



Original Research

Implementation of Project-Based Learning Methodology in a Plurilingual Context

Implementación de la Metodología de Aprendizaje Basado en Proyectos en un Contexto Plurilingüe

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Abstract: Expanding beyond bilingualism, scholars have highlighted a significant link between multilingualism and language education. In this paradigm, one popular approach used in bilingual and multilingual educational contexts is Content and Language Integrated Learning (CLIL). Researchers endorse the integration of CLIL with active methodologies, such as Project-Based Learning (PBL), as it has become an effective teaching method that enables students to acquire versatile knowledge. The present communication aims to analyze the implementation of projects in a multilingual context while applying the CLIL approach and the impact that they might have on students' language learning. The main objective of this communication is to study the implementation of projects in a multilingual context while applying the CLIL approach. This project involves gathering the personal opinions of CLIL and PBL Primary Education teachers through a questionnaire and conducting two different semi-structured interviews. Additionally, data has been collected through observations in a focus group of fifth graders in a public Early Childhood and Primary Education center in the autonomous community of Valencia. The findings of this study have practical implications for educators, suggesting the adoption of CLIL-PBL approaches in multilingual classrooms to enhance language education and support students' overall development.

Keywords: Bilingual and Plurilingual Educational Contexts, Content and Language Integrated Learning (CLIL), Language Education, Plurilingualism, Project-Based Learning (PBL)

Resumen: Más allá del bilingüismo, los estudiosos han puesto de relieve el importante vínculo que existe entre el multilingüismo y la enseñanza de idiomas. En este paradigma, un enfoque muy utilizado en contextos educativos bilingües y multilingües es el aprendizaje integrado de contenidos y lenguas extranjeras (AICLE). Los investigadores respaldan la integración de AICLE con metodologías activas, como el aprendizaje basado en proyectos (ABP), ya que se ha convertido en un método de enseñanza eficaz que permite a los estudiantes adquirir conocimientos versátiles. La presente comunicación pretende analizar la realización de proyectos en un contexto plurilingüe aplicando el enfoque AICLE y el impacto que pueden tener en el aprendizaje de idiomas de los estudiantes. El objetivo principal de esta comunicación es estudiar la realización de proyectos en un contexto multilingual aplicando el enfoque AICLE. Este proyecto consiste en recoger las opiniones de los profesores de Educación Primaria de AICLE y PBL mediante un cuestionario y la realización de dos entrevistas semiestructuradas diferentes. Además, se han recogido datos a través de observaciones en un grupo focal de alumnos de 5.º curso en un centro público de Educación Infantil y Primaria de la comunidad autónoma de Valencia. Los resultados de este estudio tienen implicaciones prácticas para los educadores, ya que sugieren la adopción de enfoques AICLE-PBL en aulas multilingües para mejorar la enseñanza de idiomas y apoyar el desarrollo general de los estudiantes.

Palabras clave: Contextos Educativos Bilingües y Plurilingües, Aprendizaje Integrado de Contenidos Lingüísticos (AICLE), Educación Lingüística, Plurilingüismo, Aprendizaje Basado en Proyectos (ABP)

Introduction

In the middle of the twenty-first century, new communication technologies and globalization have greatly impacted language practices (Singh 2021). Since the end of the nineteenth century and throughout the twentieth century, English has progressively been granted the status of lingua franca or global language because of educational, professional, or tourist reasons (Crystal 2003; Jenkins 2005; Wasik 2023). In this scenario, the European Union has supported numerous foreign language–learning initiatives to foster communicative language proficiency over the past several decades. These initiatives aim at promoting English language learning and linguistic diversity, among which Bilingual Educational Projects (BEP) stand out.

These have brought long-term benefits for children’s mastery in literary proficiency in both languages since this type of education leads to outstanding English outcomes in terms of advancing the cognitive, social, cultural, and communicative skills. At the same time, they learn the curricular content through an additional language as a medium of instruction. However, expanding beyond bilingualism, Prasad (2020) asserts that there exists a significant connection between plurilingualism and language education, both of which aim to boost the language user’s ability to speak several languages simultaneously in a particular geographical region. For this reason, it is crucial for education to increase consciousness of each language equally to promote profound care and understanding of the cultural and linguistic diversity in the educational system.

In this paradigm, one popular approach used in bilingual and plurilingual educational contexts is Content and Language Integrated Learning (CLIL). Since the 1950s, it has been implanted in several European countries with the aim of ensuring language diversity inside the education setting. This approach is an umbrella term coined by Maljers et al. in 2010 that covers many varieties of educational programs and projects focused on the teaching and learning of academic content through a foreign language. Escobar Urmenate (2015, 11) claims that “CLIL has the potential to facilitate intercultural communication, internationalization, the mobility of labor, and help people to adapt to various social environments.” In the Primary educational field, this method could provide students with purposeful, innovative, and meaningful learning experiences both inside and outside the class, giving them the ability to learn how to reflect and learn in a foreign language.

This approach is supported inside the scholarly sphere by active, experimental, holistic, and constructive pedagogies. Researchers endorse the integration of CLIL with active methodologies such as PBL because it has become an effective teaching method that enables students to acquire versatile knowledge in each foreign language–learning skill (Meng et al. 2023). To achieve the effectiveness of this combination, it would remain essential to focus on a specific educational stage. According to Darling-Hammond et al. (2015), in Primary Education, children easily absorb additional items making their learning more efficient.

A crucial requirement to allow their real implementation inside the school basis and curriculum is the role of teachers as facilitators because they are the ones who help students to develop flexible knowledge, acting as essential mentors. Considering this, the purpose of this article is to examine the role of PBL as a key support pillar in the CLIL approach.

The main objective is to study the implementation of PBL in a plurilingual context while applying the CLIL approach. To achieve the purpose of this article, the following specific objectives have been established:

- Analyze the PBL methodology in real contexts.
- Assess the PBL implementation in a plurilingual context using rubrics and direct observation, identifying strengths, weaknesses, and areas for improvement.
- Identify teachers' perceptions about the PBL implementation through the CLIL approach in plurilingual contexts.
- Determine the relationship between the use of PBL in CLIL teaching–learning contexts and its effect on students' learning process.

Theoretical Framework

The CLIL Approach

CLIL is a dual-focused educational approach in which an additional language is used for the learning and teaching of content and language mastery to predefined levels. According to Marsh (2002), CLIL is an umbrella term that embraces different programs where an additional language is used to teach non-linguistic content. The CLIL approach will take a different shape depending on factors such as the education system, education stage, or the wider sociolinguistic environment in which it is embedded.

Marsh states that there is no single blueprint for CLIL. Its essence is in integration. The dual focus of having to reach both language and content outcomes is bound to transform the conventional teaching practice. Authors who support this idea include Coyle et al. (2010), who argue that CLIL enables students to develop both language and content knowledge simultaneously, and Cummins (2000), who emphasizes the importance of building on students' prior knowledge and experiences. Vygotsky's socio-cultural theory emphasizes the role of culture and communication in learning (Vygotsky 1578). To understand this approach, Marsh emphasizes that CLIL is not simply language or subject learning, but rather a fully integrated approach to learning both simultaneously and he identifies several core features to distinguish CLIL from other approaches.

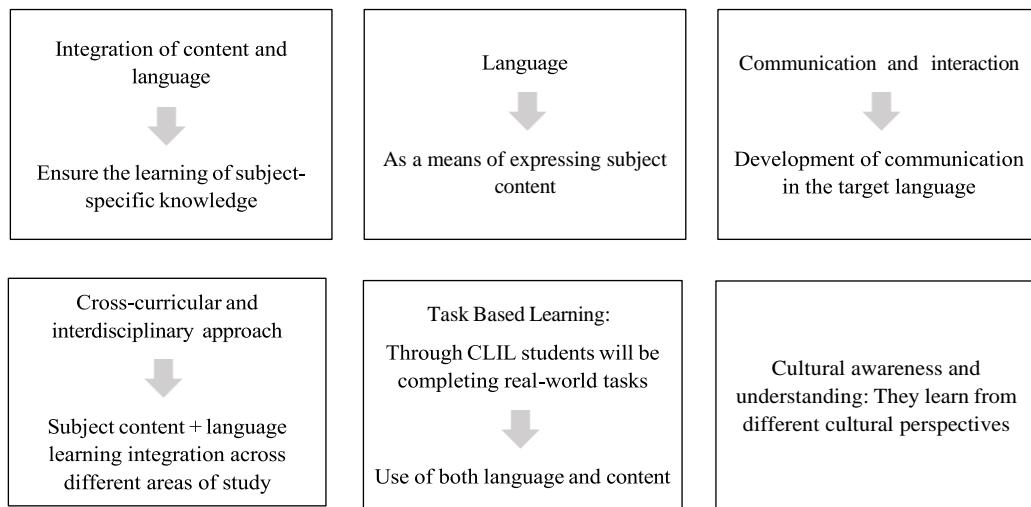


Figure 1: Core Features of CLIL Approach

In the CLIL approach, the quality of the learning process is influenced by the adaptability of teaching materials to different students' characteristics and language proficiency levels. As Coyle et al. (2010) suggest, materials should be designed to support content and language-learning objectives and differentiated to meet the diverse needs of learners. When creating CLIL materials, it is important to consider the level of language and content difficulty, as well as the cultural relevance and authenticity of the materials. This is supported by Coyle (2008), who emphasizes the importance of selecting materials that are relevant and meaningful to students' experiences and backgrounds.

Authentic materials and realia are two essential components of the CLIL approach. Authentic materials refer to materials that are produced for native speakers and reflect the language and culture of the target language community. Realia, on the other hand, refers to real objects or artifacts from the target culture that are used in the classroom to provide a more realistic and immersive learning experience (Coyle et al. 2010). The use of authentic materials and realia can help students to develop their cognitive abilities, such as critical thinking and problem-solving skills. This is because both present information in a more complex and challenging way, which can help students to be involved in authentic communication and learn about the target culture in a more meaningful way.

The use of ICTs (Information and Communication Technologies) can greatly influence the development of the CLIL approach. According to Yarin et al. (2024), ICTs provide opportunities for learners to access and interact with authentic materials and real-world situations, which can enhance their language and content learning. Ebtisam (2024) argues that ICTs can facilitate the creation and adaptation of CLIL materials and provide opportunities for collaborative and communicative activities among learners. The use of ICTs in CLIL can

support differentiated instruction and personalized learning, as learners can work at their own pace and engage with materials and activities that are tailored to their needs and interests. Luís and Rodrigues (2024) argue that using digital tools can provide opportunities for learners to collaborate and share their ideas in a supportive and interactive online environment.

The Project-Based Learning Methodology

Project-Based Learning (PBL) refers to an inquiry-based instructional method that engages learners in knowledge construction by having them accomplish meaningful projects and develop real-world products. PBL has its roots in Inquiry-Based Learning, which implies an active learning and a student-centered approach.

According to Gago and Vico (2014), these projects often involve students in design, problem-solving, decision-making, and investigation over an extended period. Students are given autonomy by a teacher-facilitator, and the projects usually culminate in a presentation or realistic product. For this reason, this approach goes beyond traditional teaching methods by emphasizing the accomplishment of tangible outcomes. In this line, PBL incorporates key principles to guide curriculum design and implementation. A driving question should motivate learning throughout the PBL unit, meeting criteria such as feasibility, contextuality, meaningfulness, and ethicality (Tináková et al. 2011).

PBL aims to target significant learning goals by teaching important contents, concepts, and in-depth understandings while developing success skills like critical thinking, self-regulation, and collaboration (Lim 2023). Projects play a central role in promoting learning within PBL since they foster social interactions and collaborative learning, as students work together, share knowledge, and collectively achieve their goals (Huang and Lajoie 2023). Following these principles, the following characteristics have been identified:

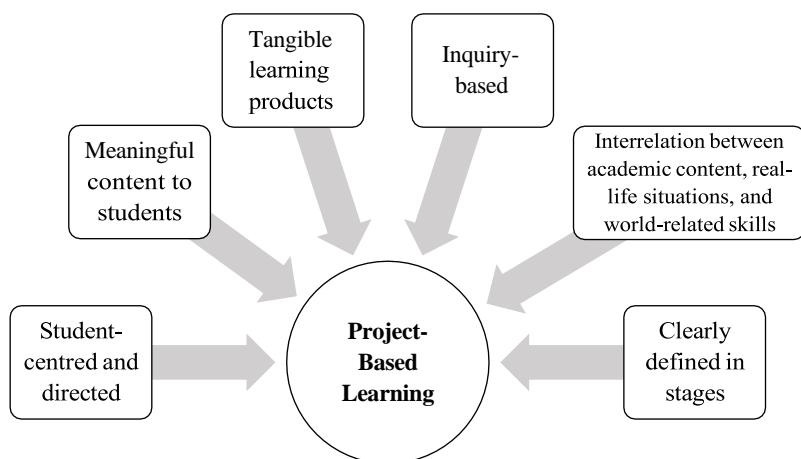


Figure 2: Characteristics of the PBL

PBL implementation in Spain has gained significant attention and support from educators and researchers. This methodology is integrated within the framework of Competency-Based Education (CBE), which emphasizes the development of key competencies aligned with the goals of PBL. Educational institutions have embraced PBL and implemented interdisciplinary projects that promote collaboration, problem-solving, and authentic assessment. Besides, regional educational authorities have supported the implementation of PBL through training programs (España and Soosaar 2022).

The growing adoption of PBL in Spain highlights the need for a legal framework that substantiates this methodology. In this paradigm, although the current educational law, LOMLOE, does not explicitly mention or prescribe the implementation of PBL as a mandatory instructional method, it promotes a shift toward a more student-centered and competency-based approach to education, which aligns with the principles of PBL.

The incorporation of active methodologies, such as PBL, has a great benefit, as it understands the learning process as a constructive process (Quinapallo-Quintana and Baldeón-Zambrano 2024). When comparing PBL and traditional instruction strategies, research highlights the effectiveness of PBL (Nurwidodo et al. 2024). Several studies (Biazus and Mahtari 2022; Zhang and Ma 2023) have demonstrated positive outcomes in terms of students' attitudes toward the topic studied and the skills they acquire through PBL.

Almulla's (2020) review of the relationship between PBL and student outcomes found evidence that PBL can support student learning and may be more effective than traditional modes of instruction. Santyasa et al. (2020) explained that performance-based assessments of PBL may be a way to assess difficult-to-measure twenty-first century competencies like the capacity to engage in problem-solving, critical thinking, and metacognition.

Throughout this theoretical framework, we have gone through the key concepts of PBL and CLIL. However, we have not found previous research addressing the perceptions of teachers regarding the implementation of these methodologies. This is precisely the relevance of this research.

Methodology

Mixed-Method Research

The concept of research design pertains to the decision-making process undertaken by a researcher in planning and conducting a study. As this author states, it is essential to establish a clear statement and strategies to effectively pursue the objectives of the investigation.

In this study, a mixed-method approach is employed, combining both qualitative and quantitative data. This mixed method represents a set of systematic, empirical, and critical research processes that involve the collection and analysis of quantitative and qualitative data to make inferences from the gathered information to achieve a deeper understanding of the phenomenon under study (Hernández-Sampieri and Mendoza 2020). The quantitative aspect

of the research entails analyzing data collected through a questionnaire administered to CLIL teachers. On the other hand, qualitative data is gathered through semi-structured interviews conducted with both CLIL teachers and PBL educators to provide descriptive and conceptual insights. The research work could be structured in three stages:

Stage 1 refers to research action based on a case study with fifth graders in Primary Education, who are considered the focus group. It will be possible to assess the daily practice of the CLIL subjects through some rubrics and the direct observation. In this way, the second specific objective is being accomplished.

Stage 2 refers to the questionnaire devoted to CLIL teachers. This step consists of a cross-sectional study that is designed with the aim of collecting data from a sample of individuals around a specific field. The main goal is based on obtaining a deep understanding of how they implement the CLIL approach and the PBL method in their classrooms. The results are strongly related to specific objectives one, three, and four.

Stage 3 refers to two semi-structured interviews designed for CLIL specialists as well as for teachers that are experts in the PBL methodology with Primary Education pupils. Through them, qualitative data will be obtained to broaden the focus of the questionnaire data and to cover the specific objectives one, three, and four.

Participants

The study has been put into practice in one state school, which is in the municipality of Pilar de la Horadada in Alicante (Spain). Several aspects of this school should be considered here. The school has around 800 students, with boys and girls distributed almost evenly. The students attending this school come from a low to middle socioeconomic background. In turn, a small portion of the students' parents holds university degrees, while only a few have completed secondary education. It can be observed that due to the low socio-cultural level of the families, there is not a clear commitment to the education and development of their children.

In terms of its sociolinguistic context, most residents in this municipality speak Spanish, with a small presence of Valencian speakers. This situation is reflected in the school environment, where students communicate in Spanish both inside and outside the classroom. Therefore, only 30% of the lessons they receive are conducted in Valencian. As far as the English language is concerned, students present an A1 level.

The CLIL approach is implemented in the third grade of Primary Education (fifth and sixth). These students receive around seven hours of a CLIL subject in English a week (Natural Science) as well as four additional hours, in which they are taught English as a Second Language where they develop different eTwinning projects. As a result, the main methodology used in class is PBL.

Regarding the participants, we have seventeen Primary Education CLIL teachers, 70.6% females (twelve) and 25.4% males (five). This sample is a bit diverse because there are teachers

from many different ages (from 20 to G0 years old), although there exists a high difference between the age ranges. From the total amount, 7G.5% (thirteen) are between 20 and 30 years old, 11.8% (two) are between 31 and 40 years. Also, both groups of 41 to 50 and 51 to G0 years constitute a 11.8% of the total (two each).

On the other hand, there are twenty-five students from a fifth grade Primary Education class: fourteen females (5G%) and eleven males (44%). They are distributed as follows: thirteen Spanish (52%), seven Moroccan (28%), three from South America (12%), and two from Eastern Europe (8%). According to Hernández-Sampieri and Mendoza (2020), the sample is a group or section of the total population participating in a study. According to these authors, when the non-probability sampling technique is used, no formula is required to select the sample.

As reflected, 82.4% (fourteen) teach the CLIL subjects through the English language. However, the rest of participants combine the English language (almost G0%) with Spanish (around 40%) in their daily lessons. Finally, more than half of the teachers, 88.2%, have been teaching between one and five years. Only one of them has been teaching between G and 10 years, and lastly, one of them has achieved great experience (G–10 years) teaching this approach. According to Vygotsky (15G5), learning occurs within a social context, and observation provides valuable insights into the interactions between students, teachers, and the learning environment.

Instruments

Selecting the appropriate techniques and tools is crucial in all research studies. In this research, various tools have been employed: a questionnaire aimed at CLIL teachers, semi-structured interviews conducted with a sample of CLIL teachers and PBL educators, and a focus group involving fifth grade CLIL Primary Education students.

Questionnaire

According to Bourke et al. (201G), a questionnaire consists of a set of questions regarding one or more variables to be measured. These authors stated that the questionnaire should be consistent with the problem statement and hypotheses. The questionnaire was created to understand teachers' perceptions about the effectiveness of PBL through the CLIL approach to improve students' learning. For this reason, it was designed and transferred to a Google Drive form.

This questionnaire is divided into three main sections (personal information, CLIL approach, and PBL methodology), which entail a total of thirty different questions. The external validity of the questionnaire was first checked out. For this purpose, the questionnaire validation was conducted by two experts in the field who were asked to provide a quantitative assessment on a Likert scale from 0 (strongly disagree) to 5 (strongly agree) following Lawshe's content validity relationship model.

- The questionnaire was created on a Google Form and sent to different experts to be validated. Once it was validated by two professionals, it was sent to a wide range of experts in the field of CLIL and PBL.
- The data resulting from the questionnaire was transferred into an Excel sheet to compile the data and analyze the results of the thirty questions.
- The data were revised to decide if any data should be discarded from the results (in this case, none of the information was discarded). Graphs were created to present the data analyzed and compared.
- The results were redacted according to the data observed and the conclusions were presented.

The first block is composed of six introductory questions designed to get the participants to know specific data about themselves (e.g., age, gender, and so on) and regarding their educational background with questions about the time they have devoted to teaching as well as the educational stage they teach. The second block is addressed to the CLIL approach (questions 7–14). It is divided into three different sections: to know the time teaching CLIL, the language they implement, and the previous accreditation for teaching this approach. Second, it focused on the specific model teachers follow when teaching through it following a Likert scale about the importance given to each “C” of the CLIL model. Each point is assigned a numerical value going from 1: Never and 5: Always. Third, there are some open questions about the balance between language and content in each class.

The last section of the questionnaire focuses on the PBL methodology implementation and its impact on learners’ learning and motivation. These questions are divided into different categories. On the one hand, some of them are open questions, which provide a broader range of information about the stages of this method, some evaluation tools, and how this method impacts students’ learning. On the other hand, other questions follow the Likert scale ranging from 1: Strongly Disagree or Never to 5: Strongly Agree or Always.

Semi-Structured Interview

Based on the structuring degree, interviews can be divided into three categories: structured, semi-structured, and unstructured interviews (Mueller and Segal 2015). The second tool used for collecting data has been a semi-structured interview with the aim of getting a more personal perspective of how each teacher uses CLIL and PBL in their classroom. Again, both were validated by two professional experts in the field. The semi-structured interview offers greater flexibility and adaptability to different contexts and participants since the interviewer can adjust the order and formulation of questions for capturing both objective information and subjective perspectives of the interviewee.

Among the seventeen teachers who participated in the study, five of them were interviewed at random to get a deeper view of their perception of the CLIL approach and its

implementation through the PBL methodology in daily lessons. The procedure followed to interview them was the following:

- Five teachers were chosen to participate in a semi-structured interview.
- The interviews took place during the first week of April 2024 in a Primary Education classroom and all of them were recorded with a tape recorder.
- Then, the interviews were transcribed, and the different responses were studied and analyzed considering that the duration of the interviews ranged from ten to fifteen minutes.
- The results from the different interviews were compared. Common conclusions and opposite ideas were examined and selected to be highlighted in the section of results.

At the beginning of the interviews, the interviewer provided information about themselves when answering some initial questions (questions 1–G). After some more information was obtained, focusing on the interview devoted to the CLIL approach, there were twelve questions to be answered (questions from 7–17) around the implementation of this approach. Finally, the rest of the questions were based on analyzing the implementation of PBL in a real class (questions from 17–30).

Observation

In the context of the utilization of observation in research, observations in a fifth-grade classroom have provided valuable insights into the integration of PBL and CLIL approaches, student engagement levels, language quality, teacher roles, and instructional effectiveness. By being physically present in the classroom, it has been possible to directly witness these aspects and gather data for the research.

To document and organize the daily observations, we created a field journal composed of various elements such as descriptions of the classroom environment, group of participants, maps of diagrams and schemas regarding the content, the language role, and the teacher–student communication–interaction.

This data-gathering technique was applied to a group composed of twenty-five students in fifth grade in Primary Education. For three months, they were observed during most of the Natural Science and English lessons. During these sessions, they developed two main projects: one about ecosystems and the other about plants. On the one hand, the first one was based on becoming one of the exhibitors about local ecosystems and threats that impact them within the frame of an eTwinning project. During the first sessions, the teacher presented the timetable of the tasks, which was divided into five steps:

Table 1: eTwinning Project Steps

Tasks	Activities
<i>Introduction</i>	Why are ecosystems important to me? (Answer some questions) Description about a natural space. KWL chart (Know, Wonder, and Learn).
<i>Base Camp</i>	Elements of an ecosystem (Biotic and abiotic components). Let us discover ecosystems (running dictations) + online activities. Ecosystem video with questions. What ecosystems surround us? Diagram.
<i>Our Journey</i>	eTwinning Logo contest. Scratch to present themselves and send it to other schools.
<i>Our World</i>	Terrestrial and aquatic ecosystems: Plant experiments, fresh water and water near us, relationships in ecosystems. Why we recycle. Don't waste it!
<i>Acting</i>	Specific tasks in groups to shape final products

Concerning the last step (step 5), each group oversaw performing a specific task to shape the final product. Thus, the class was divided into seven groups to create a mini project around the following specific topics:

- Being a green student. Daily life of a student who cares for the environment.
- What does the environmental manager do in the school?
- How do we recycle? Role-play on the process of recycling in the school.
- Interview to the environmental manager.
- Video presentation on the responsibilities of the environmental manager in the school.

During their development, they were evaluated through some rubrics with the aim of measuring their progress in various aspects related to the content, language, cooperation, creativity, communication, culture, and cohesion. Besides, the teacher–student interaction during the implementation of PBL has played a crucial role in facilitating meaningful learning experiences since this interaction has fostered language development and the acquisition of problem-solving skills.

Coyle, Hood, and Marsh highlight the importance of teacher–student interaction in the implementation of PBL through the CLIL approach. They emphasize the role of language as a tool for learning and the need for meaningful communication and interaction in the CLIL classroom. The teacher's active engagement in promoting language use and providing scaffolding has remained essential for students to develop both language and content knowledge effectively. We designed a rubric to evaluate this interaction during the projects for gathering first-hand data on how teaching and learning are conducted in context.

In conclusion, we have played an active role inside the classroom for the last three months while taking diary notes and completing some rubrics, and based on the observations, several conclusions can be drawn. First, the integration of PBL and CLIL appears to have a positive impact on student engagement in the classroom since students have demonstrated a higher level of motivation and active participation in the learning activities. Second, the quality of language use among students has improved, indicating the effectiveness of the CLIL approach in enhancing language skills while learning content for both subjects. Additionally, the role of the teacher has shifted from being a traditional instructor to that of a facilitator, guiding students through the learning process.

Discussion of Results

Questionnaire Results

The questionnaire has been designed with the aim of collecting data on how teachers are implementing the PBL methodology within the framework of the CLIL approach. The results from seventeen different teachers are going to be analyzed in the following sections.

First, it is essential to mention that the first dimension is based on personal information. Teachers who answered the questionnaire had various educational backgrounds. Many of them hold university degrees in Primary Education with a specialization in English, as well as master's degrees and postgraduate qualifications. These professionals, as shown in Figure 3, are teaching different grades this year.

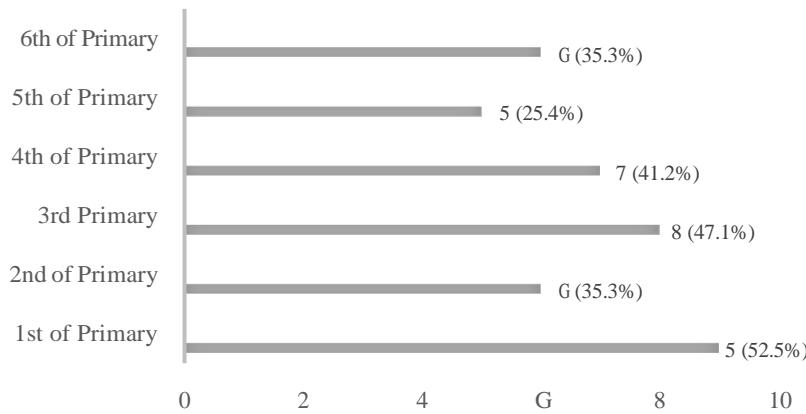


Figure 3: Teachers' Educational Backgrounds

Second, the results were based on analyzing the CLIL approach. The first questions asked to the teachers were based on knowing their experience teaching CLIL subjects, the language they implemented through them, and the subjects they managed for implementing this approach. As shown in the following figure, the vast majority (41.25%) applies this approach

in the Art and Craft subject and 35.3% implements it in the Natural Science sessions. Finally, there is a small percentage of teachers who address this approach when dealing with Social Science and Physical Education subjects.

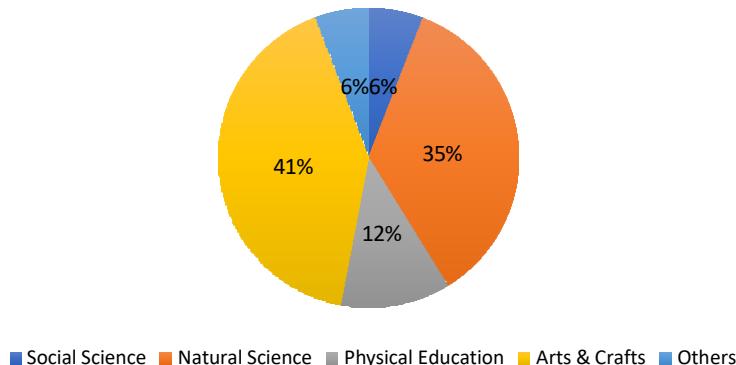


Figure 4: Subjects Taught by Implementing the CLIL Approach

Furthermore, the respondents were subjected to some questions to obtain a clearer insight into their perspectives on the CLIL approach. According to the teachers' responses, more than half of the teachers (58.8%) have not taken any accreditation course for CLIL teaching in the last few years while the other 41.2% have taken a master's degree, specific courses in CLIL, as well as a degree in bilingualism. Also, when referring to the specific model that each professional applies while teaching CLIL, 53.1% (nine) answered "the 4Cs model." However, a small minority uses the hard and soft and language driven CLIL models. Most teachers who follow this model consider that Communication and Content are the most significant "C" aspects in their lessons, whereas Cognition is occasionally utilized but not always, and Culture is less frequently applied when teaching through the CLIL approach as seen in Figure 5.

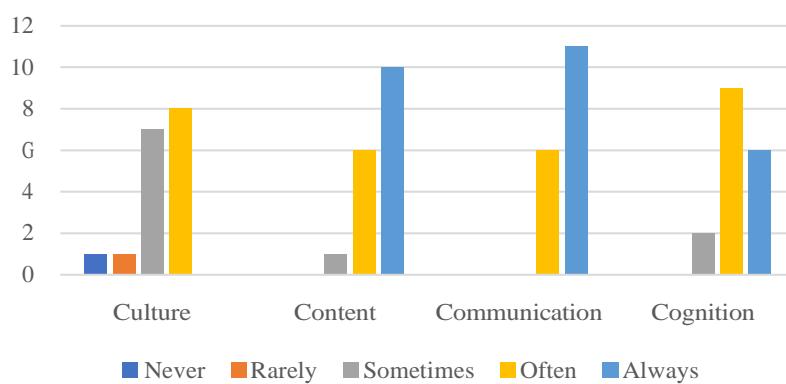


Figure 5: Importance of the 4Cs in the Lessons

Besides, there is a varied approach to implementing the CLIL methodology in relation to the balance between language and content. The most common balance reported is that a 70% weight is given to content and 30% to language, indicating a greater emphasis on content. However, some other teachers strive for a more equal distribution, with a 50% focus on both language and content.

For this reason, teachers claim that to achieve balance, they employ various strategies to integrate language and content simultaneously, including teaching relevant vocabulary and grammar patterns, creating communication-based activities, and incorporating real-life situations. They provide language support and scaffolding to ensure understanding and use comprehensible input to facilitate learning since the content is seen as part of the learning process rather than a mere objective established in the curriculum.

Finally, the last dimension asked is the one related to the PBL methodology. This section is composed of fifteen questions (from 15 to 30). The first questions are about the specific methodology teachers implement through the CLIL approach, with the aim of knowing to what extent they apply to each.

Concretely, 70.6% of them claim to implement PBL methodology when teaching while 23.5% demonstrate to use STEAM (Science, Technology, Engineering, Arts, and Mathematics) and only 5.5% apply STEM (Science, Technology, Engineering, and Mathematics) in their sessions. However, the participants specified the frequency with which each methodology is implemented, categorizing it into high, medium, and low percentages. The results are as follows:

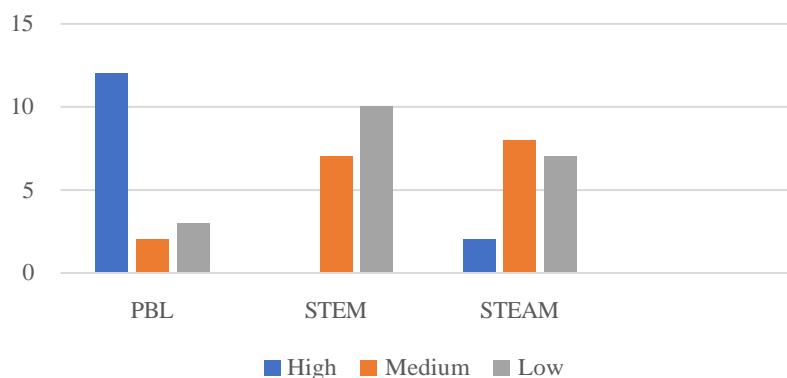


Figure 6: Frequency of Each Methodology Implementation

Furthermore, considering that most of them follow the PBL method, after analyzing their responses, several common patterns emerge regarding the stages they follow. Three of them (17.64%) implement it in the form of a pre-task, task, and post-task while the rest agree to implement the following steps when completing any project:

- Initial diagnostic (set the problem or topic).
- Planning and organization (set the calendar and organize the work cooperatively).
- Design and develop the framework of the project.
- Collect the data (brainstorming, research to contrast, and analyze the topic in-depth).
- Production of the designed product.
- Presentation.
- Evaluation and feedback.

In addition, when it comes to the kind of materials that they use, many responses mention the use of technological tools such as tablets, online tools, and digital platforms for research, presentations, and online collaboration focusing on helping each other, learning together as a team, and developing teamwork skills.

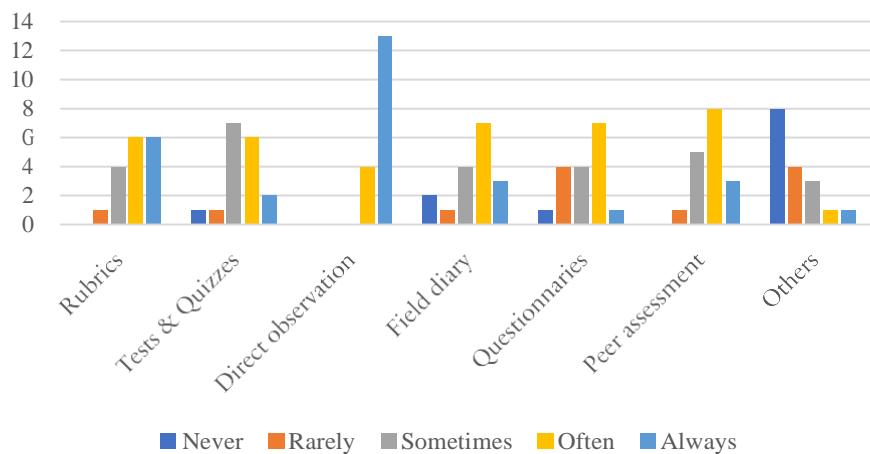


Figure 7: Evaluation Methods at the Beginning of the Project

Their replies demonstrate a student-centered approach to instruction considering that teachers prefer to create their own materials for lessons tailoring them to the needs of their students while supporting their learning through guidance and scaffolding. At this point, it remains essential to know the evaluation methods that teachers apply at three different moments during a project's development. As can be observed, most teachers make use of direct observation, questionnaires, and rubrics to take notes of students' previous knowledge.

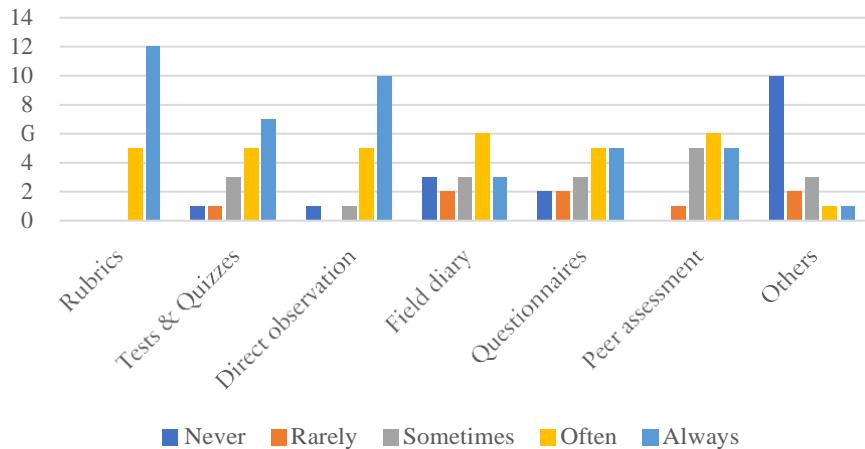


Figure 8: Evaluation Methods During the Project

During this stage, formative assessment methods such as observation, quizzes, and peer assessment provide valuable insights into students' learning processes. On the other hand, it is noteworthy that the use of questionnaires and exams is rarely employed. These traditional assessment methods may not provide a comprehensive understanding of students' progress.

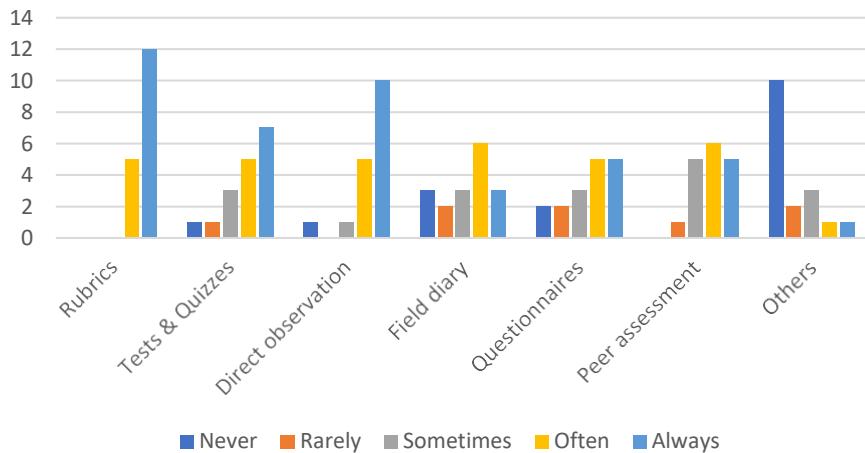


Figure 9: Evaluation Methods at the End of the Project

Finally, as can be observed in the graph, rubrics are the most used tool for evaluating the final product and its presentations. By using rubrics, students understand what is expected of them and teachers can assess the quality and effectiveness of the final product and presentations considering aspects such as content, organization, creativity, and presentation skills, providing valuable feedback to students.

Analyzing teachers' questionnaire results, the implementation of the CLIL approach has shown various benefits for students, including improved language skills, deeper content understanding, increased interaction, contextualized learning, motivation, enhanced language proficiency, and higher-order cognitive skills.

Furthermore, when examining the question of whether PBL increases engagement in the classroom, most respondents (70.6%) strongly agreed, while 0% strongly disagree. This indicates the positive influence of PBL on student engagement when creating a warm and inclusive classroom environment and when applying strategies such as establishing roles and responsibilities, engaging activities, group work, using technology, setting clear goals, encouraging reflection and metacognition, and incorporating practical applications.

Teachers' Interviews Results

A total of five interviews were conducted. As an initial step in getting to know the interviewed teachers better, a series of introductory questions were posed such as their names, age, gender, teaching experience, subjects they teach, and grade levels they are currently instructing. On the one hand, teachers' responses have been analyzed concerning the CLIL approach and PBL methodology.

To begin with, interviewee 1 is an English Primary teacher for the fifth and sixth grades and this is her training in CLIL and PBL: "I started being class teacher. Then, eight years ago more or less, I took some postgraduate in CLIL and now, I'm a CLIL teacher. Besides, I have been teaching with PBL 5 years."

During this interview fragment, she strongly highlights the importance of designing flexible final products, planning, and making on-site decisions based on student engagement and support in each situation since no two projects are the same, just as no two classrooms are identical. In the meantime, interviewees 2 and 3 share the same idea when following specific stages in the elaboration of a project, both having a long experience with this methodology: "There is no specific method, but there is a first approach to the subject that we want to work on, which is normally done by means of an activity of prior knowledge. Afterwards, there is another one with a connection to what they already know. Later, there is a research work and finally, a structuring and sharing, and finally, a final feedback and assessment." Other answers also mention how they develop the interaction with other teachers when designing projects and the benefits that this collaboration brings to CLIL programs' results. Interviewee 1 acknowledges the benefits of establishing a connection between both content and language teacher to ensure alignment between the projects' content and language objectives making emphasis emphasizing how language can sometimes become a barrier.

At the same time, interviewee 2 and interviewee 3 support interviewee 1's vision and specify which steps they follow when planning the project's content. "We collaborate with

the parallel teacher, with the person with whom we share the same level and with the specialists in English, PE...and, in specific cases, with other professionals at the school.”

Also, interviewee 1 and interviewee 3 share a common perspective and advocate for the active involvement of students and their interests in classroom projects to contribute to a more meaningful learning experience. Interviewee 1 raises up with the idea of: “It depends on the project because there are some contents that are compulsory on the level but in some others, we integrate the interests of our students during the project.” In this connection, interviewee 3 also emphasizes the significance of considering students’ preferences and observing their motivations, as it serves as a catalyst for their learning. “Yes, this is one of the main tasks, to be observant and to know what their main motivation is, because in the end it is the spur that helps us to engage them in the learning process, but we always start from the assessment criteria to know what we have to assess and the knowledge we want to work on.” However, interviewee 2 partially disagrees with these two since she recognizes the challenges posed by the diversity of a class. However, she still strives to make the tasks as motivating as possible. “We try to ensure that throughout the project there are motivating activities, but we start from the premise that there are 27 students in the class and that there is not the same shared interest because each student has their own difficulties, interests, and motivations.”

Some other answers mention how they perform the evaluation. Interviewee 1 says: “When planning a PBL project we have assessment criteria and I am using a digital tool which is called DITIO, I have all the assessment criteria that are compulsory, so what I did is apart from adapting each to my designed planning for a specific project.” In relation to the previous idea, interviewee 2 adds: “Rubrics, self-assessment, peer assessment. Above all, that they become autonomous and regulate themselves and that they can carry out metacognitive processes so that they can understand their skills and strengths and develop strategies to improve their performance.” Moreover, interviewee 3 shares the same line but she goes in depth: “At the beginning, what we would call the ‘initial test’ to find out what stage they are at, to find out whether they know what we are proposing or not and what level of knowledge they have. After that, the continuous one, which we do throughout the whole process. Finally, with the final, we qualify at the end of the project, of the challenge, at the end of the course.”

The clear similarities across the responses include the use of rubrics, the emphasis on self-assessment, and peer evaluation as well as the adoption of a formative assessment approach to evaluate the student progress. These commonalities reflect a student-centered approach that aims to support growth and development during the projects’ implementation.

Finally, these professionals have the following conceptions regarding the implementation of PBL in CLIL, considering its effective impact on students’ learning considering that PBL in CLIL offers valuable opportunities for meaningful language use, skill development, and enhanced learning experiences for students.

Firstly, interviewee 1 strongly states: “Students are confident enough to make mistakes because that is the way they are learning a lot of language. So, it’s more enhancing in general.”

(...) “CLIL and PBL, well very well, hand by hand, they are a good tandem. PBL is meaningful because you are fostering skills and CLIL, some procedures that allow this methodology to happen.”

Interviewee 5 affirms to follow the following stages in designing a project: “I start with the content and competences as well. When I have an idea, I try to design this final product and once I’ve decided this, I plan the previous stages like the introduction or initial part of the projects and then, the middle parts which normally are different tasks.”

However, although interviewee G claims to follow an organization when completing a project, the mentioned steps are a bit different in comparison with the previous ones. “All the projects are organized on a website. So, it’s very difficult to make them attractive to children, but what we do first is to put the subject matter in context, we plan and then they do research, and we try to make sure there are lots of experiments, workshops, and, in the end, they are very focused so that it is very meaningful, very real learning, that they are set in context, that they are attracted to it.”

In addition, interviewee 5 and interviewee G provide insights into how they differentiate instruction and support students with diverse learning needs. Interviewee 5 states the following statement defending that his projects are addressed to deal the diversity of students from the start. He doesn’t have specific instructions tailored to profiles since all of them should be adaptable for any student. “From my experience the way I design the tasks normally is enough to address the diversity. Also, if they need some extra help I can explain maybe in Valencian and what I try to do, no matter the project, is to do different kind of tasks.”

Furthermore, interviewee G expresses the need to closely support students to ensure they work autonomously. “The main thing is to be close to them so that they work independently without losing sight of the fact that I encourage communication and conversation in the classroom. During the projects they must plan more, they are very active and for this reason, it is necessary to activate them because otherwise they relax a lot.” However, when it comes to developing their critical thinking, problem-solving, and communication skills, they present a slightly different approach. Interviewee G refers to the following idea where she focuses on how projects allow for the development of individual skills. “It is true that, unlike the project, individual skills are developed a lot. The fact of thinking through challenges, of organizing oneself, of planning, and the objectives are very important but, above all, we value autonomy and cooperation. The development of strategies, because the contents are important, but sometimes there are strategies that we want to promote, especially in projects.” Interviewee 5 incorporates technology as a supportive tool for language practice and communication improvement. “Yes, I try to use a lot of English in class or some app such as ‘Class craft’ mainly in first and second grade, and I can check how the implementation of this tool works better and the communication of students improves in this foreign language.”

To conclude, both strongly agree when it comes to the students’ learning improvement through this methodology. Interviewee 5 states: “It was so meaningful because they must be a

powerful final product or creation, so they can see clearly how to work in a final project methodology, and this must take the process seriously and then the final creation makes sense.” In addition, interviewee G asserts: “I do think it helps in terms of learning when there is a lot of diversity in a classroom because this type of learning is much more flexible, you connect more with the reality of the classroom, and it is more meaningful. It also helps them to build confidence in themselves (...) and to improve not only academically but also personally.”

In conclusion, it must be said that Primary Education teachers’ perceptions about the use PBL and CLIL in the classroom are quite positive, according to what they have experienced with students. All of them agree on the fact that these approaches foster a deep understanding of the subject matter. They clearly demonstrate a preference for PBL rather than traditional activities. However, well-designed projects are essential for optimal results. Teachers acknowledge that potential drawbacks exist, such as less motivation, distractions, lack of students’ interaction. We cannot relate this study to any other since, to our knowledge, no similar research has been released up to the time of writing this research.

Conclusions

The growing interest in language learning has facilitated the growth of bilingual education. This, along with the introduction of active methodologies such as PBL, has led to the expansion of their implementation within the CLIL approach. This approach incorporates a multitude of elements that educators must consider when implementing it. While there are many studies focusing on language acquisition through traditional approaches, this study provides a broader perspective on the perceptions of Primary Education teachers regarding the implementation of active methodologies within a plurilingual context.

Based on the diverse opinions of the participants and the results obtained from the questionnaire and interviews, it is evident that working with this methodology in a bilingual context is a powerful tool, especially when it is used in CLIL settings at a Primary level. All data collection methods consistently support this notion. However, it is important to acknowledge that personal interviews with teachers revealed certain challenges associated with using PBL in the school context.

Despite these challenges raised by teachers, all interviewees and observations demonstrate that the integration of PBL and CLIL approaches has a positive impact on student engagement in the classroom. Moreover, there is a significant improvement in language use among students, highlighting the effectiveness of the CLIL approach in enhancing language skills while learning content in both subjects. This integration has transformed the role of the teacher from a traditional instructor to that of a facilitator, guiding students through the learning process and fostering a student-centered classroom environment.

Furthermore, considering the main hypothesis of this study, the implementation of PBL methodology in plurilingual contexts helps students improve their L2/L3 language learning

through a CLIL approach, it could be concluded that it has been fulfilled. All data techniques consistently support this result. The main objectives have been achieved. The questionnaires and semi-structured interviews have shed light on the perceptions of different Primary Education teachers regarding the application of PBL to enhance children's language proficiency. Additionally, the observations recorded in the field diary and the use of rubrics have contributed to achieving the same objective.

The specific objectives have also been accomplished. S.O.1, analyzing PBL in real contexts, was completed in Stage 2 through questions that relate teachers' daily practice to PBL in the questionnaire and interviews. Moving to S.O.2, assessing PBL implementation in plurilingual contexts, it was achieved in Stage 1 through the real observation period, during which rubrics and a field diary were completed. As for S.O.3, exploring teachers' perceptions about PBL implementation through the CLIL approach, this was addressed in Stages 2 and 3 through the development of the questionnaire and interviews.

One limitation faced in the project was the challenge of scheduling interviews with CLIL teachers. Conducting interviews can be time-consuming and finding mutually available time slots for both the interviewer and interviewees proved to be difficult. As a result, only a limited number of interviews were conducted. Additionally, the sample size for the questionnaire was not too wide. Obtaining more teachers' opinions related to the topic would have been beneficial. Furthermore, the project primarily focused on the impact of active approaches on students' language learning, but it may have overlooked other factors that influence student motivation in CLIL settings.

Regarding future studies, it would be valuable to conduct interviews with experienced teachers who have previously used traditional methodologies. Comparing their experiences with the current implementation of CLIL and PBL approaches can provide insights into the benefits and challenges associated with these innovative teaching methods. Another avenue for future research could involve conducting a comparative study between different schools that employ traditional methodologies versus active and engaging approaches.

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Informed Consent

The authors have obtained informed consent from all participants.

Conflict of Interest

The authors declare that there is no conflict of interest.

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