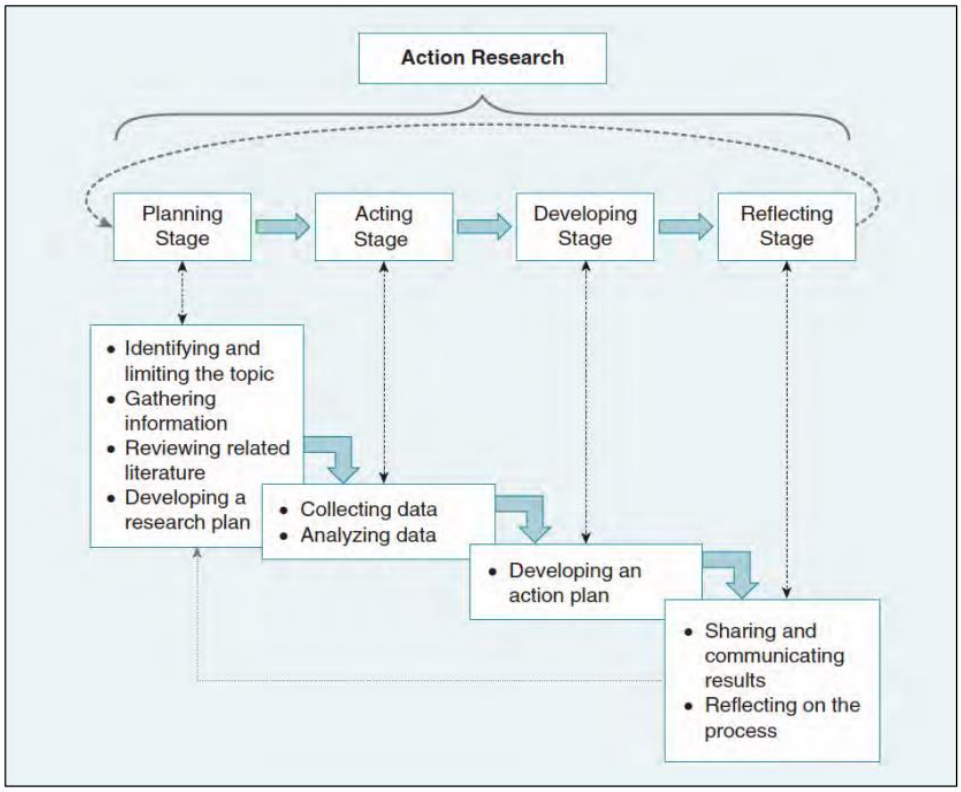
Methodology

In this project, action research was carried out since it "is a process for improving educational practice. Its methods involve action, evaluation, and reflection. It is a process to gather evidence to implement changes in practices. Action research is participative and collaborative. It is undertaken by individuals with a common purpose" (Clark et al., 2020, p. 8) and it was aligned with the purpose of this research.

According to Bradbury, 2015; James, Slater & Bucknam, 2012 (as cited in Antonellis & Berry, 2017), action research is a trustworthy process in the educational field, and it is not limited to academic research because nowadays it is used by different organizations to make corrective actions to enhance their processes and outcomes. Action research is the best research methodology and according to Alber, 2010 (as cited in Quayson, 2019), "educators should use action research to facilitate professional development to conduct research projects by using quasi-experimental designs" (p. 5). Therefore, in this study, an action research design was used to determine whether the implementation of the pilot of lesson plans based on design thinking strengthened 21st-century learning skills, such as creativity, critical thinking, and collaboration and to reflect on the perceptions learners have on this approach.

According to Mertler (2021), the process of action research is cyclical, and it consists of four stages which are planning, acting, developing, and reflecting.

Figure 3: Illustration of the Action Research stages



Note: The figure shows the four stages and activities of an action research cycle by C.A. Mertler (2020).

In the planning stage, based on the results collected through the questionnaires and a review of the literature related to design thinking, we designed two lesson plans to strengthen 21st-century learning skills. These lesson plans consisted of five sessions: empathize, define, ideate, prototype, and evaluate, the five stages of the design thinking approach. Additionally, we created the worksheets needed to implement the lesson plans. In the acting stage, the piloting of the empathize, define, and ideate sessions were conducted. Participants were asked to do the activities designed previously, where they had to have discussions, watch videos, play games, interact with their classmates, and complete some worksheets. During the third stage, the prototype session was developed. Learners had to, as the name implies, create a prototype such as posters, visual drafts, flipbooks, apps, playlists, and campaigns. In the fourth stage, reflection

took place as a critical examination of practices and experiences. Students were asked to complete the evaluate session and the interviews. Finally, after the pilot and the analysis of the results, the last three lesson plans were designed considering the insights provided by students in the interviews and the reflection on possible improvements to the proposal.

Instruments

In this study a mixed method is employed since "different data collection methods have strengths and weaknesses and combining them can help mitigate those shortcomings and improve the quality of data collected" (Driveresearch, 2023). For that reason, three instruments were used in this research to collect information. Quantitative data was gathered through two questionnaires (see Appendices 23 and 24), while qualitative data was gathered through participant observations (see Appendix 25), and an interview (see Appendix 26).

Considering that "many action research studies use a combination of artefacts, document studies, surveys, interviews, focus groups, discussions, participant observation, group work, performance measurement (Emerald Group Publishing, n.d.), the first method of instrumentation selected for this research was a set of questionnaires. First, a thirty-three-question online questionnaire was conducted to identify seventh-grade learners' interests. The questionnaire had multiple-choice items and an open-ended question which were all designed considering the objectives of the study. The first section of the first questionnaire asked for demographic information to understand the characteristics of the participants and the second consisted of questions about the use of English and their interests. In addition, the second questionnaire consisted of twelve questions to identify learners' perceptions of the English class.

The second method of instrumentation was participant observations. This instrument was used to collect qualitative data from learners to understand "how they act and behave" (Oregon

State University, 2023) during the implementation of the lesson plans. That is one of the perks of participant observations and for this reason, it is a reliable and useful method to complement others.

Finally, some interviews were carried out to reflect on the results of the implementation of the pilot of design thinking approach activities on learners' learning process. An interview is another method of data collection in which participants exchange information by answering a set of questions, which "are designed by a researcher to elicit information from interview participants on a specific topic or set of topics" (Oregon State University, 2023). There are three types of interviews. In this case, an interview with open-ended questions was applied to different learners. Based on the information collected from the interviews and the implementation of the pilot, the other three lesson plans were designed as a pedagogical proposal.

Participants

Participants consisted of 26 seventh-grade students from a private institution in Floridablanca, Santander. They were asked to answer a questionnaire, in which the first section related to their demographic information. The data showed that most of the participants were male, while almost a quarter of them were female (see Appendix 1). The participants' ages were between 12 and 13 years old (see Appendix 2). Some of the students lived in Bucaramanga, however, a significant number of them lived in Floridablanca, which is a municipality that is part of the metropolitan area of Bucaramanga (see Appendix 3). In terms of participants' socioeconomic status, they belonged to stratum 3 to 5, which means none of them came from a low-income household (see Appendix 4). The academic objectives of the school are to enhance the English learning process of students by focusing on communicative competences and to develop learners' skills, including critical thinking and collaboration. Participants take seven

hours of English lessons weekly, but the level of English proficiency of this sample was not homogeneous. Most students were considered to be at the B1 level, according to the CEFR. However, others did not reach that level of proficiency.

Ethical considerations

All participants were informed about the purpose of this research, its activities, and how its process was carried out. The participants' parents were informed too and signed an informed consent form (see Appendix 22), indicating their approval of participating in this study, considering that students are minors.

PEDAGOGICAL PROPOSAL

In this project, we presented a pedagogical proposal based on a design thinking approach to develop 21st-century learning skills, such as critical thinking, problem-solving, collaborative learning, and creativity in seventh-grade learners.

Method, techniques, and procedures to analyze and solve the problem identified.

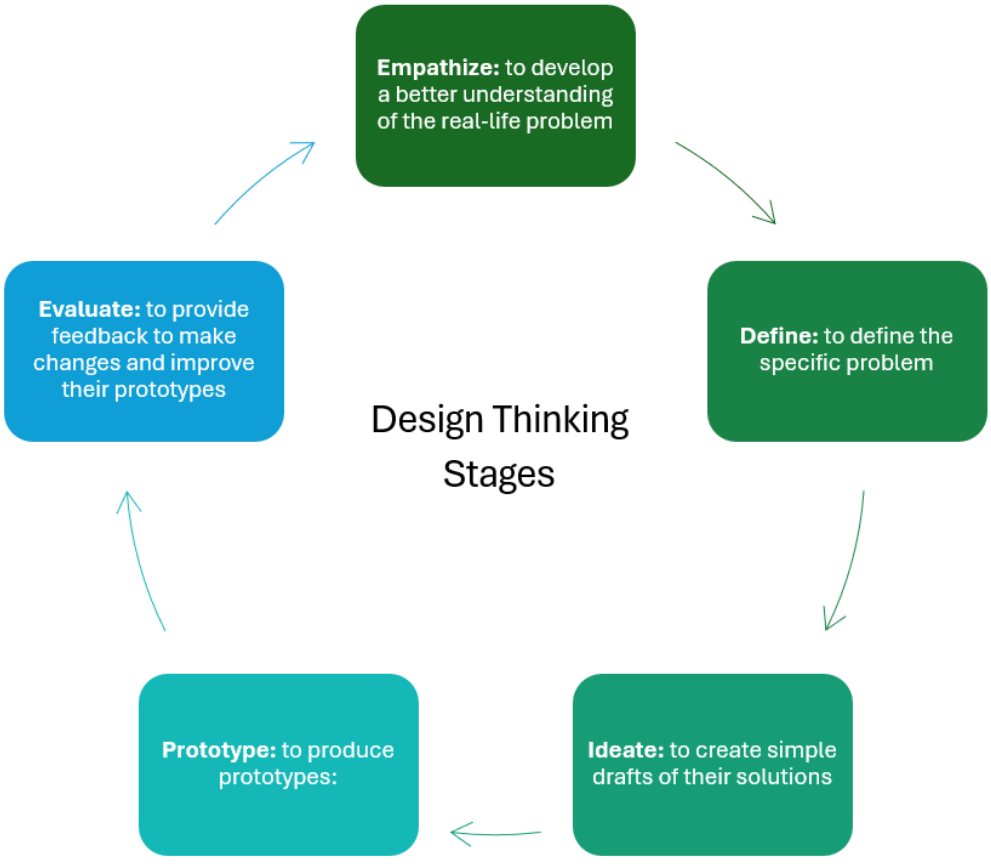
The methodological strategies executed in this project were the five stages of design thinking. The 21st-century skills aimed to develop were those known as learning skills: critical thinking, problem-solving, collaborative learning, and creativity. Two lesson plans were implemented during the pilot and consisted of five sessions that are the five stages of the design thinking approach: empathize, define, ideate, prototype, and evaluate. They were executed in eight hours. These lesson plans were based on design thinking and the information collected through the questionnaires.

1. Design Thinking

As it was mentioned in the literature review, design thinking is one of the most structured approaches to solving real-life problems by understanding learners' interests and perceptions (Luka, 2014). According to Al-Zebdyah (2022), using design thinking in education fosters learning skills development. In this section, it is presented how this approach was implemented as part of the pilot.

The design thinking approach has five stages, which were used to design the activities of the lesson plans.

Figure 4: Illustration of the Design Thinking stages.



Note: The figure shows the five stages of the design thinking approach, which were adapted from Luka (2014), and were used during the pilot.

A. Empathize

In this study, this stage is observed through the implementation of a set of ideas which aim at learners to develop a better understanding of real-life problems. Videos, readings, and images are used to introduce the problem and start a discussion about it. For example, in this session, students watched a video about time management and how it affects personal and school activities. Then, they worked in groups to discuss the time management problems they have faced in their everyday lives.

B. Define

In this study, this stage can be seen when learners define the specific problem to find workable solutions. Learners summarize and select a problem to formulate one question to be solved in later stages. In the second session, they summarized the main time management problems identified and selected. Finally, they shared the problem with other groups.

C. Ideate

This stage aims to encourage 21st-century learning skills development by implementing techniques such as brainstorming, mind mapping, drawing, and gap-filling. Learners create simple drafts of their solutions, which must be realizable. In the third session, students brainstormed and proposed solutions for time management issues.

D. Prototype

The objective of this stage is to use problem-solving skills and creativity to produce prototypes. Learners are expected to prepare a brief description of their prototype and how it works, as well as to create a physical representation of their solution. In the fourth session, they created the prototypes, e.g. weekly calendars, checklists, etc.

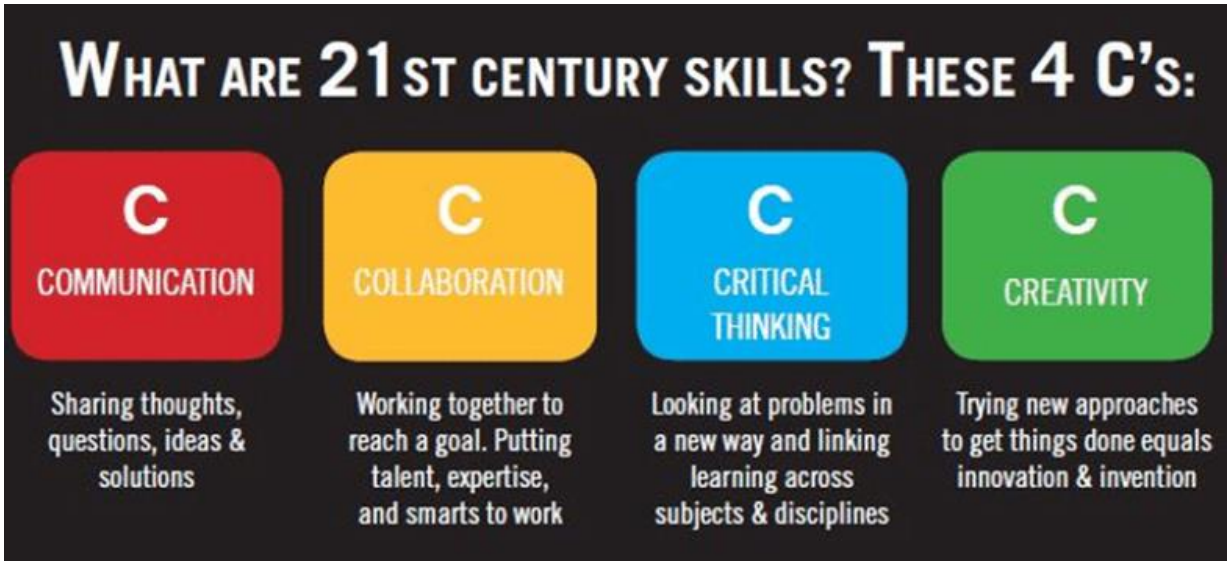
E. Evaluate

In this stage, the goal is to provide feedback so that learners can make changes to improve their prototypes. Learners reflect on the influence of design thinking activities on improving their critical thinking, problem-solving, collaborative, and creativity skills in their learning process. In the last session, students presented their prototypes and explained how it solved the problem. Their classmates provided feedback and suggested improvements.

2. 21st-Century Skills

The 21st-century skills are those that let learners contribute to the development of their countries and succeed in a globalized era. The Ministry of Education, Government of India (n.d.) classifies these skills into three categories: life skills, literacy skills, and learning skills. Here, we focused on the fourth learning skills, also known as "The Four C's": critical thinking, communication, collaborative learning, and creativity.

Figure 5: The 4C's in 21st-century Skills



Note: The figure shows the 21st-century learning skills known as "The Four C's" as presented by Schnell-Zalay-Gombás (2021).

A. Critical Thinking

It is defined "as a thoughtful and reasonable process whose main purpose is to make sensible decisions about what to believe or what to do" (Ennis, 2012, as cited in Uribe-Enciso et al., 2017, p. 80). Learners are asked to consider a problem from a different perspective to identify and draw solutions using their prior knowledge.

B. Communication

Communication skills are essential in the 21st century because they help to express thoughts, opinions, and motivate and persuade others with our words. It also "refers to the ability of lecturers to practice oral and written language efficiently in the English language" (Tang, 2018, p. 24).

C. Collaborative Learning

Collaboration is about working together to reach a goal and putting talent, expertise, and smarts into work. "Note here that effective collaboration involves skills that have also been identified elsewhere as essential competencies, including communication, creativity, and critical thinking." (Thornhill-Miller et al., 2023, p.12)

D. Creativity

It is, further, related to the ability to innovate (Sheikh & Siti, 2016; Cruz & Orange, 2016). Creativity is trying to find new ways of doing things, to look at problems from different perspectives, and to think of innovative solutions. The objective here is to think outside the box.

Planning the lesson plans

Considering our research question "To what extent can the design thinking approach enhance 21st-century learning skills in an EFL class?" and the objectives of this research, we began the planning process. The first step in this project was to identify the interests and

perceptions of the seventh graders to create the lesson plans. After collecting data, we started creating the lesson plans based on design thinking to strengthen 21st-century learning skills. Initially, we created two lesson plans based on the information collected through the questionnaires regarding students' perceptions and interests. Each lesson plan consisted of five sessions that are the five stages of the design thinking approach: empathize, define, ideate, prototype, and evaluate. The lesson plans were designed to be implemented in four hours and the activities were planned to be performed in five groups.

Table N. 1: Lesson plans

Topic	Material	Stage	Goal for students	Use of language	Task	Time
Time management	Worksheets 1–2–3 Video Paper or cardboard Colored markers, colors, and pens Scissors, glue, and a ruler	Empathize Define Ideate Prototype Evaluate	To raise self-awareness about time management. To identify time management problems. To foster critical thinking and collaboration by exploring innovative ideas. To enhance creativity and problem-solving by materializing their ideas into tangible prototypes. To assess their prototypes and reflect on their learning.	To use the *present simple* to talk about time management problems students face. To use *can* and *can't* to write the possible solutions to the time management problem. To foster communication.	Oral presentation to explain the prototype to their classmates.	4 hours
Sustainability	Video Wordwall online game	Empathize Define	To develop empathy and respect for the environment.	To use the *present simple* tense to discuss environmental issues.	A visual draft of an app and a description of its characteristics and functions.	4 hours

	Worksheets 1–2 Colors, markers, pencils	Ideate Prototype Evaluate	To understand environmental problems. To promote critical thinking and problem-solving by analyzing functions for the app. To put into practice creativity by creating a visual draft of the app. To reflect on the design thinking process.	To use *should* to describe the app features. To foster communication.		
Soccer Games at the stadium	Worksheet 1 Paper or cardboard Colored markers, colors and pens Scissors, glue, and a ruler	Empathize Define Ideate Prototype Evaluate	To understand fan experiences. To articulate a clear problem based on the identified needs. To foster critical thinking and problem-solving by generating ideas to improve soccer fan experiences. To create a basic prototype of the selected solution. To evaluate and improve the prototype based on feedback.	To use the *present simple tense* and *adjectives* to describe and analyze situations related to soccer events. To use *vocabulary of adjectives and adverbs* to describe fans experiences and features in soccer contests. To foster communication	A physical or digital flipbook with guidelines that improve the fan experience at the stadium.	4 hours
Collaborative Playlist for Emotional Well-being	Worksheet 1 Smartphone Internet connection	Empathize	To understand the emotional needs of others to design a playlist that promotes emotional well-being.	To practice the *present simple* tense and *persuasive phrases* to describe and justify their playlist features.	A visual aid for their collaborative Playlist for Emotional Well-being	4 hours

	Paper or cardboard Colored markers, colors and pens Scissors, glue, and a ruler	Define Ideate Prototype Evaluate	To define the emotional goals and needs for the collaborative playlist. To generate ideas for songs that can be included in the playlist to address emotional well-being. To create and present the final playlist as a prototype for emotional well-being. To evaluate the effectiveness of the collaborative playlists and reflect on the design process.	To use *vocabulary* and *expressions* related to music and emotions (e.g., playlist, mood, relax, calm, joyful, soothing) to explain their choices and persuade others. To foster communication		
Outdoor Spaces for Student Interaction and Collaboration	Worksheet 1 Paper or cardboard Colored markers, colors and pens Scissors, glue, and a ruler	Empathize Define Ideate	To understand the needs and preferences of students regarding outdoor spaces that encourage interaction and collaboration. To define the features and goals of the outdoor space that will support student interaction and collaboration. To generate creative ideas for designing the outdoor space based on the needs defined in	To use the present simple tense and phrases for giving opinions and suggestions (e.g., "What do you think?", "I suggest...", "It would be better if...") to present their design ideas. To use descriptive language to describe physical environments (e.g., interactive, accessible, open) and design spaces that promote interaction.	An outdoor space design, including detailed sketches or models.	4 hours

	the previous session.	
Prototype	To create a detailed prototype of the outdoor space design.	To foster communication
Evaluate	To evaluate the effectiveness of the designs and reflect on the design process.	

Note: The table shows the five lesson plans based on the five stages of the design thinking approach to develop 21st-century learning skills.

FINDINGS

As previously stated, a questionnaire was employed to ascertain the interests and requirements of the students to facilitate the implementation of this project. Additionally, the questionnaire permitted the investigation of the students' perceptions regarding English language learning. The findings derived from this preliminary phase are presented in the following section.

Online questionnaire on learners' interests

The results collected are presented using tables and figures according to the second section of the questionnaire related to the use of English and their interests. After the implementation of the first instrument, we were able to determine that 93.8% of students liked English and only 6.2% did not, which was a promising result for using it to enhance students' learning (see Appendix 5). Also, 81.3% of them considered it very important to learn English, 12.5% considered it important and the rest of them considered it just a little important (see Appendix 6). 37.5% of students affirmed they tried really hard to learn English, 31.3% of them

affirmed they tried hard, 31.3% affirmed they just tried a little hard to learn and none of them affirmed not to try to learn the language (see Appendix 7). 50% of students expressed themselves to be very persevering when practicing or engaging in a class activity, 25% expressed they have a lot of perseverance, and the other 25% expressed they persevere somewhat (see Appendix 8). Since most of the participants enjoyed learning English and believed it was important to learn it, activities based on a design thinking approach could be implemented as it required learners to brainstorm, ask each other questions, and discuss challenging topics.

In terms of workgroup, 50% of them liked working in a group too much, 31,3% liked it a lot, and 12.5% liked it to some extent (see Appendix 9). Regarding participation, 43.8% of participants expressed they participate a lot when making decisions within their group work. 31.3% expressed participating to some extent in the decision-making process and 18.8% expressed participating excessively (see Appendix 10). Collaboration was one of the 21st-century learning skills that this project aimed to develop in learners, so it was good to see that they enjoyed working in groups a lot. Not only did they like to participate actively, but they also liked to make group decisions. Because they enjoyed working in groups, the implementation of the pilot was easier and could be carried out smoothly since they would cooperate with each other's ideas. Finally, an open-ended question was asked to learn about what other activities they enjoyed doing in class. Some of the responses given by the participants were going on outings, using educational games in class with individual participation, making drawings, socializing with classmates, doing student book activities in groups, including soccer activities, and listening to English music as it is entertaining (see Appendix 11). Considering learners' interests beyond the classroom could help us motivate them and place them at the center of their learning process. Therefore, the lesson plans were created based on their interests.

Questionnaire on learners' perceptions towards the English class

After applying the second instrument, we gained a better understanding of learners' perceptions, which provided more data that was useful and essential to design the first two lesson plans for the piloting. When asking students about how they felt in their English classes, 57,1% of them said they felt comfortable, and 42,9% expressed feeling very comfortable. It is important to note that this result was significant for our project since how students felt in the classroom was crucial because it contributed to enhancing their learning process and improving their engagement during the activities implemented in class (see Appendix 12).

Regarding how often they felt confident to participate in class to ask questions or to express their ideas, 57,1% of students expressed they had confidence most of the time, 28,6% affirmed they always felt confident to ask questions and express their ideas in class, and 14,3% expressed that, sometimes, they felt confident (see Appendix 13). It was positive that students felt confident to participate, as it meant they had a good level of English proficiency, and they could contribute to the class. Not having confidence was a factor that could have affected their learning process. Moreover, they could do more complex activities, such as the ones implemented during this research.

Most of the students (57,1%) considered that their opinions were considered many times in their English classes, 28,6% of them indicated that it only happened sometimes and 14,3% thought that it rarely happened (see Appendix 14). 71,4% of students considered that they were learning and improving their English proficiency in their English class significantly and 28,6% affirmed that they were learning a lot, which was good because it means they trust their learning process, their abilities, and as they had mentioned before they liked English, and they tried to learn (see Appendix 15).

When asked whether the class activities helped students to improve their English skills, 42,9% of them expressed that all the class activities helped, while another 42,9% expressed that most of them did. And 14,3% expressed that some of them enhance their skills. This was encouraging, as students who were motivated by the class activities were likely to learn (see Appendix 16). 57,1% of students considered the activities they did in class and the topics they learned to be very relevant and interesting, the other 42,9% manifested the activities and topics were relevant and interesting (see Appendix 17). It was good that students thought that in general, their class was interesting because they would have a better attitude and participate in all the activities.

In terms of students' needs and interests, these are their perceptions: 57,1% of them felt that the class adapted quite a bit to their needs and interests, 28,6% felt that it adapted completely, and 14,3% felt that a little (see Appendix 18). As we had already mentioned before, it was important to be aware of students' needs and interests to plan activities that not only engaged them but also became significant in their learning process. While 57,1% of participants affirmed they felt comfortable working in class, 28,6% felt uncomfortable sometimes and 14,3% said they felt comfortable (see Appendix 19). Most of the students (85,7%) felt motivated to improve their English proficiency level in the class and 14,3% felt quite motivated (see Appendix 20).

Finally, students shared their opinions about aspects they would like to change in their class to make learning more significant. Some of the changes students proposed were to play more games and make more oral presentations, to learn about more complex topics that help them have conversations with native speakers because the class was easy for them, assign activities related to soccer, and have the lessons in different environments outside the regular

classroom. They also proposed to do more activities, such as brochures and crafty activities. They wanted to work in groups and had practical and interactive exams instead of written ones (see Appendix 21).

Piloting and participant observations

The findings of the two lesson plans piloted are going to be discussed following the four stages of the action research by Mertler (2020), which are the planning stage, the acting stage, the developing stage, and the reflecting stage. While the implementation of the activities was taking place, participant observations were also carried out to collect more qualitative data regarding their behaviour and how they acted during the pilot.

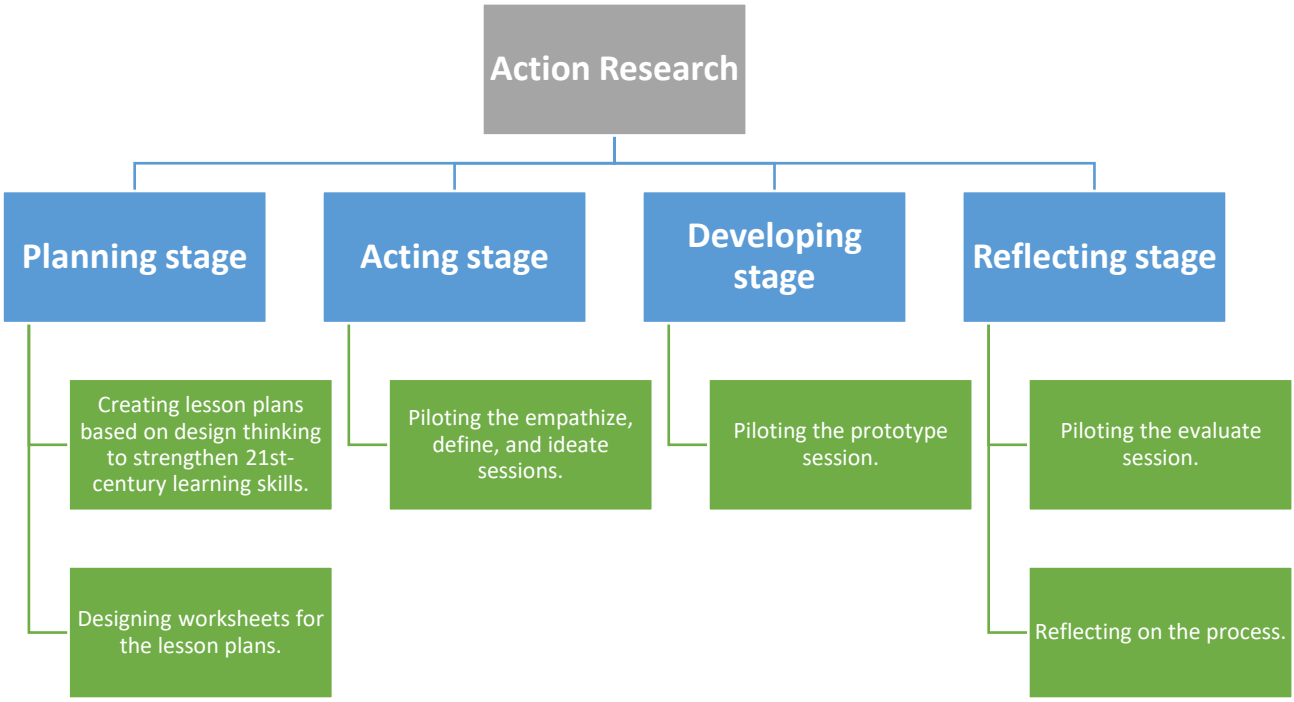
Table N. 2: Lesson piloted

Lesson 1	**Lesson 2**
Topic: Time management	**Topic:** Sustainability
Objectives: To raise self-awareness about time management. To identify time management problems. To foster critical thinking and collaboration by exploring innovative ideas. To enhance creativity and problem-solving by materializing their ideas into tangible prototypes. To assess their prototypes and reflect on their learning. To use the *present simple* to talk about time management problems students face. To use *can* and *can't* to write the possible solutions to the time management problem. To foster communication.	**Objectives:** To develop empathy and respect for the environment. To understand environmental problems. To promote critical thinking and problem-solving by analyzing functions for the app. To put into practice creativity by creating a visual draft of the app. To reflect on the design thinking process. To use the present *simple tense* to discuss environmental issues. To use *should* to describe the app features. To foster communication.
Time: 4 hours	**Time:** 4 hours
Student task: Oral presentation to explain the prototype to their classmates.	**Student task:** A visual draft of an app and a description of its characteristics and functions.
21st-century learning skills included: critical thinking/problem-solving, collaboration, communication, and creativity.	**21st-century learning skills included:** critical thinking/ problem-solving, communication, and creativity.
Design thinking stage: Empathize, define, ideate, prototype, and evaluate.	**Design thinking stage:** Empathize, define, ideate, prototype, and evaluate.

Note: The table shows a description of the two lesson plans piloted.

Subsequently, the findings of the two sessions conducted with students are presented in accordance with the stages outlined in the action scenario. Finally, the overall results are presented. First, the findings from the planning stage are presented. Then, the finding from the acting stage. Next, the findings of the developing stage. Finally, the findings of the reflecting stage.

Figure 6: Action Research and its stages.



Note: Adapted from the "Illustration of the Action Research stages" by C.A. Mertler (2020).

Planning stage

In the first lesson plan, the matter discussed was time management. Following the design thinking approach, activities were planned to develop 21st-century learning skills. In the "empathize" session, the focus was on the development of empathy to understand better time

management problems students faced. A worksheet was designed to list the problems identified. Then, in the “define” stage, they explained the specific problem they were going to work on. In the “ideate” session, another worksheet was created to write how they could foster creativity and critical thinking by exploring and selecting innovative ideas to solve time management problems. Next, creativity and problem-solving were put into practice by materializing their ideas into tangible prototypes in the “prototype” session. Finally, during the “evaluate” stage, participants were expected to present their prototype to their group and explain how it works. After giving and receiving feedback, students reflected on the implementation of the design thinking activities; and they wrote these reflections in another worksheet planned for it.

In the second lesson plan, the issue addressed was sustainability. A worksheet was created to write the results of the first two stages. According to the design thinking approach, in the first stage “empathize", the activity consists of developing empathy to better understand sustainability problems and needs in the community. In the second stage, “define”, the lesson aimed to decide the environmental problem and set the purpose of an app. In the third one, “ideate”, they generated ideas to solve environmental issues. For the fourth stage, “prototype”, students had to describe an app that could solve the problem. This description was written in a worksheet, which was also designed for students to put into practice creativity and problem-solving by designing a visual draft of the app. Finally, during the “evaluate” stage, participants reflected on how the implementation of these activities helped them to strengthen their critical thinking, problem-solving, and creativity skills. They wrote their insights in the worksheet.

Acting stage

In the acting stage, we are going to discuss the findings of the implementation of the two lesson plans. We are going to focus on the descriptions of participants' work on the activities that

were designed based on the design thinking approach, which has five stages which are empathize, define, ideate, prototype, and evaluate. In this stage, we will only discuss the empathize, define, and ideate sessions.

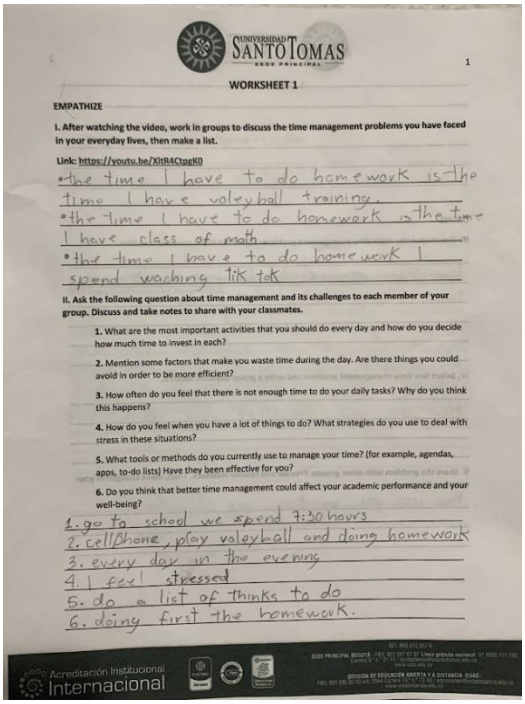
First lesson plan: the topic discussed was time management. Participants had to go through the five stages of the design thinking approach to strengthen their critical thinking, creativity, collaboration, and speaking skills. The grammar focus of this lesson plan was on the present simple tense and the modal can. In the first stage, students watched a video about time management and how it affects personal and school activities. Learners worked in groups of five to six to discuss the problems they faced in their everyday lives. Most of them were excited and motivated because they were about to start something new, however others were not. They spent a reasonable amount of time in the discussion, then they listed the problems in worksheet 1. Afterward, they asked each other questions about time management and its challenges. Every member shared their opinions, taking notes in the worksheet for a class discussion. Here, they were very committed and participated actively. It took them some time to come to an agreement, but they never stopped trying. There was always one of them trying to make others respect their turn to participate.

Figure 7: Image of participants

Note: The image shows some participants working in groups completing worksheet 1, lesson 1.

For the second stage, students summarized the main time management problems and selected one to define the question they wanted to answer. They wrote their question in worksheet 1. Then, another class discussion happened to get suggestions from the other groups and make changes.

Figure 8: Images of some participants' worksheet 1



WORKSHEET 1

EMPATHIZE

I. After watching the video, work in groups to discuss the time management problems you have faced in your everyday lives, then make a list.

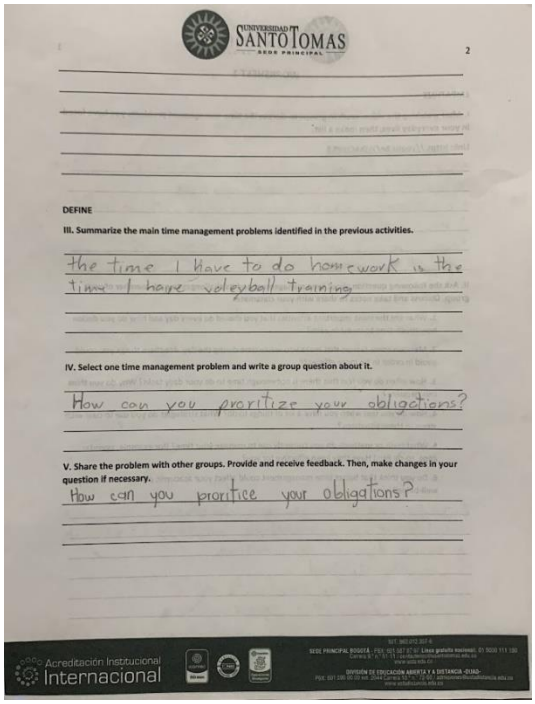
Link: https://youtu.be/XltR4CtpgK0

- the time I have to do homework is the time I have volleyball training.
- the time I have to do homework is the time I have class of math.
- the time I have to do homework I spend wacking tik tok

II. Ask the following question about time management and its challenges to each member of your group. Discuss and take notes to share with your classmates.

1. What are the most important activities that you should do every day and how do you decide how much time to invest in each?
2. Mention some factors that make you waste time during the day. Are there things you could avoid in order to be more efficient?
3. How often do you feel that there is not enough time to do your daily tasks? Why do you think this happens?
4. How do you feel when you have a lot of things to do? What strategies do you use to deal with stress in these situations?
5. What tools or methods do you currently use to manage your time? (for example, agendas, apps, to-do lists) Have they been effective for you?
6. Do you think that better time management could affect your academic performance and your well-being?

1. go to school we spend 7:30 hours
2. cellphone, play volleyball and doing homework
3. every day in the evening
4. I feel stressed
5. do a list of thinks to do
6. doing first the homework.



DEFINE

III. Summarize the main time management problems identified in the previous activities.

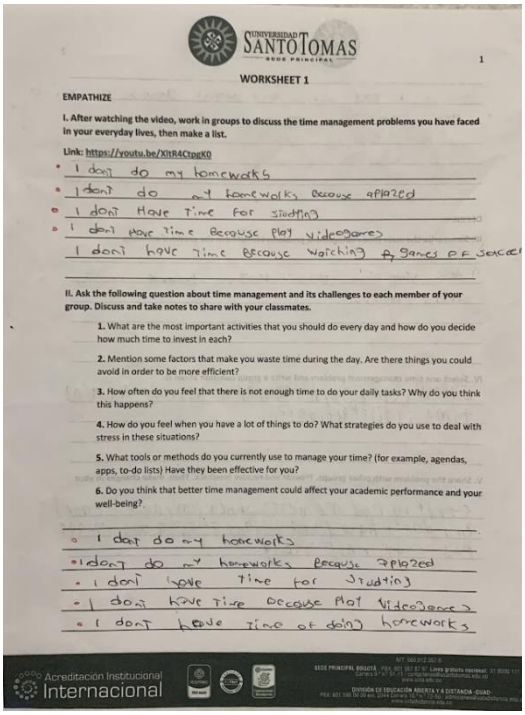
the time I have to do homework is the time I have volleyball training

IV. Select one time management problem and write a group question about it.

How can you prorlize your obligations?

V. Share the problem with other groups. Provide and receive feedback. Then, make changes in your question if necessary.

How can you prorlice your obligations?



WORKSHEET 1

EMPATHIZE

I. After watching the video, work in groups to discuss the time management problems you have faced in your everyday lives, then make a list.

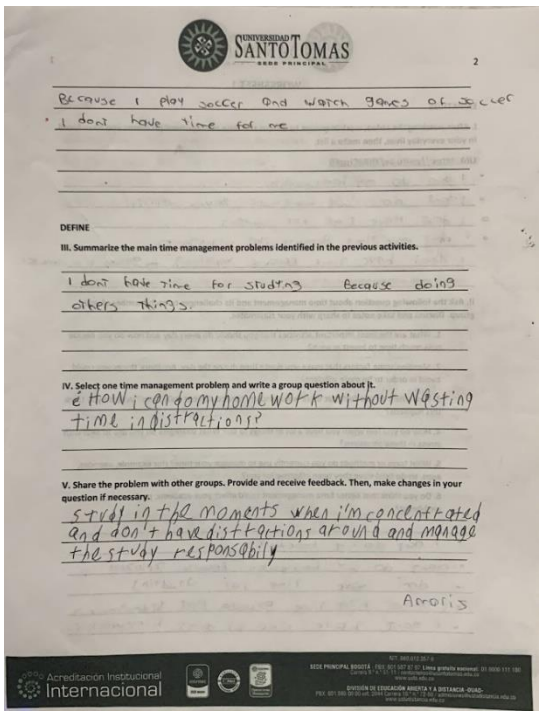
Link: https://youtu.be/XltR4CtpgK0

- I dont do my homeworks
- I dont do my homeworks because aplazed
- I dont Have time for studing
- I dont Have time because Play videogames
- I dont have time because watching A games of soccer

II. Ask the following question about time management and its challenges to each member of your group. Discuss and take notes to share with your classmates.

1. What are the most important activities that you should do every day and how do you decide how much time to invest in each?
2. Mention some factors that make you waste time during the day. Are there things you could avoid in order to be more efficient?
3. How often do you feel that there is not enough time to do your daily tasks? Why do you think this happens?
4. How do you feel when you have a lot of things to do? What strategies do you use to deal with stress in these situations?
5. What tools or methods do you currently use to manage your time? (for example, agendas, apps, to-do lists) Have they been effective for you?
6. Do you think that better time management could affect your academic performance and your well-being?

- I dont do my homeworks
- I dont do my homeworks because aplazed
- I dont have time for studing
- I dont Have time because Play videogames
- I dont have time of doing homeworks



Because I play soccer and watch games of soccer

- I dont have time for me

DEFINE

III. Summarize the main time management problems identified in the previous activities.

I dont have time for studing because doing others things.

IV. Select one time management problem and write a group question about it.

¿How i can do my homework without wasting time in distractions?

V. Share the problem with other groups. Provide and receive feedback. Then, make changes in your question if necessary.

study in the moments when i'm concentrated and don't have distractions around and manage the study responsibly

Arroris

Note: The images show some participants' answers in worksheet 1, lesson 1.

Next, in the third stage, participants brainstormed possible solutions for the problem and the question they defined before. Each group selected the most viable and innovative idea that

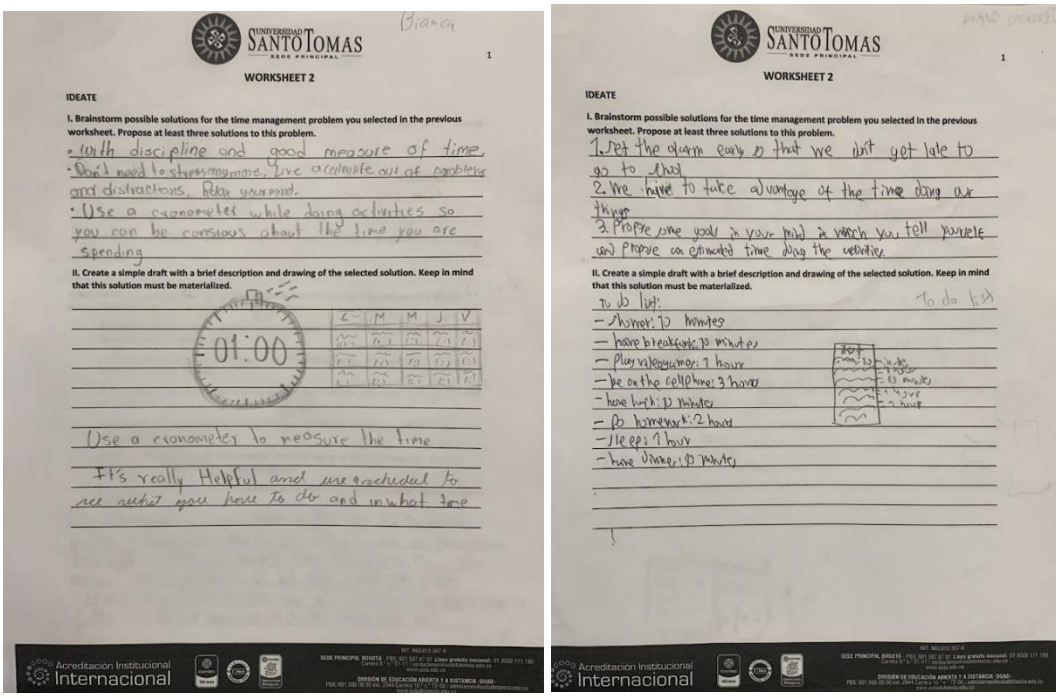
could help to solve the time management problem, bearing in mind that this solution should be materialized later.

Figure 9: Image of participants

Note: The image shows some participants working in groups completing worksheet 2, lesson 1.

Then, students created a simple draft with a drawing and a brief description of how the selected idea would work. Students wrote all this information in worksheet 2. Students looked very excited because they were working in groups with their friends. They all had different ideas but found a way to choose one of the solutions proposed.

Figure 10: Image of some participants' worksheet 2



WORKSHEET 2

IDEATE

I. Brainstorm possible solutions for the time management problem you selected in the previous worksheet. Propose at least three solutions to this problem.

- With discipline and good measure of time.
- Don't need to stress anymore. Use a cronometer out of conditions and distractions. Relax your mind.
- Use a cronometer while doing activities so you can be conscious about the time you are spending

II. Create a simple draft with a brief description and drawing of the selected solution. Keep in mind that this solution must be materialized.

Use a cronometer to measure the time

It's really Helpful and use a schedual to see what you have to do and in what time

WORKSHEET 2

IDEATE

I. Brainstorm possible solutions for the time management problem you selected in the previous worksheet. Propose at least three solutions to this problem.

1. Set the alarm early so that we don't get late to go to class
2. We have to take advantage of the time doing our things
3. Propose some goals in your mind in which you tell yourself and propose an estimated time doing the activities

II. Create a simple draft with a brief description and drawing of the selected solution. Keep in mind that this solution must be materialized.

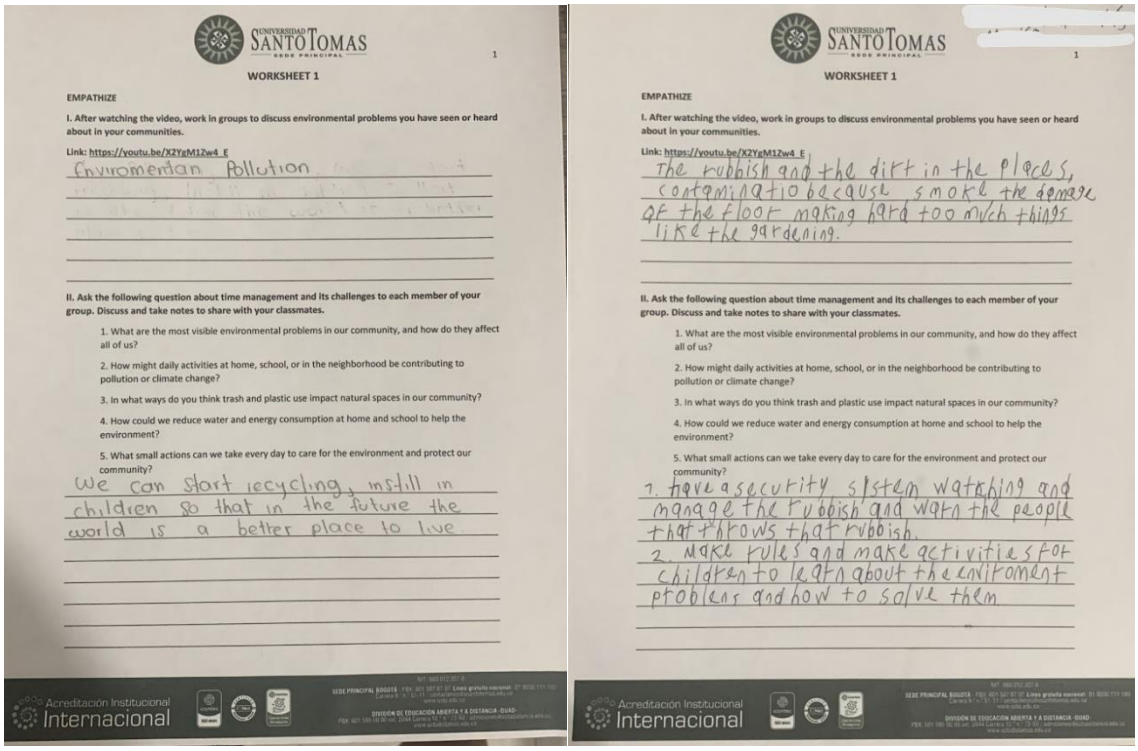
To do list:

- shower: 20 minutes
- have breakfast: 20 minutes
- Play videogames: 1 hour
- be on the cellphone: 3 hours
- have lunch: 20 minutes
- do homework: 2 hour
- sleep: 7 hour
- have dinner: 20 minutes

Note: The images show some participants' answers in worksheet 2, lesson 1.

Second lesson plan: the topic under discussion was sustainability. Participants completed the five stages of the design thinking approach to strengthen their critical thinking, creativity, collaboration, and speaking skills. The grammar focus of this lesson plan was on the present simple tense and the modal should. In the first stage, students watched a short video about ways of taking care of the environment to introduce the topic. Then they played an online game, in which they had to classify environmental problems and solutions. Students worked in groups to think about different problems affecting the environment and their communities. It was interesting to see how they organized the group so that everyone could help, because at some point some of them had problems dealing with some classmates who did not want to collaborate. Afterward, they asked each other questions about sustainability and took notes about their discussion with their group. They wrote these in worksheet 1.

Figure 11: Images of some participants' worksheet 1



WORKSHEET 1

EMPATHIZE

I. After watching the video, work in groups to discuss environmental problems you have seen or heard about in your communities.

Link: https://youtu.be/X2YgM1Zw4_E

Enviromentan Pollution

II. Ask the following question about time management and its challenges to each member of your group. Discuss and take notes to share with your classmates.

1. What are the most visible environmental problems in our community, and how do they affect all of us?
2. How might daily activities at home, school, or in the neighborhood be contributing to pollution or climate change?
3. In what ways do you think trash and plastic use impact natural spaces in our community?
4. How could we reduce water and energy consumption at home and school to help the environment?
5. What small actions can we take every day to care for the environment and protect our community?

We can start recycling, instill in children so that in the future the world is a better place to live.

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WORKSHEET 1

EMPATHIZE

I. After watching the video, work in groups to discuss environmental problems you have seen or heard about in your communities.

Link: https://youtu.be/X2YgM1Zw4_E

The rubbish and the dirt in the places, contaminatio because smoke the damage of the floor making hard too much things like the gardening.

II. Ask the following question about time management and its challenges to each member of your group. Discuss and take notes to share with your classmates.

1. What are the most visible environmental problems in our community, and how do they affect all of us?
2. How might daily activities at home, school, or in the neighborhood be contributing to pollution or climate change?
3. In what ways do you think trash and plastic use impact natural spaces in our community?
4. How could we reduce water and energy consumption at home and school to help the environment?
5. What small actions can we take every day to care for the environment and protect our community?

1. have a security system watching and manage the rubbish and warn the people that throws that rubbish.
2. Make rules and make activities for children to learn about the enviroment problems and how to solve them

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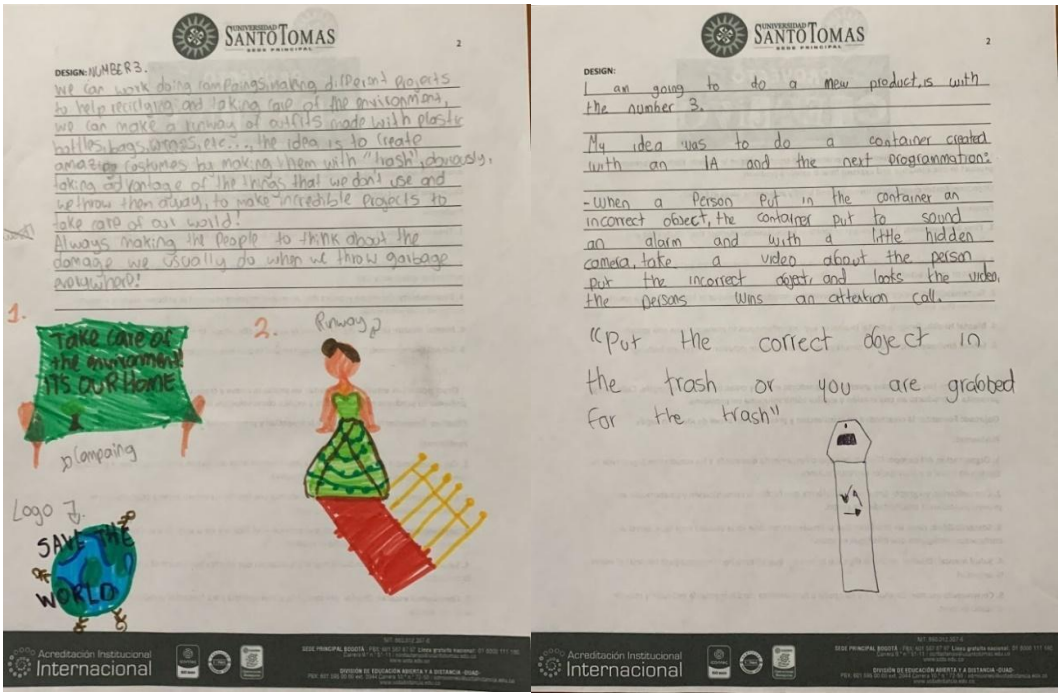
Note: The images show some participants' answers in worksheet 1, lesson 2.

The next class, we started doing an introductory activity in which students had to find a solution to a sustainability issue. Students had to create a new product that solved the problem. Also, they had to write a slogan. They enjoyed doing this part of the activities because they not only wrote the description but also had the chance to express their creativity through drawings. Some students created a campaign and described the whole process and details of it, with almost perfect use of the English language, while others wrote a short description of their ideas but still used the language properly, they made some grammar mistakes that are common and acceptable for the grade they were in. The most important aspect is that they managed to make themselves understood, despite those mistakes.

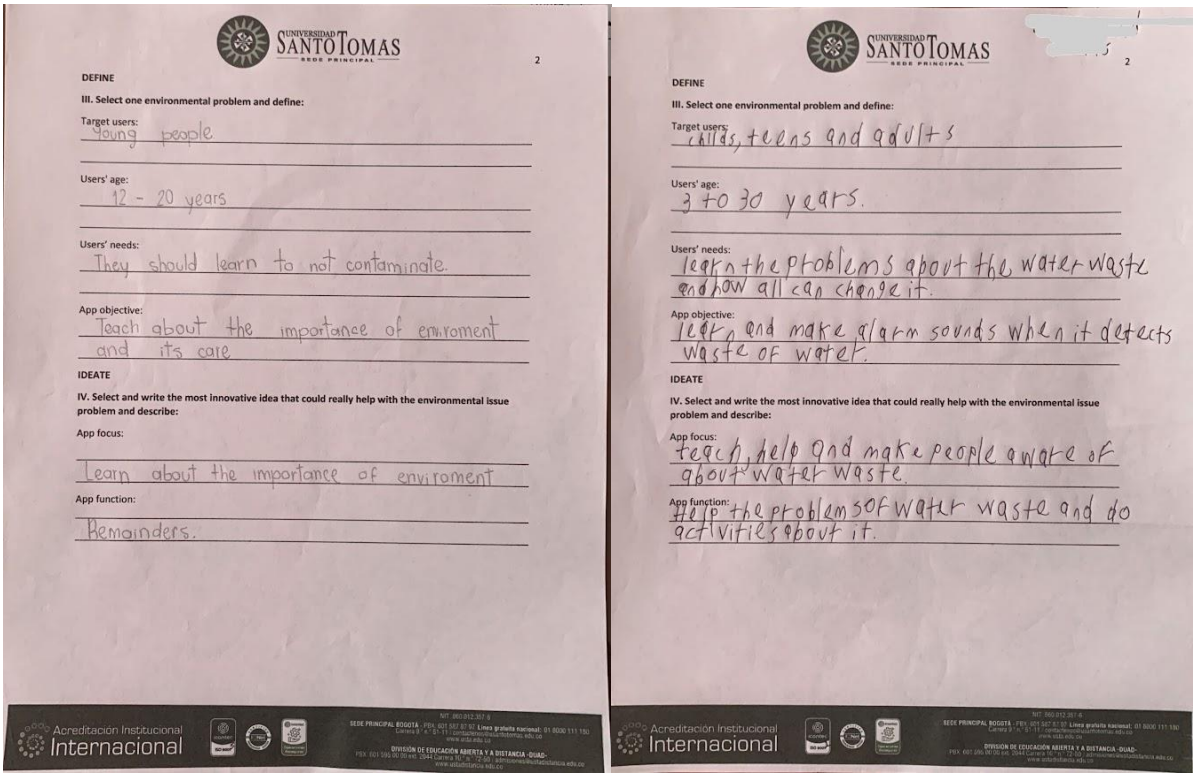
Figure 12: Images of participants' introductory activity



Note: The images show some participants' answers, drawings and slogans in the introductory activity, lesson 2.

For the second stage, students chose one of the environmental problems identified in the previous stage. Each group had to propose a solution. First, they discussed the characteristics of an app. Then, they defined the target users, users' ages, users' needs, and app objectives. They wrote that information in worksheet 1. After that, students shared their work with the other groups and got suggestions to make changes if necessary.

Figure 13: Images of some participants' worksheet 1



DEFINE

III. Select one environmental problem and define:

Target users: Young people

Users' age: 12 - 20 years

Users' needs: They should learn to not contaminate.

App objective: Teach about the importance of enviroment and its care

IDEATE

IV. Select and write the most innovative idea that could really help with the environmental issue problem and describe:

App focus: Learn about the importance of enviroment

App function: Remainders.

DEFINE

III. Select one environmental problem and define:

Target users: childs, teens and adults

Users' age: 3 to 30 years.

Users' needs: learn the problems about the water waste and how all can change it.

App objective: learn and make alarm sounds when it detects waste of water.

IDEATE

IV. Select and write the most innovative idea that could really help with the environmental issue problem and describe:

App focus: teach, help and make people aware of about water waste.

App function: Help the problems of water waste and do activities about it.

Note: The images show some participants' answers in worksheet 1, lesson 2.

Then, for the third stage, each group discussed and decided what the app would focus on, whether it would educate people, help them make more sustainable decisions, or track eco-friendly habits. These examples were given to them so that they understood what they were expected to do. Then, they discussed how the problem would be addressed and how the app functions would help their community. For example: recycling tips, a carbon footprint calculator, environmental news sections, etc. Students wrote that information in worksheet 1.

Developing stage

In the developing stage, we are going to discuss the prototype sessions of each lesson plan, in which students' creative outputs of the project were developed. In this stage, students had to create a tangible prototype, as a product of all the work they had done before in the previous sessions.

In the fourth stage of the first lesson plan, students had to create the prototype of the solution they presented for the time management issue.

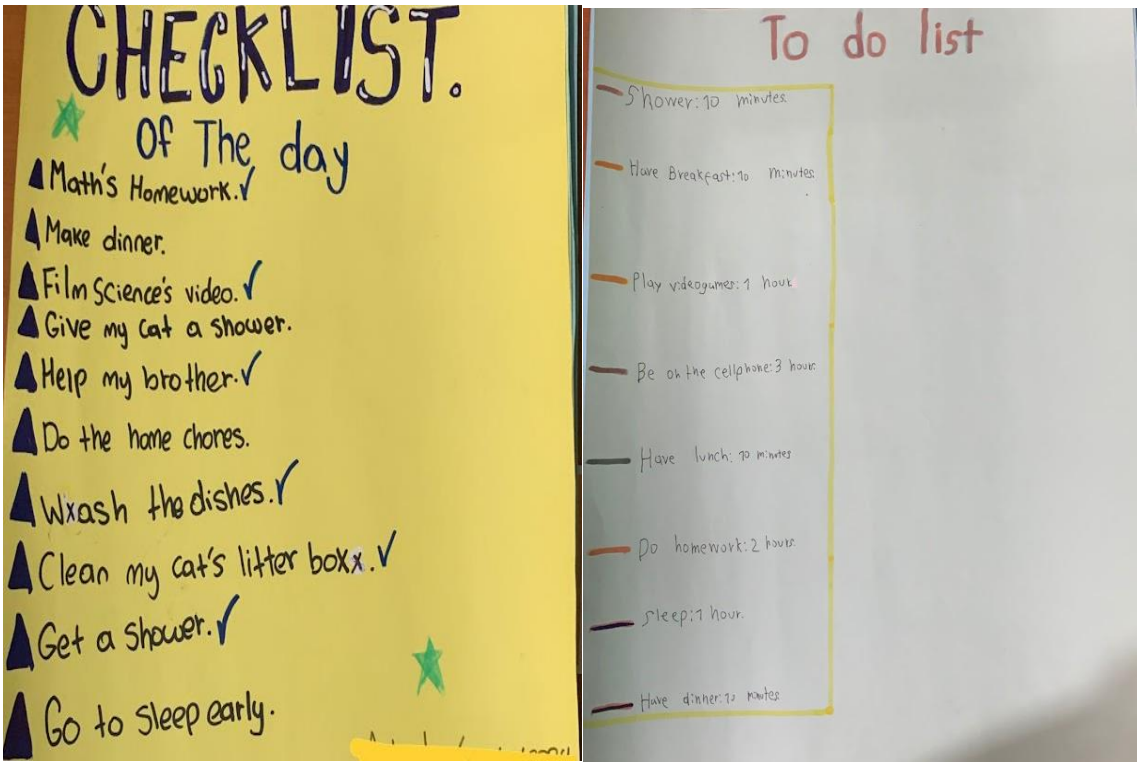
Figure 14: Images of some participants

Note: The images show some participants working on their prototypes, lesson 1.

In this case, they worked in groups and created posters using basic resources such as markers, pencils, and colored cardboard. Students prepared an oral presentation to explain how the prototype would solve the selected time management problem. It was observed that most students particularly enjoyed this stage a lot, they liked to work in groups, and they reflected a lot with their classmates about productivity and how they were spending or wasting their time.

Some of them even came to the conclusion that they do not manage their time properly due to their parents.

Figure 15: Images of participants' creative outputs of the project



Note: The images show some participants' prototypes, lesson 1.

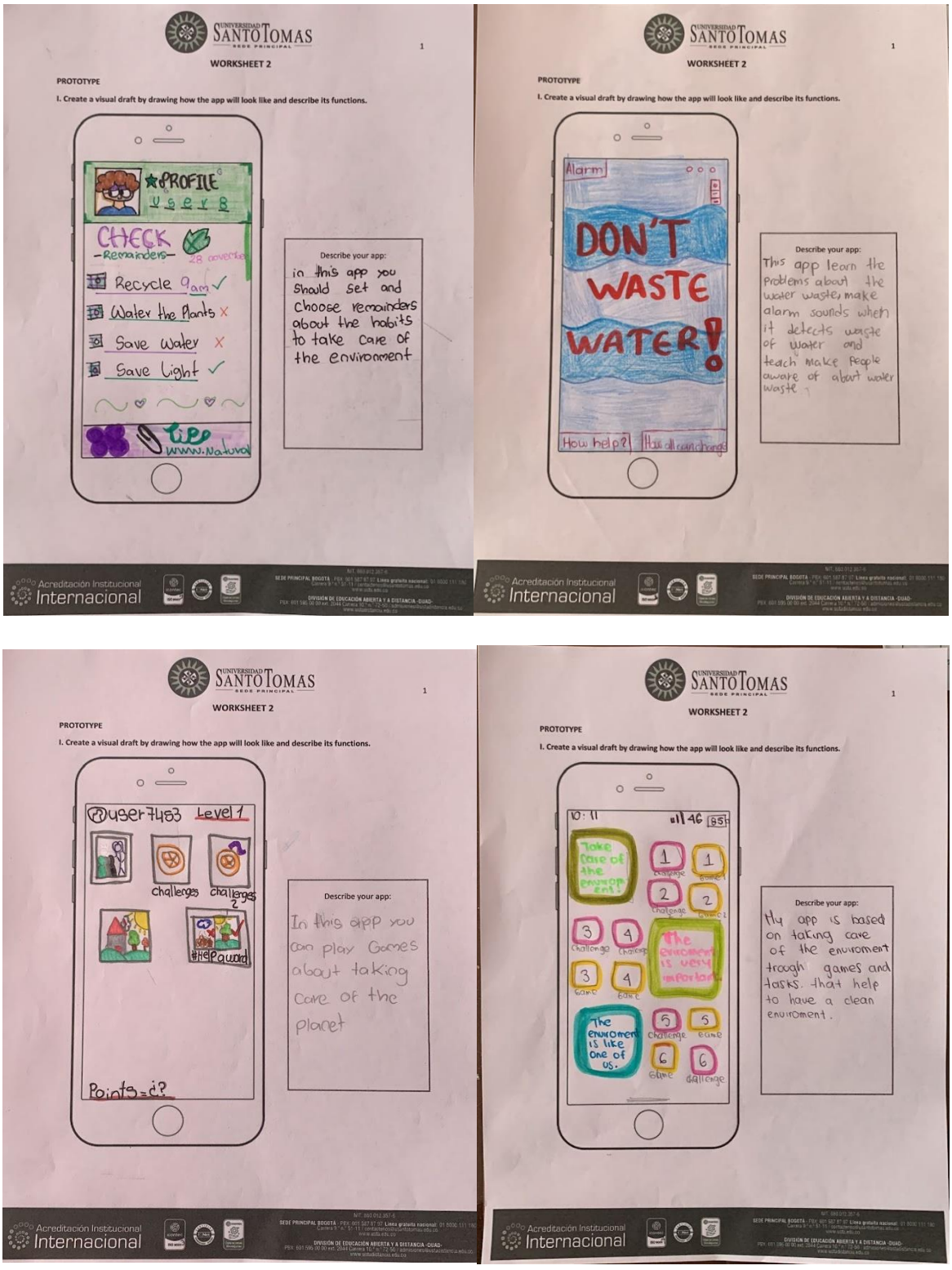
In the fourth stage of the second lesson plan, the activities were carried out during two classes. In the first one, students discussed the characteristics and functions of their apps so that they could write a brief description of them in worksheet 2.

Figure 16: Images of some participants

Note: The image shows a participant working on worksheet 2, lesson 2.

In the second class, students created the prototype, they kept working in worksheet 2 where they created a visual draft and drew what the app would look like. Creating the visual draft of the app was one of the activities they enjoyed the most, they looked very motivated, and they spent a lot of time designing and coloring all the details of their app. They liked this activity because they could use their imagination and be creative at solving problems.

Figure 17: Images of participants' creative outputs of the project



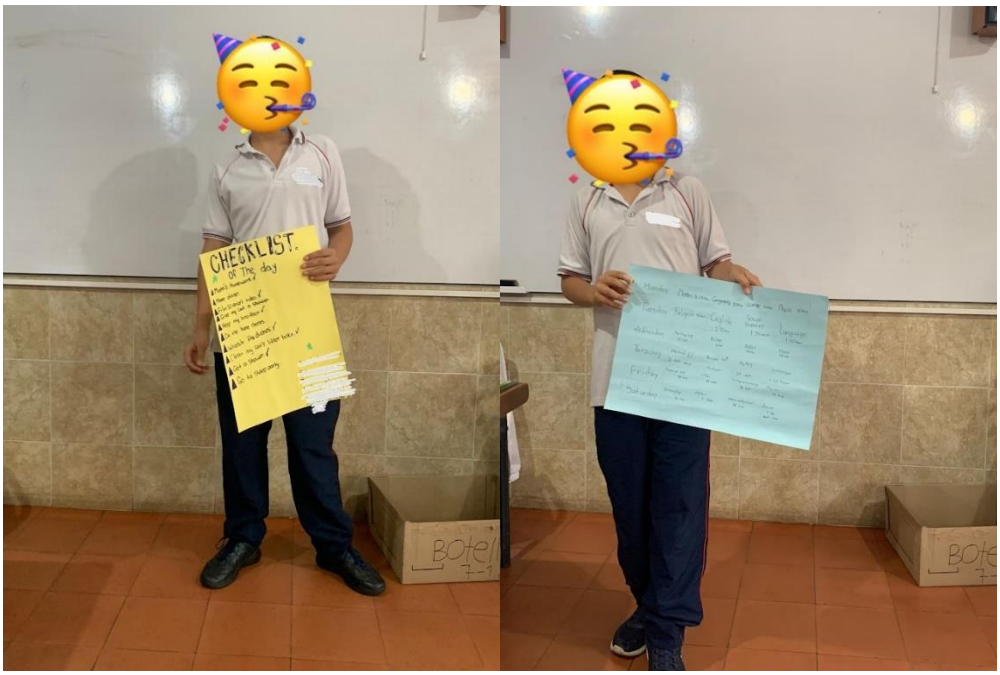
Note: The images show some participants' visual drafts of their apps, lesson 2.

Reflecting stage

In the reflecting stage, we are going to discuss the evaluate session. The objective of this stage was that students could provide and receive some feedback from their classmates to improve their prototypes based on that feedback.

In the evaluate session of the first lesson plan, students presented their prototype to the class and explained how it solved the time management problem. They got some feedback from their classmates and the teacher so that they could make changes. At first it was observed that they were a little ashamed because they had to speak in front of the class, however they started to feel more confident when some classmates had made their presentation before. Additionally, most of them were very supportive of each other.

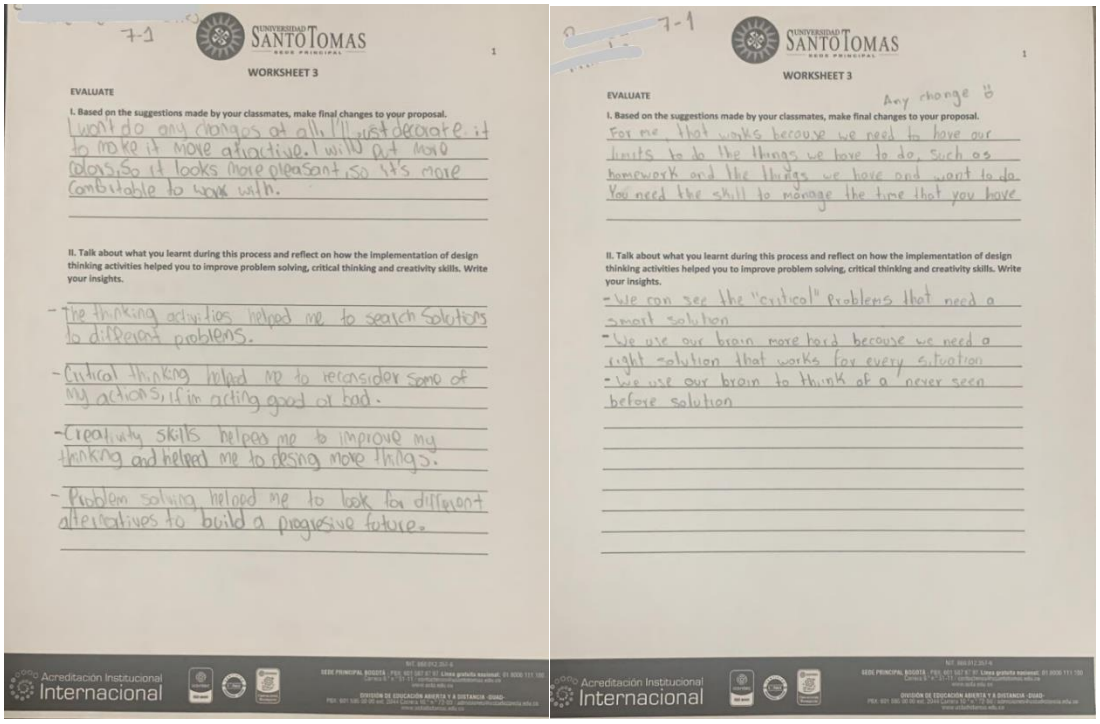
Figure 18: Images of some participants



Note: The images show some participants doing the presentations of their prototypes, lesson 1.

After the presentation, and considering their classmates' suggestions, students made final changes to their prototypes if necessary. Then, students reflected and talked about how the implementation of design thinking activities helped them to improve their problem-solving, critical thinking, and creativity skills and wrote their reflections in worksheet 3. It was observed that students could reflect not only on the use of design thinking but also on time management. They were more aware of the importance of good time management and how it could help them complete all their daily activities, be more productive and be able to enjoy some free time.

Figure 19: Images of some participants' worksheet 3



WORKSHEET 3

EVALUATE

I. Based on the suggestions made by your classmates, make final changes to your proposal.

I won't do any changes at all, I'll just decorate it to make it more atractive. I will put more colors, so it looks more pleasant, so it's more comfortable to work with.

II. Talk about what you learnt during this process and reflect on how the implementation of design thinking activities helped you to improve problem solving, critical thinking and creativity skills. Write your insights.

- The thinking activities helped me to search solutions to different problems.
- Critical thinking helped me to reconsider some of my actions, if im acting good or bad.
- Creativity skills helpes me to improve my thinking and helped me to desing more things.
- Problem solving helped me to look for different alternatives to build a progresive future.

WORKSHEET 3

EVALUATE

I. Based on the suggestions made by your classmates, make final changes to your proposal.

Any change to

For me, that works because we need to have our limits to do the things we have to do, such as homework and the things we have and want to do. You need the skill to manage the time that you have

II. Talk about what you learnt during this process and reflect on how the implementation of design thinking activities helped you to improve problem solving, critical thinking and creativity skills. Write your insights.

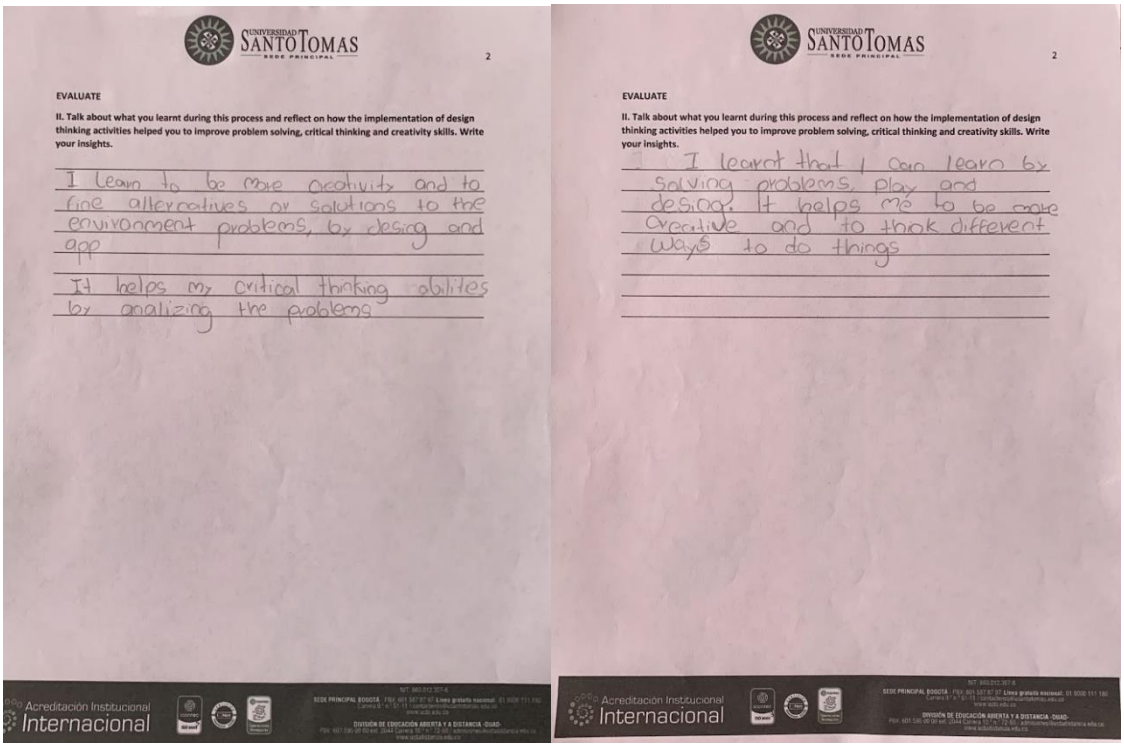
- We can see the "critical" problems that need a smart solution
- We use our brain more hard because we need a right solution that works for every situation
- We use our brain to think of a never seen before solution

Note: The images show some participants' answers in worksheet 3, lesson 1.

In the evaluate session of the second lesson plan, students reflected and talked about what they learned during the implementation of these activities and if these helped them to improve their 21st-century learning skills. Learners wrote their insights in worksheet 2. It was identified

that students could reflect on the importance of taking care of the environment in their communities. Also they talked about the habits they could change to be more sustainable.

Figure 20: Images of some participants' worksheet 2



Note: The images show some participants' reflections in worksheet 2, lesson 2.

Interviews

After the implementation of the pilot, the interview was carried out so that participants could reflect on the design thinking approach, the development of 21st-century learning skills, the prototype session, and the impact and applicability of the activities based on a design thinking approach.

Figure 21: Images of some participants

Note: The image shows a participant filling in the interview.

First, participants affirmed that the design thinking approach is a new method to learn different things at the same time because through the activities developed in the classes, they were able to learn about the topic the lesson was about (e.g., environmental issues and time management), how to solve problems, and were able to enhance their English learning process. Participants mentioned it was a good tool to work in groups, to learn to be organized, and about how to manage their time. All participants said it was easy to complete the stages of the design thinking approach in each lesson. Participants stated that “it is easy because you have the problem clear, then you can do the other stages” and “it was easy because there are many problems to solve”. When students were asked about their favorite stage of the DT approach, all participants affirmed they preferred the prototype stage because they could use their imagination, they could be creative, and they could draw. They also stated they liked to do visual and artistic expression activities.

Students were asked about the development and use of their 21st-century learning skills such as critical thinking, collaborative work, and problem-solving in the pilot. Students considered they developed their critical thinking skills when they had to be creative, and when they had to implement different strategies to think of and find solutions. They said they used these skills when imagining and designing the app, describing the game, and thinking about how to manage time better. Regarding collaborative work, students said it was good, and they liked to work in groups.

Some students said it was easy to work this way because there were more opinions and ideas since there were more students in the groups, they all listened to each other and there were no challenges because they helped each other and distributed the responsibilities. However, some students affirmed there was also a difficult part about it. Some affirmed that it was hard because not all students were willing to collaborate or help with the ideas and they also stated that it was difficult to decide because there were different opinions. Students felt they used problem-solving skills when they had to think of solutions to solve the problems, they had to design the games, and they had to think of activities for the app. They considered that they learned to interact more as a group, they learned new words, and to help each other. They also mentioned they were able to solve problems that happened at the time of creating their prototypes.

Considering the prototype stage was the most hands-on task, students were asked about the challenges they faced while creating their first prototypes. They mentioned some of the challenges were to choose the best ideas to solve the problems, to design specific solutions, and to solve the time management problem by organizing their time to complete all of their daily activities suggested in their prototypes (calendars, to-do lists). Second, students were asked about

the functions they considered were the most important while creating the app, which was the second prototype. Students considered that it was to think of their app functions and what it was going to teach. They also said it was important to be clear with the app instructions for the challenges so the users could understand how to use the app. Another thing was to design these challenges with suggestions for users and activities to take care of the world. Finally, they mentioned the importance of creating different reminders in their apps so users could do all the activities related to sustainability.

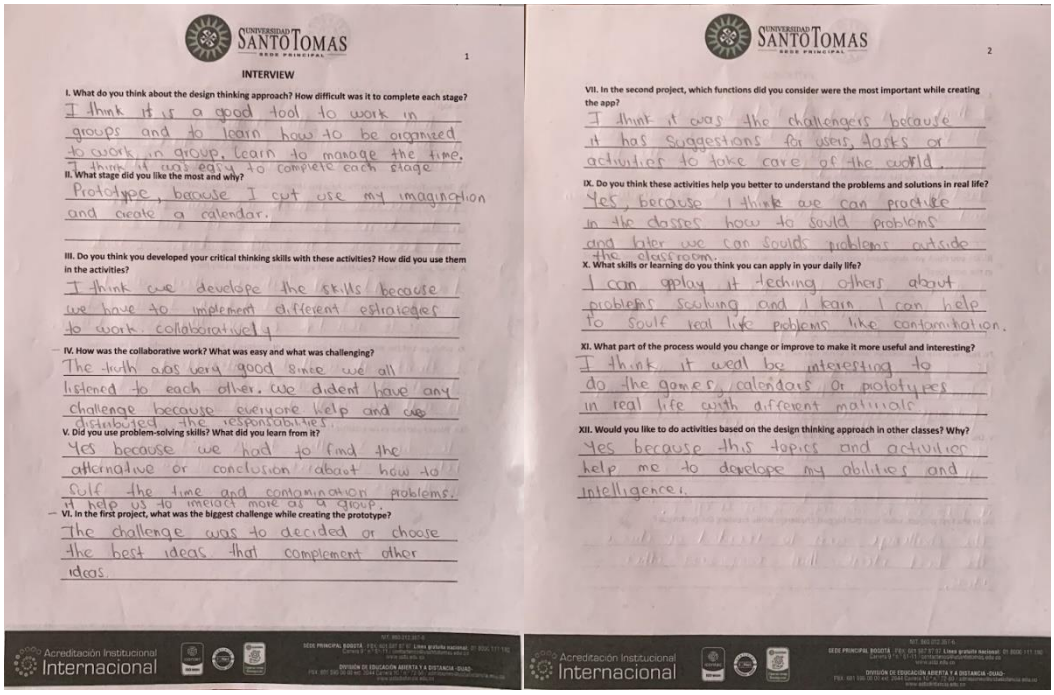
The last four questions of the interview aimed to ask about the impact and applicability of the pilot. First, students were asked if they thought these types of activities helped them to better understand the problems and solutions in real life. All of them affirmed that these activities helped them to understand and find solutions to different problems. Most of them said that when they practice in the class it helps them to solve problems outside the classroom and the more, they practice the faster they will be able to solve problems. Other students thought that these activities helped them to be more critical because they learned to think of problems and understand how to find more beneficial solutions. Additionally, they were asked what learning or skills they considered could apply in real life. They said they could apply their ability to think, to be creative, and to use critical thinking skills. They manifested that they could teach others about problem-solving, they could take care of the environment, and they could manage their time better, which is interesting because they said they could apply 21st-century learning skills but also the learning taken from the topics of each lesson.

Participants were also asked what part of the process they would change or improve to make the design thinking approach more useful or interesting. Some of them said they liked this method, and they did not want to change anything because the activity was interesting and well

organized. They considered it a good method to learn English. However, others said it would be interesting to design the app and create calendars, games, and other prototypes in real life using different materials. They also mentioned all members should have participated in the evaluate session. Finally, participants were asked if they would like to do activities like these in other classes.

They all agreed that these activities should be carried out in other classes. Some students said these activities helped them develop their abilities and intelligence. Others said that if they implement these activities in other classes, they could learn more things related to other topics and realities. Some of them also said that these activities should be part of other classes such as social studies because it would let them use critical thinking to solve problems in other areas. They considered they could entertain and enjoy these lessons with their friends and could learn more in other classes, not only English in the ESL class but for example about social problems in the social studies class.

Figure 22: Images of some participants' interviews.



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SEDE PRINCIPAL

1

INTERVIEW

I. What do you think about the design thinking approach? How difficult was it to complete each stage?
I think it is a good tool to work in groups and to learn how to be organized to work in group. Learn to manage the time. I think it was easy to complete each stage

II. What stage did you like the most and why?
Prototype, because I cut use my imagination and create a calendar.

III. Do you think you developed your critical thinking skills with these activities? How did you use them in the activities?
I think we develope the skills because we have to implement different estrategies to work collaboratively

IV. How was the collaborative work? What was easy and what was challenging?
The truth was very good since we all listened to each other. We dident have any challenge because everyone help and we distributed the responsabilities

V. Did you use problem-solving skills? What did you learn from it?
Yes because we had to find the alternative or conclusion about how to sulf the time and contamination problems. It help us to investigate more as a group.

VI. In the first project, what was the biggest challenge while creating the prototype?
The challenge was to decided or choose the best ideas that complement other ideas.

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SEDE PRINCIPAL

2

VII. In the second project, which functions did you consider were the most important while creating the app?
I think it was the challenges because it has suggestions for users, tasks or activities to take care of the world.

IX. Do you think these activities help you better to understand the problems and solutions in real life?
Yes, because I think we can practice in the classes how to sould problems and later we can sould problems outside the classroom.

X. What skills or learning do you think you can apply in your daily life?
I can apply it teching others about problems sculving and I learn I can help to soulf real life potlems like contamination.

XI. What part of the process would you change or improve to make it more useful and interesting?
I think it weal be interesting to do the games, calendars or prototypes in real life with different materials

XII. Would you like to do activities based on the design thinking approach in other classes? Why?
Yes because this topics and activities help me to develope my abilities and intelligence.

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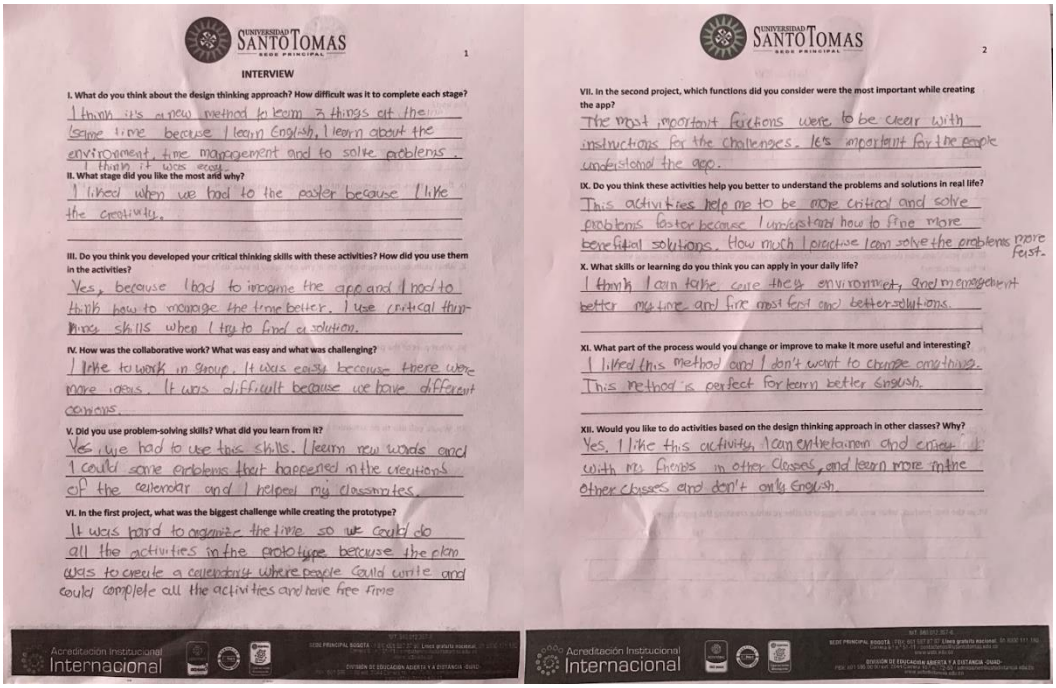


INTERVIEW

I. What do you think about the design thinking approach? How difficult was it to complete each stage?
I think it's a new method to learn 3 things at the same time because I learn English, I learn about the environment, time management and to solve problems. I think it was easy.

II. What stage did you like the most and why?
I liked when we had to the poster because I like the creativity.

III. Do you think you developed your critical thinking skills with these activities? How did you use them in the activities?
Yes, because I had to imagine the app and I had to think how to manage the time better. I use critical thinking skills when I try to find a solution.

IV. How was the collaborative work? What was easy and what was challenging?
I like to work in group. It was easy because there were more ideas. It was difficult because we have different opinions.

V. Did you use problem-solving skills? What did you learn from it?
Yes, we had to use this skills. I learn new words and I could some problems that happened in the creations of the calendar and I helped my classmates.

VI. In the first project, what was the biggest challenge while creating the prototype?
It was hard to organize the time so we could do all the activities in the prototype because the plan was to create a calendar where people could write and could complete all the activities and have free time

VII. In the second project, which functions did you consider were the most important while creating the app?
The most important functions were to be clear with instructions for the challenges. It's important for the people understand the app.

IX. Do you think these activities help you better to understand the problems and solutions in real life?
This activities help me to be more critical and solve problems faster because I understand how to find more beneficial solutions. How much I practice I can solve the problems more fast.

X. What skills or learning do you think you can apply in your daily life?
I think I can take care the environment, and manage my time better my time and find most fast and better solutions.

XI. What part of the process would you change or improve to make it more useful and interesting?
I liked this method and I don't want to change anything. This method is perfect for learn better English.

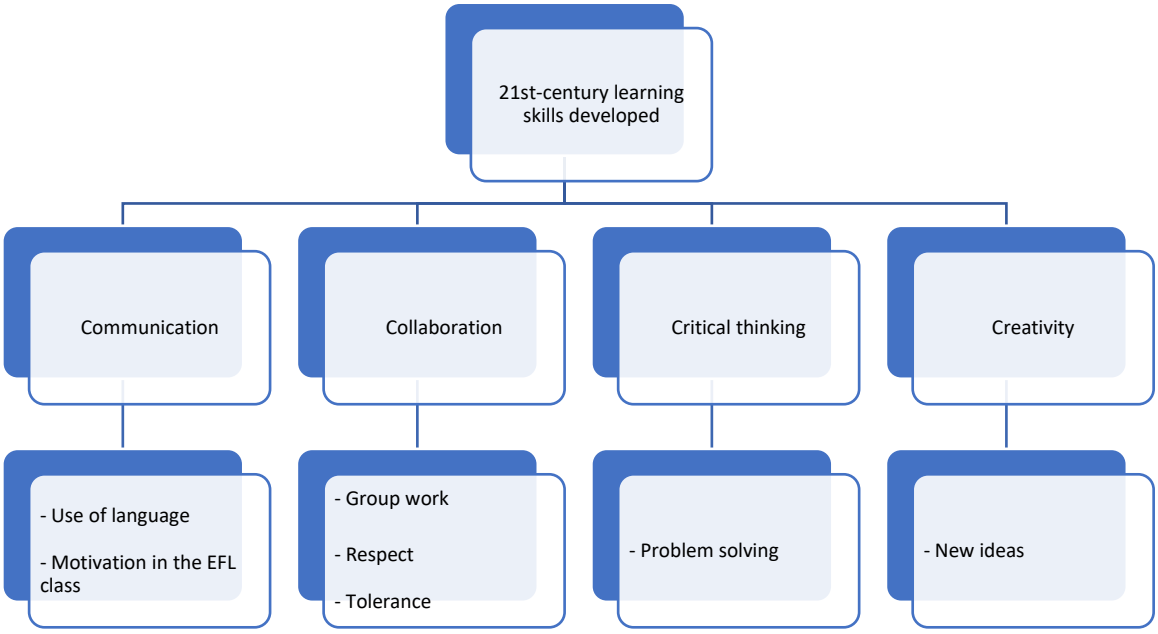
XII. Would you like to do activities based on the design thinking approach in other classes? Why?
Yes, I like this activity, I can entertainment and enjoy it with my friends in other classes, and learn more in the other classes and don't only English.

Note: The images show some participants' answers in the interviews.

Concluding the results

The objective of this action research was to evaluate a pedagogical proposal to enhance 21st-century learning skills in the English as a Foreign Language (EFL) class with seventh graders at a private educational institution in Floridablanca. This was achieved through the implementation of design thinking strategies. Following the implementation of the two sessions with the students, there was a notable advancement in the development of skills that are essential for success in the 21st century.

Figure 23: Illustration of 21st-century learning skills developed



Note: This illustration shows the 21st-century learning skills developed during this project.

Since the EFL class was designed to strengthen 21st-century learning skills, it was expected that students would also develop their communicative skills. Therefore, an important conclusion was the development of learners' communicative skills because to complete the activities and find solutions for the problems, they had to write coherent sentences and use grammar structures and new vocabulary (see Figure 10). The students demonstrated a good use of grammar throughout the pilot. When they made mistakes, the teacher used the opportunity to explain and clarify any doubts they had related to the grammar issues. Students also used new vocabulary and since they were talking about new topics, they practiced and acquired new vocabulary too. They also expressed their ideas orally, while discussing with their classmates and presenting their prototypes, with some typical pronunciation mistakes that are normal at their level (see Figure 18).

Successful collaborative work took place since the students were able to complete the activities and come up with a solution to the problems chosen. They discussed the topics, were

active listeners, respected others' ideas, helped each other, and delegated responsibilities. They were understanding and were able to reach agreements (see Figure 14). However, some of them did not interact that much and did not collaborate with the responsibilities the group had (see Figure 22).

One of the most important achievements of this project related to critical thinking skills was that students could use English as a means to reflect on everyday issues and topics, such as time management and the environment, that would have been ignored without these types of activities. They reflected on having "more organization in my things since time is valuable" and understanding that "the environment is very important to take care of it because it is the place where we live". Another important outcome of this was that they were able to "reconsider some of my actions if I am acting good or bad" (see Figure 19). Finally, students affirmed the activities helped their "critical thinking abilities by analyzing the problems" (see Figure 20). Additionally, it became evident that problem-solving skills effectively improved because students could think of solutions to solve the environmental problems identified in their discussions. They stated that it "helped me to look for different alternatives and to build a progressive future" (see Figure 19). Students were very reflective and aware of the fact that they not only could solve problems related to the activities but also, they could face the challenges that came up when they were working in groups. Students could solve the problems related to environmental and time management issues; they could be proactive by using the English language to make suggestions.

Finally, creativity was also fostered. Students found innovative solutions and proposed creative prototypes (see Figure 17). Students' motivation was also enhanced because they claimed they enjoyed creating the visual draft of the app and the posters a lot. Undoubtedly, their favorite stage of the design thinking approach was the prototype because they could express their

creativity to solve the problems (see Figure 22). They came up with different ideas for designing the activities for their apps. They said these were challenging activities that forced them to try hard to “think of a never seen before solution” (see Figure 19). The effectiveness of the design thinking approach, when used to strengthen 21st-century learning skills, is demonstrated in this project in the creative and thoughtful work produced by the students.

DISCUSSION AND CONCLUSIONS

The results of this project highlighted the significance of developing 21st-century learning skills such as communication, collaboration, critical thinking, and creativity in the English class. It is suggested that the English class go beyond traditional teaching methods and strategies, focusing not only on developing language components such as grammar, vocabulary, and other language aspects. Instead, English should be used as a tool to promote and enhance other abilities in students, such as life skills, literacy skills, and learning skills, which have become more important due to the demands of globalization in the last decade. These abilities are necessary for citizens to remain competitive, succeed in their future jobs, adapt to the demands of a constantly changing world, and contribute to the development of their country.

The success of this strategy is undeniable. However, moderate use ensures its effectiveness over time. It is suggested that teachers implement this strategy for a limited period, as overuse could be extremely monotonous for students. It is recommended that these activities, based on a design thinking approach, be combined with other methods to prevent student fatigue. When DT is complemented with a different method or strategy, it can make the learning process more effective and contribute to better results in the learning process. This approach can also be

applied to other subjects, as it allows students to improve their 21st-century learning skills and relate them to various topics and issues in academic and real-life contexts.

To sum up, this project reinforces the importance of strengthening 21st-century learning skills in the EFL class to prepare students for the future. The results of this study indicate that the DT approach is an effective strategy to enhance students' skills. Using this approach helps learners not only improve their English proficiency, but also strengthen skills such as collaboration, critical thinking, and creativity. When DT is implemented in a learning environment, it contributes to the learning process. In conclusion, this research promotes a pedagogical change in educational settings, encouraging the development of essential skills for students to become active participants in the modern world.

LIMITATIONS

While the project achieved its objectives, certain limitations were identified during its implementation. One of them was the time for the implementation of the lesson plans because it took a little more time than the one planned at the beginning. However, it was also positive since the reason why students took more time to develop the activities was because they were very committed. They used their time wisely and had a lot of discussions, took their time to make decisions, designed creative prototypes, and completed all the activities. Another challenge identified during the project was the different levels of English proficiency among participants. While the majority of students were considered to be B1 level, there were others who lacked the vocabulary needed to express their ideas, so they struggled to make themselves understood during certain activities. In such cases, it is suggested to adapt the activities to their proficiency

levels. The teacher could dedicate time to addressing any doubts regarding grammar or vocabulary. Additionally, it is essential to know your students to choose the activities according to students' interests, as previously mentioned in this paper.

Despite some challenges, the project provides a solid foundation for applying this strategy to other subjects, such as social studies, math, and more, not only to enhance the learning of subject-specific topics but also to foster the development of 21st-century learning skills. These skills are essential in real-life contexts and will enable students to become valuable members of society. This study also opens the door for future research on the implementation of activities based on a design thinking approach across various subjects and educational contexts. Through this proposal, we provide lesson plans that other teachers could adopt, not only to improve the linguistic components of English classes but also to strengthen essential 21st-century learning skills such as critical thinking, problem-solving, collaboration, creativity, and communication. As evidenced in this project, the activities can motivate students, encourage active participation, and foster self-reflection in their learning process.

Future studies could benefit from a longer implementation period to carry out mora lesson plans and have a deeper understanding of the effectiveness of Design Thinking. Also, considering the limitations associated with the time of implementing lesson plans, it is important for educators to conduct a pilot before executing design thinking activities. It will provide insight into students' interests, behaviour, and perceptions, allowing teachers to design accurate lesson plans and choose the best scope of activities for their students’ needs.

REFERENCES

Al-Zebdyah, S. (2022). English Language Teachers' Perceptions about Design Thinking. Journal of Curriculum and Teaching. 11. 97. 10.5430/jct.v11n4p97.

Ananiadou, K., & Claro, M. (2009). 21st century skills and competences for new millennium learners in OECD countries (OECD Education Working Papers No. 41). OECD Publishing. https://doi.org/10.1787/218525261154

Antonellis, P. J., & Berry, G. (2017). Practical Steps for the Utilization of Action Research in Your Organization: A Qualitative Approach for Non-Academic Research. International Journal of Human Resource Studies, 7(2), 41-59.

Bastidas, J., & Muñoz, G. (2020). Hacia una Comprensión del Bajo Nivel de Inglés de Bachilleres en Pasto, Colombia (en prensa).

Benzerroug, S. (2021). Effective language teaching and learning process in EFL classroom situation: A case study. International Journal of Linguistics, Literature and Translation, 4(8), 54–64. https://doi.org/10.32996/ijllt.2021.4.8.8

Betancourt, B. L. C., & Ramos, A. D. U. (2024). Reflecting about bilingualism policies in non-English speaking countries in Latin America: The case of Colombia and Argentina. Rastros Rostros, 26(1), 2.

Calavia, M., Blanco, T., Casas, R. & Dieste, B. (2022). Making Design Thinking for Education sustainable: Training preservice teachers to address practice challenges. Thinking Skills and Creativity. 47. 101199. 10.1016/j.tsc.2022.101199.

Chalkiadaki, A. (2018). A systematic literature review of 21st century skills and competencies in primary education. International Journal of Instruction, 11(3), 1-16. https://doi.org/10.12973/iji.2018.1131a

Clark, J. S., Porath, S., Thiele, J. & Jobe, M. (2020). Action Research. NPP eBooks. 34. https://newprairiepress.org/ebooks/34

Dam, R. F. (2024, March 1). The 5 Stages in the Design Thinking Process. Interaction Design Foundation - IxDF. https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process

Driveresearch. (2023). What is mixed-method research? [Examples & benefits]. https://www.driveresearch.com/market-research-company-blog/what-is-mixed-mode-data-collection-marketing-research-firm-syracuse-ny/

Educational First. (2023). EF English proficiency index: A ranking of 111 countries and regions by English skills. https://www.ef.com/wwen/epi/

Emerald Group Publishing. (n.d.). How to carry out action research. Retrieved November 1, 2024, from https://www.emeraldgrouppublishing.com/how-to/research-methods/carry-out-action-research

Fandiño, Y. J. (2013). 21st century skills and the English foreign language classroom: A call for more awareness in Colombia. GIST – Education and Learning Research Journal, 7, 190–208. https://latinjournal.org/index.php/gist/article/view/622

Getie, A. (2020). Factors affecting the attitudes of students towards learning English as a foreign language. Cogent Education. 7. 10.1080/2331186X.2020.1738184.

Gomez, L. (2020). Envisioning Bilingualism and Bilingual Education: Society, Culture and Identity. https://fliphtml5.com/qxsv/zvfd

González-Salamanca, J, Agudelo, O, & Salinas, J. (2020) "Key Competences, Education for Sustainable Development and Strategies for the Development of 21st Century Skills. A Systematic Literature Review" Sustainability 12, no. 24: 10366. https://doi.org/10.3390/su122410366

Hummel, B. (2024, March 14). What are 21st-century skills? International Center for Education and Vocational Training. https://www.icevonline.com/blog/what-are-21st-century-skills

ICEV. (n.d.). 21st century skills infographic [Infographic]. ICEV. https://www.icevonline.com/blog/what-are-21st-century-skills

Inter-American Development Bank. (2019, September 9). IDB supports program to develop 21st century skills in Colombian youth. https://www.iadb.org/en/news/idb-supports-program-develop-skills-21st-century-colombian-youth

Jiménez, A. B., & Betancourt, B. L. C. (2024). Teacher Training In Colombia From A Historical Perspective. *Migration Letters*, *21*(S5), 1206–1219. Retrieved from https://migrationletters.com/index.php/ml/article/view/8106

Lazorenko, L. & Krasnenko, Oksana. (2019). THE IMPORTANCE OF DEVELOPING 21ST CENTURY SKILLS FOR ADVANCED STUDENTS. 10.30525/978-9934-588-15-0-13.

Luka, I. (2020). Design thinking in pedagogy. Journal of Education Culture and Society, 5(2), 63–74. https://doi.org/10.15503/jecs20142.63.74

Mavuru, L. & Ramnarain, U. (2017). Teachers' Knowledge and Views on the Use of Learners' Socio-cultural Background in Teaching Natural Sciences in Grade 9 Township Classes. African Journal of Research in Mathematics, Science and Technology Education. 21. 1-11. 10.1080/18117295.2017.1327239.

Mertler, C. (2021) "Action Research as Teacher Inquiry: A Viable Strategy for Resolving Problems of Practice," Practical Assessment, Research, and Evaluation: Vol. 26, Article 19. Available at: https://scholarworks.umass.edu/pare/vol26/iss1/19

Ministerio de Educación Nacional. (2021). The Ministry. https://www.mineducacion.gov.co/portal/secciones/English-version/The-Ministry/

Ministry of Education, Government of India. (n.d.). 21st century skills handbook. https://www.education.gov.in/covid-19/Hindi/assets-hi/img/pdf/21st_Century_Skill_Handbook.pdf

Motta Bustos, M. E., Sosa Quiñonez, M. C., & Naranjo Corría, R. (2024). Analysis of the principal factors that affect the English language learning process of 8th-grade students. Estudios y perspectivas: Revista científica y académica, 4(1), 421–442. https://doi.org/10.61384/r.c.a.v4i1.109

OECD (2013). Innovative Learning Environments, Educational Research and Innovation. OECD Publishing, Paris, https://doi.org/10.1787/9789264203488-en.

Oregon State University (2023). Introduction to Qualitative Research Methods. Chapter 13. Participant Observation. https://open.oregonstate.education/qualresearchmethods/chapter/chapter-13-participant-observation/

Osorio de Sarmiento, M., Cely Betancourt, B. L., Ortiz Vergara, M., Benito, J. A., Herrera Mateus, C., Bernal, A. A., ... & Univio Molano, J. E. (2020). Tendencias en la formación de docentes de lenguas extranjeras y necesidades de los contextos educativos de educación básica y media en Colombia.

Palacios-Hidalgo, F., Huertas, C. & Gómez, M. (2021). Foreign and Bilingual Language Education in the UK and Spain: A Study of Similarities and Differences. 7. 261-273. 10.17323/jle.2021.11938.

Pande, M., & Bharathi, V. (2020). Theoretical foundations of design thinking – A constructivism learning approach to design thinking. Thinking Skills and Creativity, 36. https://doi.org/10.1016/j.tsc.2020.100637

Parker, F. & Novak, J. & Bartell, T. (2017). To engage students, give them meaningful choices in the classroom. Phi Delta Kappan. 99. 37-41. 10.1177/0031721717734188.

Quayson, F. (2019). Understanding Action Research Methodology As A Strategy To Reflect, Design, Implement, Refine, And Gather Data To Explore Questions Of Professional Interest. 2. 13. 10.55138/sq104284feo.

Rao, P. S. (2019). The role of English as a global language. Research Journal of English, 4(1), 65-79.

Rashid, Md. & Rahman, M. (2020). The Impact of Sociocultural Contexts on English Language Learning: A Study of Primary Level Education in Bangladesh. 1.

Rodríguez, S., & Araque, D. (2020). Maestría en ambientes bilingües de aprendizaje. Universidad Santo Tomás. https://doi.org/10.15332/dt.inv.2021.01748

Schnell, Z & Podeschi, C. (2022). A novel methodology of international discourse: online joint course across cultures. Humanities and Social Sciences Communications. 9. 10.1057/s41599-022-01233-1.

Sotlikova, R. (2023). Design thinking in Education: Empowering students in ELT class. Proceedings Series on Social Sciences & Humanities, 13, 196–199.

https://www.researchgate.net/publication/375966579_Design_thinking_in_Education_Empowering_students_in_ELT_class

Tang, K. N. (2018). The importance of soft skills acquisition by teachers in higher education institutions. Kasetsart Journal of Social Sciences. https://doi.org/10.1016/j.kjss.2018.01.002

Tawfiq, H. (2020). Investigating the Sociocultural Factors That Affect Learning a Second Language (on the Example of English). International Journal of Linguistics. 12. 81. 10.5296/ijl.v12i4.17280.

TeachingEnglish. (n.d.). How to implement 21st century skills. British Council. https://www.teachingenglish.org.uk/professional-development/teachers/21st-century-skills/magazine/how-implement-21st-century-skills

Ternenge, T., & Torkuma, T. (2021). Socio-cultural and economic factors as correlate of academic performance of undergraduates in the department of library and information science, Benue State University, Makurdi. Library Philosophy and Practice (e-journal), 5758. https://digitalcommons.unl.edu/libphilprac/5758

Thornhill-Miller, B., Camarda, A., Mercier, M., Burkhardt, J. M., Morisseau, T., Bourgeois-Bougrine, S., Vinchon, F., El Hayek, S., Augereau-Landais, M., Mourey, F., Feybesse, C., Sundquist, D., & Lubart, T. (2023). Creativity, critical thinking, communication, and collaboration: Assessment, certification, and promotion of 21st century skills for the future of work and education. Journal of Intelligence, 11(3), 54. https://doi.org/10.3390/jintelligence11030054

Todorova, N. & Todorova, A. (2018). Globalization and the Role of the English Language. Mìžnarodnì zv'âzki Ukraïni: naukovì pošuki ì znahìdki. 331-348. 10.15407/mzu2018.27.331.

Trilling, B., & Fadel, C. (2009). 21st century skills: Learning for life in our times. John Wiley & Sons. Retrieved from https://ardian.id/wp-content/uploads/2018/10/21st_Century_Skills_Learning_for_Life_in_Our_Times____2009-3.pdf

Tsai, C,. & Song, M,. & Lo, Y,. & Lo, C. (2023). Design Thinking with Constructivist Learning Increases the Learning Motivation and Wicked Problem-solving Capability-An Empirical Research in Taiwan. Thinking Skills and Creativity. 50. 101385. 10.1016/j.tsc.2023.101385.

Uba, S. (2023). The Effect of Socio-Cultural Factors on English Language Learning and the Impact on SSCE Results: The Case of Private vs Public Secondary Schools in Kano, Nigeria. 22. 483-498. 10.26803/ijlter.22.2.26.

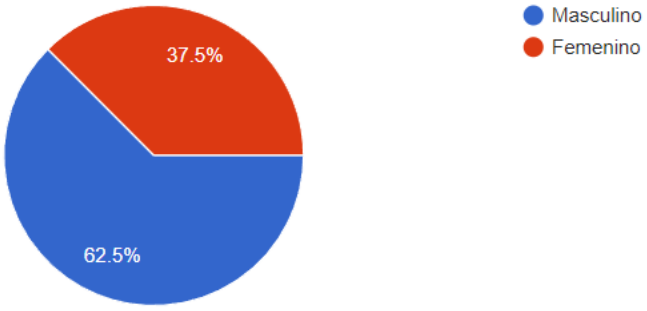
Uribe-Enciso, O., Uribe-Enciso, D. S., & Vargas-Daza, M. P. (2017). Critical thinking and its importance in education: Some reflections. Rastros Rostros, 19(34), 78-88. https://doi.org/10.16925/ra.v19i34.2144

Valle, L., Lorduy-Arellano, D., & Porras-González, N. (2022). Using Reverse Mentoring to Transform In-Service Teachers' Beliefs About How to Teach English. Profile Issues in Teachers` Professional Development, 24(1), 63-76. https://doi.org/10.15446/profile.v24n1.93061

Vite, H. (2014). Ambientes de aprendizaje. Ciencia Huasteca Boletín Científico de la Escuela Superior de Huejutla. 2. 10.29057/esh.v2i4.1069.

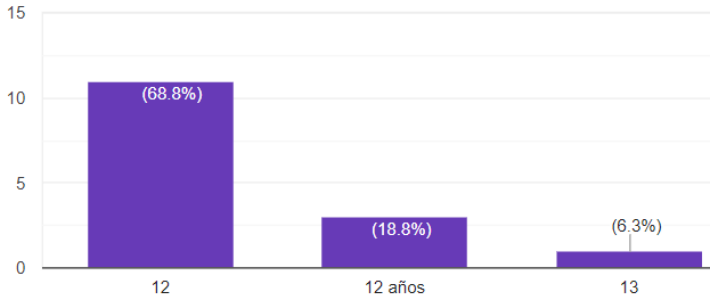
Appendixes

Appendix 1. Responses



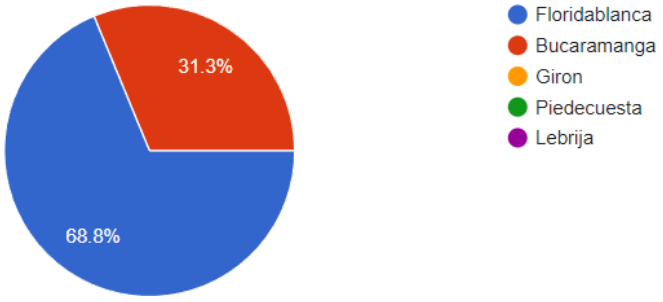
Appendix 1. Participants' gender

Appendix 2. Responses



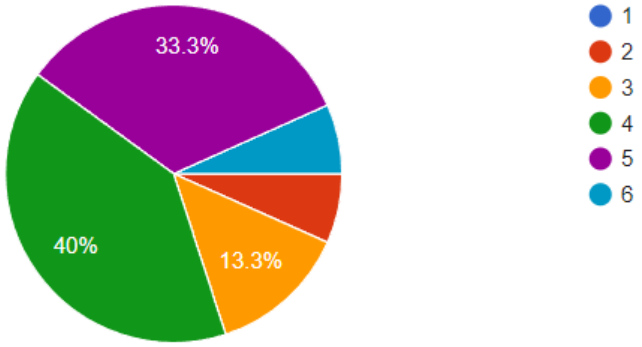
Appendix 3. Participants' age

Appendix 3. Responses



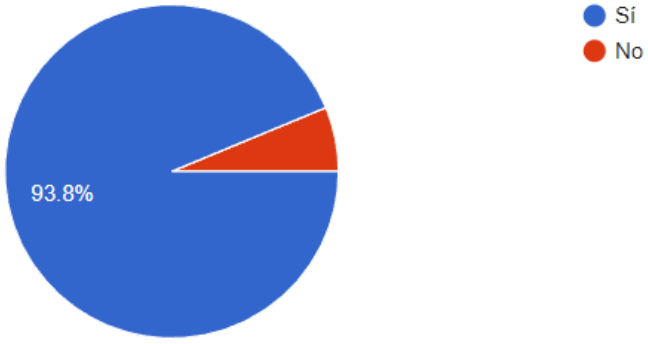
Appendix 2. Participants' residence place

Appendix 4. Responses



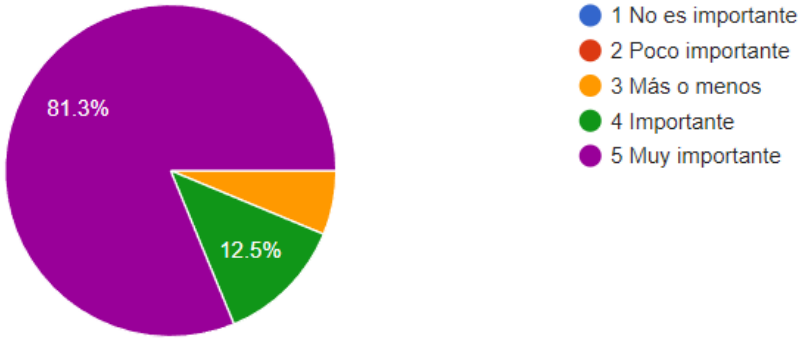
Appendix 4. Participants' socioeconomic stratum

Appendix 5. Responses



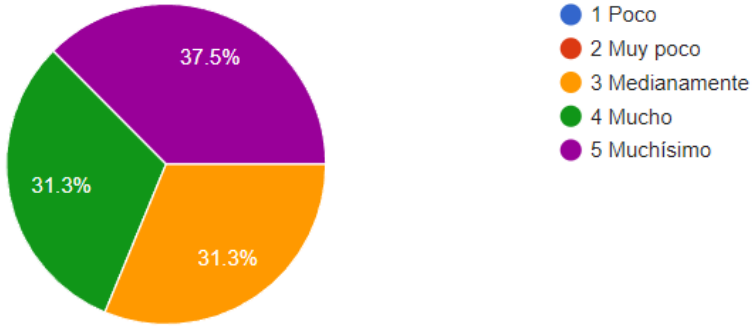
Appendix 5. If participants like English

Appendix 6. Responses



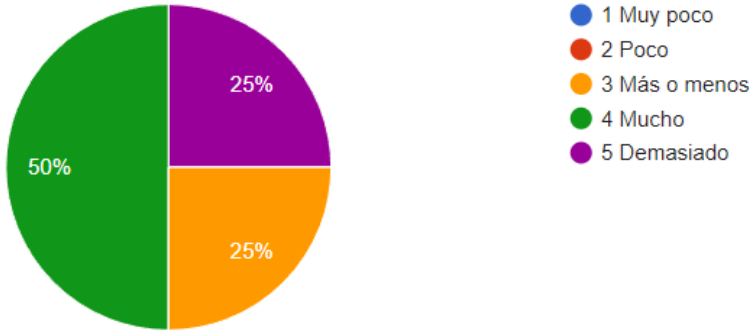
Appendix 6. If participants consider learning English important

Appendix 7. Responses



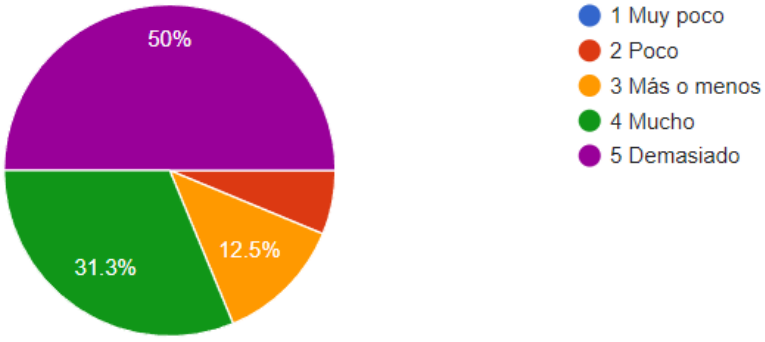
Appendix 7. If participants make an effort when learning English

Appendix 8. Responses



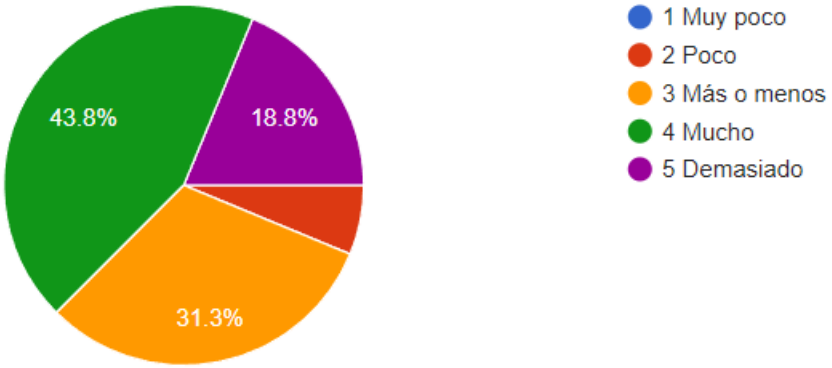
Appendix 8. If participants are perseverant when practicing or engaging in an activity

Appendix 9. Responses



Appendix 9. If participants like working in group

Appendix 10. Responses



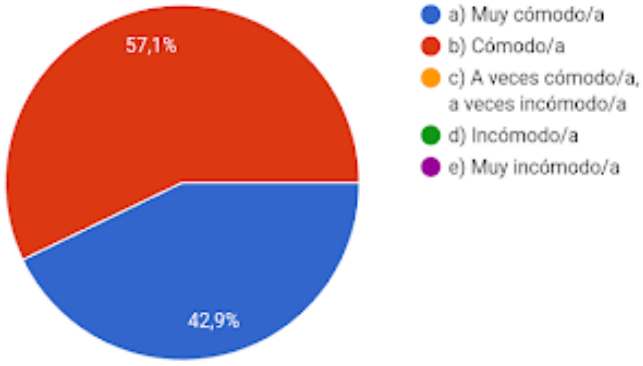
Appendix 10. If participants actively participate in decision-making when working in group

Appendix 11. Responses

Hacer salidas a espacios abiertos o hacer un compartir.
cuando hay juegos didacticos en la que todos prticipamos individualmente
Hacer dibujos socializar con mis compañeros me gusta compartir me gusta hacer nuevos amigos y ya
me gusta hacer actividades del libro en grupo
Me gusta dibujar
Cuando nos dejan trabajar al aire libre
Escuchar musica en inglés durante la clase de inglés. Pienso que es entretenido :)
hacer mas juegos

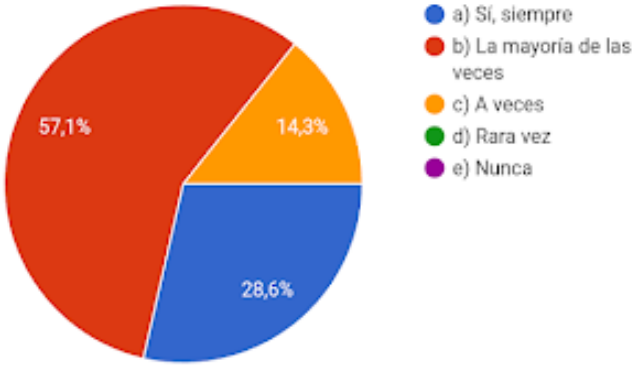
Appendix 11. Participants' other responses about activities they enjoy doing in class

Appendix 12.



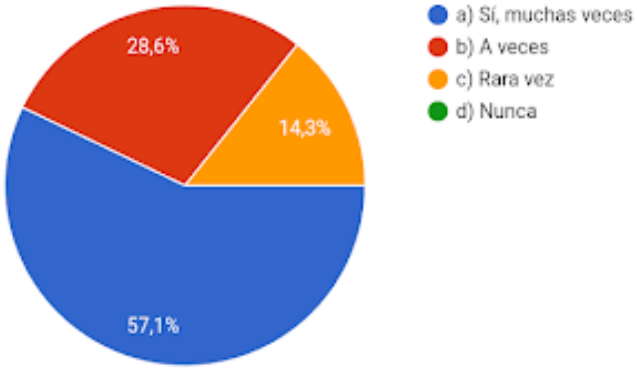
Appendix 12. How participants generally feel during English class

Appendix 13.



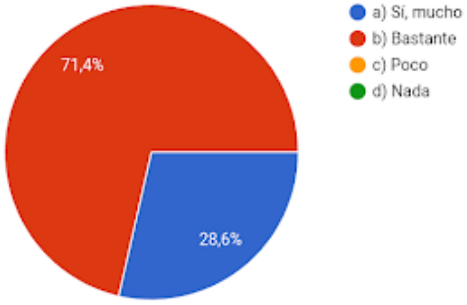
Appendix 13. Participants' confidence to ask questions or express their ideas in class

Appendix 14.



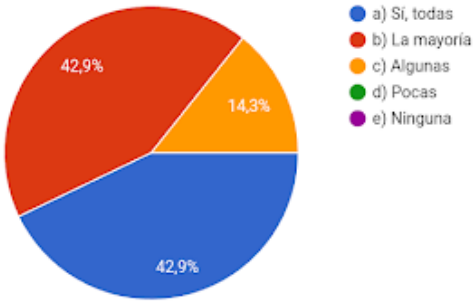
Appendix 14. Whether participants feel their feelings or opinions are considered during class

Appendix 15.



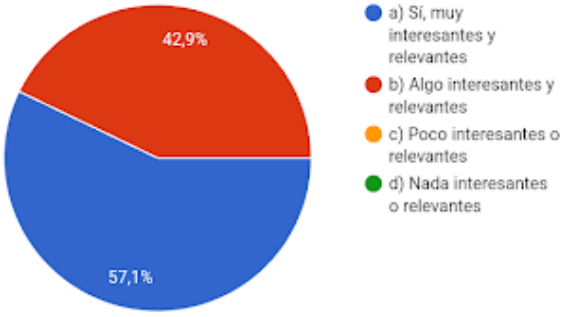
Appendix 15. Participants' perception of their learning and improvement in their English proficiency in this class

Appendix 16.



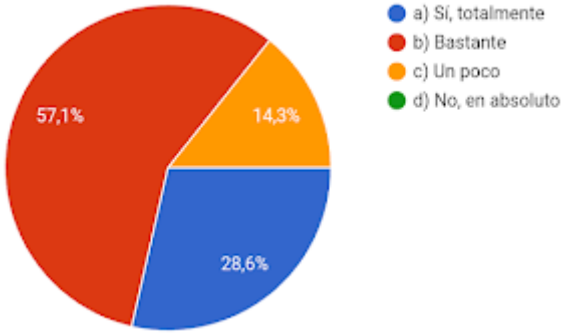
Appendix 16. How class activities help participants improve their English skills

Appendix 17.



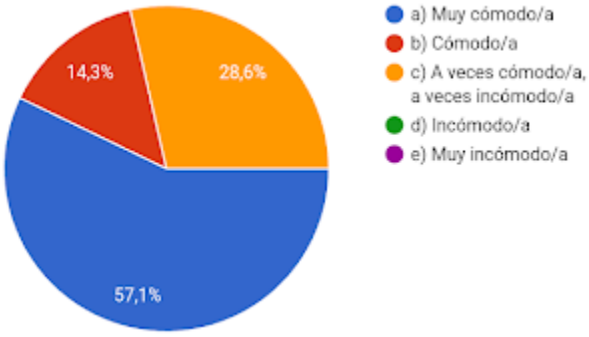
Appendix 17. Participants' opinions on whether the class topics and activities are interesting and relevant to them

Appendix 18.



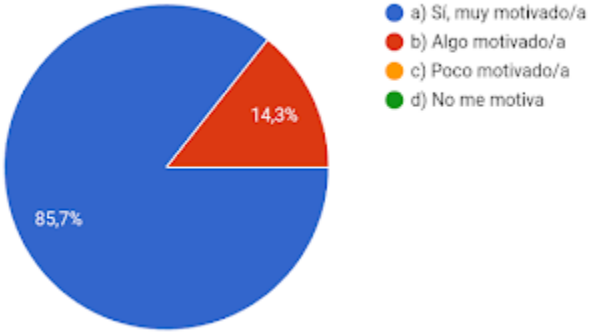
Appendix 18. The degree to which the class activities adapt to participants' needs and interests

Appendix 19.



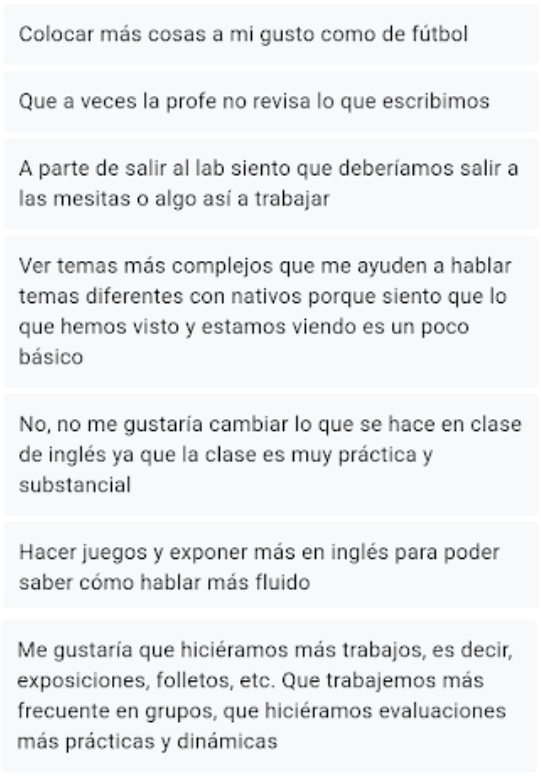
Appendix 19. Participants' comfort level working in groups

Appendix 20.



Appendix 20. Motivation to improve English proficiency

Appendix 21.



Appendix 21. Suggestions to change or improve English class

Appendix 22. **Consent forms**

Appendix 23. **Online Questionnaire on learners' interests**

Appendix 24. **Questionnaire on learners' perceptions towards the English class**

Appendix 25. **Participant observations format**

Appendix 26. **Interview format**

Appendix 27. **Introductory activity**

Appendix 28. **Lesson plans**

Appendix 29. **Worksheets**