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Implementing PBL and CLIL in an Early Childhood classroom in the United States

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ABSTRACT

As the technology develops, the world is becoming more and more interconnected. With this interconnection, communication needs are also changing, with an emphasis being placed on the development of bilingual or multilingual abilities worldwide. In the Americas (North, Central, and South), the emphasis is placed more on two specific languages, English and Spanish, which are the two most prominent languages in the western hemisphere. In order to embrace and adapt to this shift, and to prepare future generations for these communication needs, the methodologies of teaching must be adapted as well. This means we must leave traditional methods of teaching and move into more modern methods of teaching, such as CLIL and PBL, which are the main focuses of this dissertation.

That is why this paper outlines a proposed intervention that is designed to meet the demands of this changing teaching landscape. The intervention targets a preschool classroom where the students engage in a meaningful project with the aim of improving bilingual language abilities while simultaneously learning new content. The proposal, created with a practical point of view, outlines 8 specific sessions to be done sequentially. Together they combine to wholly expand students' different areas of development.

Furthermore, it is the compatibility and combination of both CLIL and PBL that drives the proposed intervention. Combining the vital components of CLIL (such as the 4Cs Framework with the scaffolding guidance of a meaningful project) and PBL is what forges the difference from traditional teaching techniques that involve less critical thinking. Proposals like this are designed to be a starting point for a new roadmap in the long-term acquisition of bilingual education.

Finally, we consider that this intervention proposal could be applied in early primary grades (kindergarten, first grade) around other topics present in their curriculum.

Key words: Content and Language Integrated Learning (CLIL), Project Based Learning (PBL), Early Childhood, United States.

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1. INTRODUCTION

This Master's dissertation combines a CLIL approach with Project Based Learning methodology in a preschool classroom in the United States. These concepts will be examined both individually and together, systematically detailing the history and uses, afterward a comprehensive intervention proposal will be laid out. The main concept is to justify the use and provide clear directions for the implementation of CLIL and Project Based Learning methodologies in a preschool classroom in the United States.

In the first section, the decision and justification of the topic of this dissertation will be explained, accompanying it with a brief analysis of the "state of the art" and the main aims considered in this work, finishing with the methodology we will use to achieve our strategic objectives.

The second section in this dissertation is the literature review, where we will firstly review Project Based Learning (PBL from now on), and its associated characteristics as well as its use in Early Childhood and in the United States. Secondly, we will focus on CLIL and its main characteristics, as well as its implementation in Early Childhood and in the United States. Finally, we will review how CLIL and PBL can work together in a preschool classroom.

The subsequent section is the intervention proposal. We will start by mentioning the objectives of the intervention, analyzing the context and the characteristics of the target group next, the timing and methodology, followed by the sessions and finally the assessment.

Lastly, we will give some conclusions about the intervention proposed. We will finish by commenting on the limitations and the possibility of further research.

1.1. Justification

In the last decades, a central issue in the United States has been an increase in the number of English Language Learners in the schools across the country. According to the National Center for Education Statistics (NCES), the percentage of students who were ELLs in 2016 was higher in lower grades (Pre-k through 2nd grade) than the percentage of ones in upper grades. Furthermore, over three-quarters of these

ELL students have Spanish as their first language (U.S. Department of Education, National Center for Education Statistics, Common Core of Data, 2000-01/2016-17). Due to this growing need that is at a stage that is pivotal in a child's learning, this situation requires taking a closer look at the steps taken in order to develop the students' second language (English) during these Early Childhood stages.

In order to take care of this growing need, the United States has developed several bilingual models throughout the years, though they are not equal in the outcome. According to Gandara and Escamiila (2017), some of these models have been labeled as "subtractive", such as the ones that intend to teach English but do not maintain the students first language (Transitional Bilingual models, submersion), while some of the models have been considered "additive" because their goal is to develop bilingualism and biliteracy (Dual Language programs).

Meanwhile, in other parts of the world the use of the CLIL approach (where content is taught through a second language) has been increasing in the last few years. According to Perez-Cañado (2011), several studies have been carried out throughout Europe, which proves that CLIL positively affects second language learning outcomes.

On the other hand, PBL, where students acquire a more meaningful and deeper knowledge through exploring real-world problems and topics. This type of pedagogy has been proven as an important methodology when implementing CLIL in the classroom.

Currently, the United States has been utilizing several bilingual models (some of which have been described previously), though, to the best of our knowledge, no studies have been made considering a combination of CLIL and PBL in a preschool classroom in the United States, which is the focus of our study. Due to the way preschool is conducted, all the areas of development (language, math, gross motor skills, social-emotional, etc.) are integrated. So it makes sense to integrate content and language as well. As is hypothesized through this dissertation, CLIL and PBL can have improved outcomes and should be considered a viable choice when addressing the growing ELL population in Early Childhood Education in the United States.

1.2. Brief analysis of the state of the art

PBL has been an educational methodology used in different contexts, with different subjects, and with students of all ages. Although Dewey (1897) was the first author to state that students should learn "by doing", more recently several authors like Mills and Treagust (2003) or Thomas (2000) have studied on the topic. Through analyzing the benefits of PBL, these authors have found it to enhance students' meaningful learning through facilitating a methodology that promotes critical thinking and problem solving. Additionally, one of the main assets of this methodology is that it helps students by preparing them for the 21st century, (Bell 2010).

Moreover, in order to understand how to use and implement this approach, we need to dive into the characteristics of this methodology, something we will do thanks to the studies of authors such as Donnelly and Fitzmaurice (2005), Weizman, Shwartz and Fortus (2008), Malik (2012), or (Blumenfeld et al., 1991). In order to fully develop this dissertation we will also focus on how Project Based Learning is approached in Early Childhood, which will be done through the contributions of Helm and Katz (2016).

Furthermore, this study is not only based on PBL but it also focuses on CLIL. CLIL is an approach where content and language are integrated; this means that different subjects are taught through a foreign language. We will review some of its main characteristics through the literature from different authors such as Coyle (2008) with her 4C's Framework, the language triptych proposed by Coyle, Hood, and Marsh (2010), and the different types of language proficiency proposed by Cummins (1979).

Lastly, this intervention proposal is specifically designed for a preschool classroom in the United States, which is why we will do a short review on the history of the bilingual programs in this country and its nuances, citing its main characteristics and accompanied by authors as Roberts (1995), Cummins (1981) or Stewner-Manzanares (1988).

1.3. Objectives

The objective of this dissertation is to design an intervention proposal for early childhood students that provide them with an engaging and authentic way of learning a second language through PBL using the CLIL approach. This intervention proposal is designed for preschool students attending a school with a Transitional Bilingual Program, since these students are living in a country (U.S.) where the majority language (English) is different from their home language (Spanish).

In order to achieve this objective, other supporting objectives will also be considered:
- Analyze the characteristics of PBL and CLIL and its use in Early Childhood classrooms.
- Investigate the current situation of the bilingual education in the United States.
- Explore how PBL and CLIL can be used in a preschool classroom and how they are connected to each other.
- Suggesting ideas to improve students' knowledge about the topic chosen for the project, additionally enhancing their communication skills and vocabulary in the second language.

2. LITERATURE REVIEW

In order to develop the experimental proposal, we have to create a theoretical framework about PBL first introducing a definition of the concept, and expanding that into considerations of how this type of pedagogy is adopted in early childhood classrooms and in the United States. Then we will continue moving downstream, targeting the CLIL approach, its characteristics, how this approach is implemented with young students, and finally what is the use of this approach in the United States. These sections will lay the foundation for a conceptual understanding of how they break down into more specific focuses, becoming more focused in each subsection.

2.1. PROJECT BASED LEARNING

In this section, we will start by defining the concept of PBL, then expanding and describing some of its main characteristics afterward. We will continue by analyzing how PBL is carried out in an early childhood classroom setting and what the

practices are of this methodology in the United States. All of this will build to provide a more concrete baseline by which to extrapolate further information.

2.1.1. Definition of the concept

PBL is a type of pedagogy based on "learning by doing". Dewey (1897) was one of the first authors to express a methodological concept for teaching around projects and served as a catalyst for the growth of this ideology.

According to Blumenfeld, Soloway, Marx, Krajcik, Guzdial, and Palincsar (1991, p.369) "Project-based learning is a comprehensive approach to classroom teaching and learning that is designed to engage students in the investigation of authentic problems". It is designed around creating a learning environment through the use of specific and focused projects.

Hallermann, Larner and Mergendoller, (2011) state that PBL starts with an initial question (a driving question) followed by research of the proposed topic in order to answer the initial question. This research, which is from the students, is accomplished through the assistance and scaffolding of the adults. It will culminate with some sort of product (craft, play, book, etc.), which will be displayed in order for the students to share what they learned.

2.1.2. Characteristics

There are several characteristics that separate PBL from other types of learning. The first one we will focus on is that it is problem solving focused (De Graaf and Kolmos, 2003). That means that the desired learning outcomes are grouped around problems rather than just being shown as a list of topics. This method allows the students to interact and engage through collaboration via trials and tests of real-world problems, leading them to a more experiential learning atmosphere. The hands-on manipulation and use of sensory input into the learner's journey allows the students to better analyze and critically think. This critical thinking is a key aspect of the problem solving area in PBL.

The next characteristic is that it is learner centered and autonomous-focused (Donnelly and Fitzmaurice, 2005). That means that the students are allowed to creatively solve and theorize in their own ways, while the teacher takes the role of facilitator. This prompts the students to take an active role in their learning, which drives more robust knowledge creation.

Branching off this idea is the characteristic of driving questions. As Weizman, Shwartz and Fortus (2008) state, the teacher assumes the role of facilitator, and it is their job to present a driving question (a question that guides the learner, much the way a compass can guide a traveler). In essence, each learner is on their own path to knowledge and can choose how best they get there, but the compass (the driving questions) helps ensure they stay heading in the right direction. These questions should cause a reflection from the learner; meaning they look inward and review what they have learned thus far to consolidate the new information from data to working knowledge, Malik (2012).

Additionally, the subject matter of PBL has to not only been real world, but it should hold significance to the learner in some sort of cultural or emotional way. This taps into the role that significance has in driving effort and attention. By gleaning personal interest in the topic, the learner is much more likely to engage for longer and deeper. Furthermore, when the project can be shown to have an impact, whether on others or on the learner, it will create additional interest and attention (Blumenfeld et al., 1991).

Lastly, there must be a final deliverable product that is accepted as complete by the facilitator and group. Every project must have a beginning and an end, so that all inquires, investigations, and reflections must culminate with a product. This final product should be able to be displayed and shared, not only to ensure the finalization of the work but also to celebrate the journey that the learner took from start to finish.

Further to the aforementioned characteristics, Thomas (2000) proposes that there are 5 criteria in order for a project to be considered PBL: they are centrality, driving questions, constructive investigations, autonomy, and realism.

The first of them is centrality, which states that projects should have their content wholly focused on the curriculum. This centralization directs the learning (specifically the content) for the students and often is used to direct assessment. Without centrality, the content won't align with the project objectives, and can derail the learning process.

The next criterion is the driving questions. As stated before, these driving questions must guide and direct the learning, in such that it promotes active engagement and promotes striving towards student-created solutions. These teacher-led questions must be well thought out as better questions lead to better answers. They should be guided towards a solution, but not be too constraining as to be disingenuous towards the active creation of solutions by the students. An example could be " why would that be the outcome" as opposed to "which of these two outcomes would happen". The latter provides only two options, leaving the students unable to think of other possible solutions, and then eliminating them through critical thinking.

These driving questions lead to the next criteria of constructive investigations. When asking open-ended questions, we allow the students to inquisitively investigate possible solutions. Once the problem is identified, the students can analyze, create solutions, prototype and test their hypothesis, and then validate their findings. These are all critical steps in the active learning process; permitting the learners to understand the subject on a deeper level. This is the difference between learning for the test (knowing the correct answer) and learning for knowledge (knowing why other solutions are the incorrect answer).

All of this should be relatively autonomous, meaning that the teacher should be a facilitator, not a participant. It is the teachers' role to stand aside and let the learning take place, and only intervene when absolutely necessary. When done right, the students will be able to "fail fast" meaning they will test, find that solution does not work, then rebuild and test again until they come to a viable working model. All the while, the teacher should observe and merely guide with more driving questions to promote more constructive investigations, which promote more autonomous learning. The steps are cyclical and intimately tied together to achieve the correct balance of guidance and intervention.

Lastly, to tie everything together, the overarching theme of the project should be based in reality, meaning it should be a real-world example for learning. This can be enhanced (as stated earlier) by a real-world subject matter that is relatable and significant to the learners. Without this, the subject may appear too abstract for the learners to grasp and can lead to diminished attention.

2.1.3. PBL in Early Childhood

PBL can be especially effective in early childhood settings. Children at this age are naturally curious and possess a desire to question, explore, and uncover answers by investigating their environment in an interactive way *(Harris and Katz, 2016)*. Educators can leverage these intrinsic motivations through specific and targeted project approaches.

Project based approach has its foundation in constructivism, (Kemp, 2011). Psychologists and pedagogues such as Piaget, Vygotsky, or Papert supported this theory that states that children construct their knowledge from their own personal experiences (Ackermann, 2001). Considering student's interests, the projects' focuses entail deep learning and inquiry. This is a method that is evolved and extrapolated over several instances, sometimes a month or more in total. The learning environment is centralized around the student, with subject matter that they can relate to, and with the teacher encouraging inquiry and facilitating the learning process, not dictating, (Rahman, Yasin, and Yassin, 2012).

Children between ages three to five are at a pivotal stage of their cognitive development. Taking the cognitive and developmental milestones that occur into account, PBL becomes an even greater tool to leverage. When delivered correctly, such projects can create deeper and richer learning experiences that can enhance motor and cognitive skills due to the nature of the subjects (the age and growth stages of the children).

The way PBL is performed in a preschool classroom has some specific characteristics to review. As we have mentioned before, projects are centered around a collective research effort that concentrates on a question about a topic that is relevant and worthwhile to the students. We have to consider that the knowledge and interest of early childhood students are limited, so the more connected the learning experience can be with the children's' immediate reality, the more successful it will be.

In order to determine the selection of the topic, there is a diagram created by Holt (1989) where the concept of "distance from self" is clearly visible through three different circles that demonstrate what topics are most likely to engage children according to their developmental stage (shown in Figure 1).
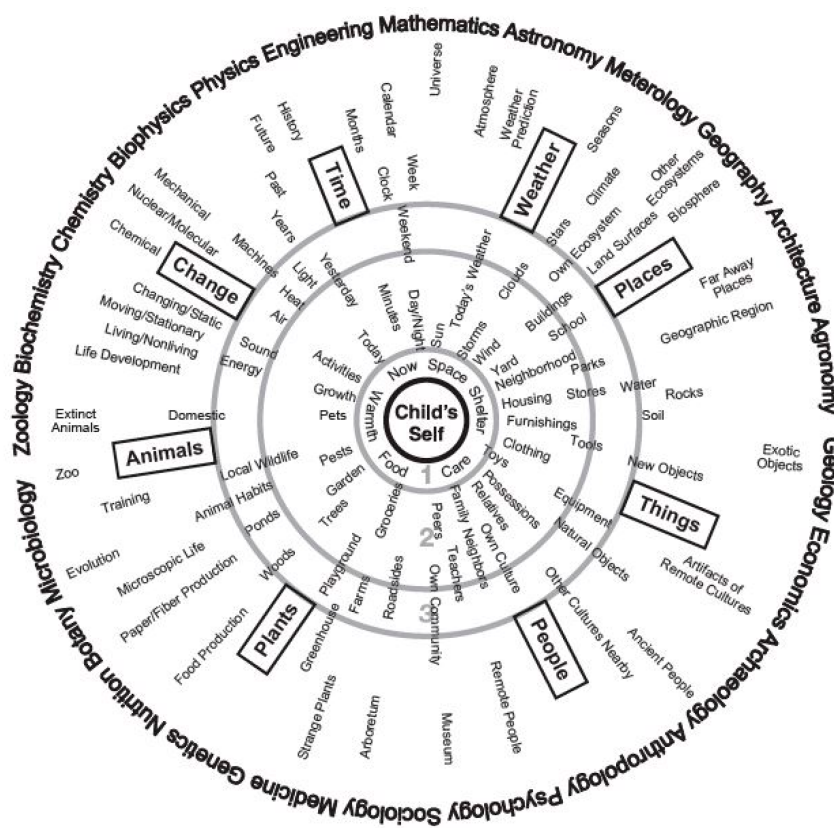
Figure 1. "Distance from self". (Helm and Katz, 2016, p.16)

As we can see on figure 1, the first and smaller circle includes topics relevant to young children (toddlers), the second one (which also includes the topics of the first one) shows the topics relevant for preschool children, and finally, the third circle includes the topics relevant for students in preschool and first grade.

Additionally, teachers should gather as many different artifacts as possible for the students to engage with. When introducing PBL with early childhood students, it is especially important to find artifacts that engage multiple senses to ensure multisensory stimulation, further engaging the learner and further engraining the learning.

Unlike with older students, in early childhood the sessions are usually pre-planned and can be organized into designated areas to further focus on certain skill enhancement as it relates to the PBL. In all of this, the desire is for the learners to ask their own questions, conduct their own research, and make their own decisions.

In essence, fully and freely express their innate curiosity in order to nourish and build the skills they will need to be successful in the 21st century, (Helm and Katz, 2016). This methodology perfectly cooperates with the CLIL approach, as we will see later in our intervention proposal.

2.1.4. PBL in Early childhood in the United States

Even though this is a concept growing in popularity, it is not necessarily a new concept. First established in the British Schools in the 1960s and 1970s, this PBL focus gained further traction in the United States in 1989 through the publication of "Engaging Children Mind's: the project approach" by Katz and Chard.

According to Harris and Katz (2016), there was a tradition of using PBL in early childhood classrooms. Recently, due to the increased concern in regards to accountability, the United States has shifted the educational system to have a higher demand for standards and quantitative testing. This has lead to more regimented processes, and less focus on PBL in early childhood.

From a needs perspective, there has additionally been a focused need for all students to be prepared for the 21st-century workplace. This is a workplace that relies heavily on critical and creative thinking, as well as team collaboration and communication.

Considering these two factors, the authors declare that PBL is a perfect methodology to prepare students for living in the 21st century and also that projects can be used integrating the standards of the curriculum. These are all core concepts that are acquired and reinforced through PBL.

2.2. CLIL

In this section we are going to first define CLIL, review the main aspects of the CLIL approach, its implementation in the United States, and its implementation in Early Childhood classrooms.

2.2.1. CLIL definition

The acronym CLIL stands for Content and Language Integrated Learning. David Marsh first introduced this term in 1994 describing it as an "umbrella term" where

dual-focused education is promoted by using different methodologies while focusing the instruction both in content and in a second language.

Another more recent definition of CLIL is "a dual focused approach in which an additional language is used for the learning and teaching of both content and language", (Coyle, Hood and Marsh, 2010).

We can conclude that this approach comprises not simply a specific method or methodology, but instead many different ones—making it more easily adaptable to different levels, ages, and subjects.

2.2.2 CLIL characteristics

One of the main characteristics of CLIL is the 4C's framework, developed by Do Coyle (2008). This framework combines four different elements:

The first of these elements is **content**. Content is about students creating their own knowledge while developing skills. This new knowledge includes concepts, procedures, and attitudes regarding specific subjects (Science, History, Art, etc.) or cross-curricular topics as global citizenship.

The second element in this framework is **cognition**. When we talk about cognition we are referring to the creation of new knowledge and skills through a second language. When creating this new knowledge, we have to consider Bloom's Taxonomy (Anderson & Krathwohl, 2001), which categorizes thinking skills progressing from Lower Order Thinking Skills (LOTS) to Higher Order Thinking Skills (HOTS). Lower Order Thinking Skills include verbs as remembering, understanding and applying while High Order Thinking skills include mental processes like analyzing, evaluating and creating. This progression from LOTS to HOTS, cognitive challenges the students helping them to internalize the knowledge.

The next element of the 4C's Framework is **communication**. Language in CLIL needs to be transparent and accessible in order to allow students to interact with the context and reinterpret and reconstruct the new content. It is important to consider the language triptych proposed by Coyle, Hood, Marsh (2010), which conceptualizes the language learning dividing it into three categories:

- Language of learning: is the language needed to acquire new concepts and abilities related to the content (specific vocabulary and expressions).
- Language for learning: the language the students need to work in a CLIL environment
- Language through learning: the language students build to facilitate their own comprehension. This type of language learning can be transferred and applied in different new situations and scenarios.

The fourth and last element is **culture**. Culture is related to identity, citizenship and the awareness of "self" and "other" to head for intercultural understanding, (Coyle et al., 2010).

As we can see in figure 2, these four elements are interrelated as they support one another.
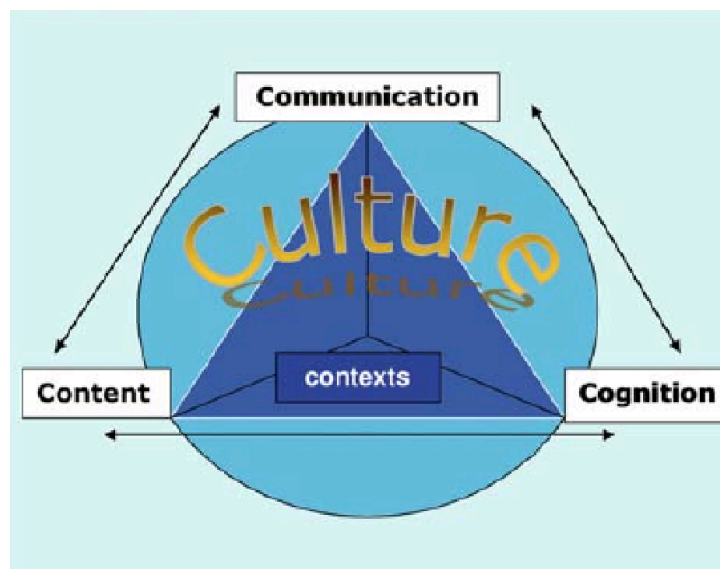
Figure 2. The 4C's framework for CLIL (Coyle, 2005)

As we can observe in this figure, all the elements of this framework are interconnected. The learning of the content contributes to the cognition and vice versa. This relationship works the same for content and communication as well as cognition and communication. Additionally, all three codependent elements are attached to the culture, which is the significance and meaning for the learners.

As we have seen before, CLIL consists of teaching content through and additional language. In order to do so is essential to consider what Cummins (1979) refers to as two different types of language proficiency, BICS-Basic Interpersonal

Communication Skills, and CAP-Cognitive Academic Development. While the former relates to the ability to easily have a conversation in a second language, the latter is the use of that second language in an academic situation. According to Cummins (1979), BICS can be developed by a child after two years of immersion in the target language, while CALP can take between five to seven years to develop. This distinction between these 2 concepts is essential when teaching in a CLIL environment. As educators we need to be familiarized with these concepts, we need to consider our students' BISCS and CALP in order to adapt our materials and teaching to them.

2.2.3. Bilingual education in the United States

The United States is a country where the language primarily spoken is English. Due to the history of being a country founded by immigrants, there are many other languages spoken in the United States, especially in certain parts of the country (more broadly in larger cities). All this language diversity has a large impact on the education system because all these different language backgrounds have to be served within the school system. Ergo, there is a large need for bilingual education in the United States. The policies surrounding these needs have shifted and adapted over recent history due to the changing of—and reactions to—social, cultural, economic, and political positions, Gandara and Escamilla (2017). One of these was the Bilingual Education Act of 1968. This bill was brought to congress as it recognized the needs of limited English speaking ability students. It marked the first step in addressing that the social landscape of the country was changing and with it needed to come education reform. The main purpose of the bill was to provide specific funding to public schools in order to develop programs for limited English speaking ability students (Stewner-Manzanares, 1988).

Several different program models have arisen over the years. Each has slightly different characteristics and uses. Over the next several bulletin points, we will review the main program models (Roberts, 1995):

- Submersion, as the root word 'sub' meaning under or lesser relates, is based on "submersing" non-native English speaking students into English-speaking classrooms. There are many downsides to this model; the first is the general loss of the L1, the second is that many of the recipients of this model feel marginalized and can be found to drop out of school, leading to worse life outcomes.

- ESL Pullout is similar to submersion, except that ESL Pullout adds in focused, separate English language classes. This is a model usually used in places where there are many different languages, thus making it difficult to have a singular L2 focus. The recipients of this model have been shown to have similar outcomes to submersion, such as loss of L1 and falling behind in other subject areas.

- Transitional Bilingual Education is a model where early content classes are taught in the L1, while English is a separate, focused class. Other classes (such as P.E. and Music) can be taken in English as well due to lower language requirements. Though the focus is to create a bridge from the L1 to the English L2, these students can find similar outcomes of losing their L1. This model is found more in areas that have a common L1 that is not English.

- Maintenance Bilingual Education is a model that is designed to maintain the L1, while seamlessly learning the English L2. This is accomplished through having transitional content classes in the English L2 while receiving language arts classes in the L1. As they transition, they will still receive support classes in the L1 to eventually become literate in both languages. The outcomes of this model are superior to the previous in that it is additive and comes with more cognitive benefits (Cummings, 1981).

- Enrichment, Two-Way, or Developmental Bilingual is a model that leverages the diversity of having two different native languages in a single school. It takes the idea of Maintenance Bilingual Education and basically replicates it in the other language (meaning one student's L1 could be another student's L2). This means that content courses would be segregated via the L1, but the students serve as a resource for each other to maintain and learn the L1s and L2s respectively.

- Immersion is a model based on immersing into an L2 language. This is important to note because when English L1 is used, the outcomes are usually plural and bilingual. However, when the minority language learners are immersed in the program, the result is more assimilation and loss of L1, so there are mixed outcomes depending on the background of the student.

As we have just seen, there are many different bilingual models used all across the United States. The application of each of these models depends on many different factors, as the program the school is offering, the age or the language proficiency of the students in the second language.

After reviewing all these models, there is another aspect we need to consider, the way the second language is taught to English Language Learners. Many of these models have something in common; they teach English a second language separating the learning of the content and the language, treating them as independent and not interrelated parts of the learning process. But, as Troyan (2016) articulates in reference to content-based foreign language teaching, there is an understanding that content and language are intricately intertwined and therefore must be addressed together for there to be a balance between the two; for an improved learning outcome to take place.

On the other hand, there is Content-based instruction, an approach originated in Canada in the 1970s, due to the country's need for effective French immersion programs—since the country has a large French-speaking population. According to Sato, Hasegawa, Kumagai, and Kamiyoshi (2017), this approach was eventually brought across the border to the United States to use in Spanish immersion programs due to the increase of immigration from Latin American countries in the United States. Unlike some other methodologies, CBI consists of teaching content and language simultaneously so considering this aspect, we can assert that CBI's main purpose, is very similar to CLIL.

Cenoz (2014) goes on to state that there are many similarities between CBI and CLIL. Essentially, they are described as the use of and L2 as the medium of instruction, plus the desired outcomes in the realms of language, society, and learning are more or less the same.

Furthermore, according to Cenoz and Ruiz de Zarobe (2014), there are different situations where students will learn through CBI. In the case of the United States, the most common iteration would be when L1 speakers are also taught some subjects in an L2 of a majority local language. This is most commonly seen as dual immersion programs of English L1 and Spanish L2.

2.2.4. CLIL in Early Childhood

First of all, in infants, CLIL is more about sensorimotor learning and the focus is on repetition and imitation. In order to encourage learning, teachers should focus on the stimulation of senses through play and object manipulation. Past that phase, in preschool, the students should be encouraged to ask questions and provide simple drawings and stories to further express ideas. This should be built upon the foundation of continuing object manipulation to stimulate the senses (Anderson, McDougald, and Cuesta (2015).

Additionally, it has been found that organizing CLIL contents into global, comprehensive, and interdisciplinary perspectives instead of unrelated areas create enhanced outcomes. This approach has been referred to as 'Weak or Soft' CLIL. This slight variation not only facilitates the language and contents, but also further cognitive development and communication skills. This approach is best utilized in the early childhood stages, with a transition into more formal CLIL afterward (Garcia, 2015).

Also, some studies and projects developed in preschool following the CLIL approach, Fernandez Lopez (2014) stress the importance of the visual input. Students at this stage are able to understand much more than what they can produce, so it is important to help them by using audiovisuals and by labeling and supporting all the new words, so they can associate what they hear with what they see.

2.3. PBL and CLIL in Early Childhood

It has been shown that preschoolers learn in a holistic way, meaning that different areas of knowledge and development are integrated through a singular topic or question. In early childhood, PBL and its parent approach of CLIL are appropriate because of the unique learning style of children at that age.

Normally, on a regular day in Pre-k there are no specific subjects like what is found in most classroom settings. Instead, there is usually a topic is presented and all the areas (social-emotional, cognitive, physical, language, social studies, art, math) are integrated into that topic. Preschoolers are a unique learning group, as they have a wide range of abilities and needs (Henderson, 2017). This is because the students at this age learn through play, touching, manipulating, hands-on activities, exploration, active learning, and meaningful experiences.

Both PBL and CLIL build on this idea through the characteristics of their implementation. PBL, being a methodology of CLIL, focuses on an integration of the specific content through different mediums and languages, centered around a project or projects. Via scaffolding (through the materials and the teacher) the students are able to naturally explore the subjects and content through their L2 language.

3. INTERVENTION PROPOSAL

In this section, we are going to develop an intervention proposal considering a CLIL approach and PBL methodology in a specific preschool classroom in the United States.

In the next subsections, we will deeply describe aspects such as the objectives, educational context and target group, timing, methodology, sessions and activities, and finally the assessment of the proposal.

3.1. Aims of the proposal

We will develop a Project for the students by focusing on food, taking into consideration the important contexts such as where the school is located, the student's interests, and the current preschool curriculum.

As we have seen before, according to the Holt (1989) diagram, we need to consider students' age when selecting the topic we are working on. Projects are supposed to be based on students' interests and they should decide the topic. However, preschool (three to five year old) students are too young to decide a topic by themselves, therefore they need an adult to guide them and scaffold them. Considering this, the younger the students are, the more concrete the topic should be. Also considering that 100% of the students come from families with Mexican heritage (the school is located in a predominately Mexican neighborhood), we will reduce the focus of our topic to something more specific, as it is "Tacos".

With all these, the main objectives we will try to achieve with this intervention proposal will be detailed in table 1:

	AREA	
CONTENT	**Social emotional**	- Participates cooperatively and constructively in group situations - Establishes and sustains positive relationships
	Physical	- Demonstrates fine-motor strength and coordination
	Cognitive	- Demonstrates positive approaches to learning - Uses classification skills
	Mathematics	- Uses number concepts and operations - Compares and measures - Explores and describes shapes
	Science and technology	- Uses scientific inquiry skills - Demonstrates knowledge of the physical properties of objects and materials
	Social studies	- Shows basic understanding of people and how they live - Demonstrates knowledge about self
	Arts	- Explores the visual arts
	Literacy	- Demonstrates knowledge of some letters of the alphabet - Demonstrates knowledge of print and its uses - Comprehends and responds to books and other texts - Demonstrates writing skills - Demonstrates phonological awareness, phonic skills, and word recognition
LANGUAGE	AREA	
	Language	- Demonstrates progress in listening to and understanding English - Demonstrates progress in speaking English - Learns and uses specific vocabulary about the topic

Table 1. Objectives

3.2. Educational context

In order to develop this intervention proposal, we need to provide a context as to where the intervention will take place.

This proposal has been designed for a preschool classroom in a school in Chicago.

3.2.1. The District: Chicago Public Schools

Chicago Public Schools (CPS) is the third largest public school district in the United States. Within this population there is a large demographic of ELL students (18.7%), the largest of which are Spanish speaking bilingual (Retrieved from CPS school data). Although there are ELL's located all over the different neighborhoods in

Chicago, there are dense clusters of Spanish bilingual speakers in very specific areas. Because these specific neighborhoods are populated by a majority of immigrants from Spanish speaking countries, CPS implemented bilingual programs in those schools.

CPS elementary schools are organized into 13 geographic networks that provide administrative support and leadership development to the schools within each network.

3.2.2. The neighborhood

Now that we have reviewed the high-level detail, we are ready to breakdown to the neighborhood and unpack the characteristics we need to understand the case more fully. The school we are going to base our intervention proposal in is located in Network 7 which comprises 2 main neighborhoods, Little Village, also known as "La Villita" (literally translated little village), and Pilsen. These neighborhoods are located on the southwest side of the city. The school in which we are going to base our intervention proposal is located on the Litlle Village neighborhood.

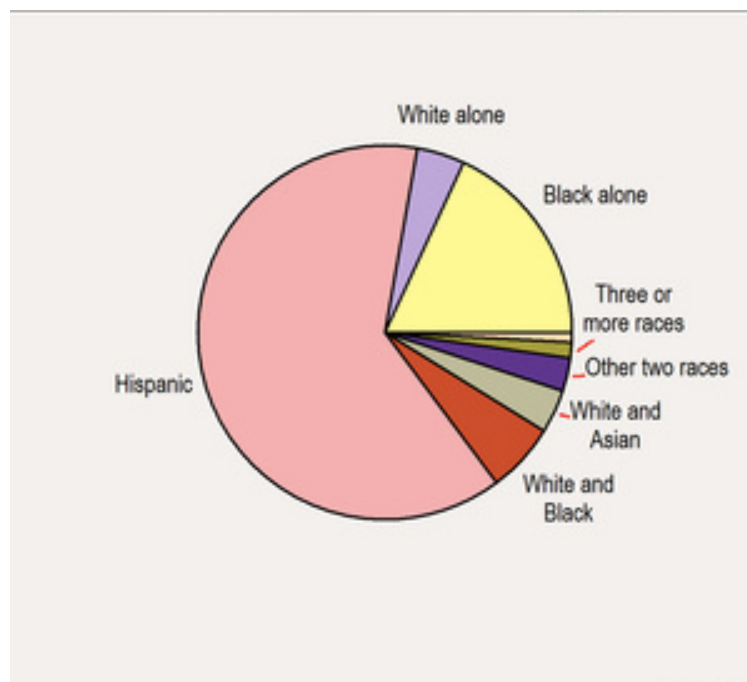The demographics of the residents of this neighborhood can be summarized in figure 3.

Figure 3. Demographics of the Little Village neighborhood. (City-data, 2019)

As we can observe, the majority of the population in this neighborhood is Hispanic, being more than 50% of the population. This is the reason why most of the elementary schools in Network 7 have Transitional Bilingual Programs. That is the case of the school we are going to focus on for our intervention proposal.

3.2.3. The school: Willliam. F. Finkl Elementary School

Next, we are going to go over the characteristics of the school. William F. Finkl (Finkl from now on) is an elementary school that serves students from ages 3 to 14 years old, preschool to 8th grade (that would be the equivalent of 2nd year of Secondary Education in Spain). Finkl School has a Transition Bilingual Education Program (TBE). At Finkl, the Transitional Bilingual Program starts in preschool and goes up to third grade. The students in the bilingual program that start in preschool will be given approximately 80% of the instruction in Spanish and 20% in English. The percentage of English is increased in Kindergarten and every year until students attend monolingual classrooms in 4th grade.

According to the CPS webpage, every school that has 20 or more English Learners, are required to provide a TBE. In order to enroll the students in this program, students must be identified as English Learners, which is done:

- After the results of the Home Language Survey, the families fill out when they enroll their child in school for the first time
- Following the results of a screening
- Via parent/guardian requests.

In table 2 we expose the demographic characteristics of the students both in CPS and specifically in the school the intervention proposal is designed for, William F. Finkl Elementary School.

Ethnicity	District (361.300 students)	Finkl (318 students)
African American	36.6%	14.8%
Asian	4.1%	0.3%
Hispanic	46.7%	**78.5%**
White	10.5%	4%
Other	2.1%	2.3%
Bilingual	18.7% District total (33% in preschool)	47.3%

Table 2. Demographic characteristics of students in CPS and Finkl.

Considering this table, even though 18.7% is the average percentage of total students who are bilingual in the district, you will note that the percentage is 33% in preschool. This is a misleading chart though; because it is not completely true that there are fewer bilingual students as they go up in grade level. This is because all students who are introduced to the school as ELL are given an exam once a year to test their English proficiency. Once they pass this English test, they are no longer considered bilingual/ELL as far as the statistics.

Additionally, these students are put into a monolingual (English) curriculum after they pass this test. This is part of the driving reason why the numbers go down from preschool forward in school, and this is because the majority of the bilingual programs in the city are Transitional Bilingual Programs, whose aim is acquiring the English language at the cost of losing their first language.

Furthermore, looking at the school in which we are going to base our intervention, we can see that the percentage of bilingual students in the school is 47.3%. Once again, the number in preschool is higher. If we extrapolate the data in the graph to compare the two columns, we would get the bilingual number of preschool students around 62% for Finkl. In reality, the value is very close to that, currently standing at 60% (note that is a similar 15% drop from preschool to the overall average between the two columns, theoretically as a result of the Transitional Bilingual Program).

3.2.4. The target group

After reviewing the characteristics of the district, neighborhood, and school, we are going to analyze the characteristics of the group. Preschool classrooms in the United States combine children from three to five years old. The maximum number of students per classroom is twenty, having a ratio of ten students per adult, what makes that almost every preschool classroom has a teacher and a classroom assistant at all times.

There are 2 preschool groups in the school. One of them receives the English-speaking students (some of the students in this classroom also come from Hispanic families but their first language is English), and the other classroom receives only the bilingual or ELL students. This last group is the one we will be focusing on.

Pre-k 107 is comprised of 14 students, 10 boys, and 4 girls; all of them being students whose first language is Spanish (according to the home language survey). Also, according to the CPS race and ethnicity survey, we know that the vast majority of the families originate from Hispanic or Latino heritage. Yet, even though Spanish is the predominant language spoken at home, most of the students have a significantly higher proficiency in English than a similar Spanish-born Pre-K student. This is due to many variables, such as having older siblings who prefer to speak in English, having all television in English, as well as the surrounding environments completely in English.

3.3. Timing

Due to the characteristics of the students in the age of preschool, the timing for this proposal will be characterized by its flexibility. The main aspect that will determine the length of this project will be the children's interest.

A preschool classroom is usually organized in different moments and routines that are repeated every day. These routines help children to organize their minds and be able to predict or expect what will happen next, this will give students security, confidence and also will help them to be more independent. Routines must be adapted to students' age, interests and needs.

The dissertation is intended to last for three weeks, but as we said before, this time will be flexible, and can be shortened or longed depending on the students' interest and engagement. Furthermore, the proposal is designed to be worked on every day in the classroom in a very specific time, but as we said before, if students are not engaged or motivated, we will move that session to the next day.

As we have seen before, a preschool classroom has a very specific schedule, full of routines. In table 3, the schedule of the classroom is posted.

TIME	ACTIVITY
7:45-7:55	Arrival/Wash hands
7:55-8:25	Breakfast/Clean up
8:25-9:00	Circle time
9:00-10:00	Small groups
10:00-11:00	Centers (Blocks, library, computers, manipulatives, puzzles, sand/water table, science, and art)
11:00-11:15	Storytime
11:15-11:45	Lunch
11:45-12:00	Bathroom/Wash hands/Brush teeth
12:00-12:45	Recess
12:45-1:45	Specials (Music/Physical Education/Technology)
1:45-2:15	Quiet time Literacy activity/ letter of the week
2:15-2:35	Wash hands/Snack/Clean up
2:35-2:45	Dismissal

Table 3. Pre-k 107 daily schedule

In our preschool classroom, every topic or activity is discussed and explained to the whole group first during circle time. Circle time is a moment when students and teachers can participate, share ideas and opinions, takes notes, and more.

After this first introduction of the activities during circle time, it is time to transition to small groups. During small groups, students will head to their designated tables in order to perform the previously introduced activity with a small group of peers and with the supervision of a teacher. During our project, we will use these two moments of the day to carry out the different activities and discussions.

Furthermore, during the rest of the day, and especially during center time (where students can independently choose the areas where they want to play) the students will be able to continue experimenting, discovering, and researching about the topic through the different artifacts and visual displays related to the topic.

Table 4 outlines each of the sessions in order as well as their corresponding content focus.

Sessions	Contents
1.	Activating Students' Previous Knowledge
2.	Exploring the Topic
3.	Questions for the Expert
4.	Focus on Math
5.	Dramatic Play
6.	Read Aloud
7.	Getting Ready for the Project Celebration
8.	Project Celebration

Table 4. Session outline

As we will elaborate upon next, these sessions flow in succession, building on one another and finally culminating with the project celebration.

3.4. Methodology of the proposal

As we have mentioned beforehand, the aim of this intervention proposal is to combine PBL and the CLIL approach in a classroom with young learners. In order to carry out this challenge, there are some specific aspects that we need to consider.

First of all, considering that we are going to develop a project with our students, we have to pay attention to some of the methodological characteristics that these approaches have.

As Thomas (2000) proposes, there are 5 criteria we have to consider when developing a Project. The first one is centrality. As mentioned before, projects should be focused on the curriculum. This is why, when developing the sessions, the main objectives and contents will be obtained from our current preschool curriculum (Teaching Strategies). Continuing with the second criteria of driving questions, we will pay special attention to trying to always scaffold their thinking through the questions in order to take them to a solution. We need to have at all times an active methodology, where students are not passive but participative, collaborating, and constructing their own learning with our help. This is where the third and fourth criteria of constructive investigations and autonomy come into play. Our role as teachers is to facilitate learning and become mentors. Lastly, we will not forget that a good project is characterized by realism; in this case, we chose a topic

that is close to the students and part of their daily lives, as is the case with food. We will also leverage this realism by providing students artifacts they can interact with and explore.

As we mentioned before, we will also contemplate the CLIL approach. In order to do so, the 4 C's will be considered as follows:

Regarding content, the current preschool curriculum (Teaching Strategies) with all the different areas of development will be taken into consideration when stating the main objectives and main contents.

Cognition will be considered by using the cognitive verbs from Bloom's Taxonomy when stating some specific objectives. Although most of the verbs considered will be categorized as L.O.T.S, considering the special characteristics of the cognitive development at these ages, they will require higher thinking skills for our students.

The communication objectives will include the three types of language introduced by Coyle et al. (2010): language of learning, language for learning and language through learning. Additionally, we cannot forget the importance of language scaffolding when working with young students. We cannot expect preschool students speaking in whole sentences in a second language. This is why we will constantly speak in English supporting the language with plenty of non-verbal communication (hand gestures, facial expressions, etc.) but we will accept students speaking responses in Spanish or even responses using non-verbal communication (nodding, pointing…) and we will model for them using English, asking them to repeat it in English or repeat our words.

The last C is for Culture. The topic of this project will easily allow us to connect with students' real life and culture. Many of the activities will be performed in groups so social skills will be developed throughout the project. Furthermore, the topic will allow students to connect with their home culture, the one they are more familiar with, and will also allow the families to participate and be part of the project.

This methodology will be put into practice in the sessions that are detailed in the next section.

3.5. Sessions and activities

In the next section, we are going to describe each of the sessions of this intervention proposal. After detailing each of the sessions, there will be a table summarizing the main points of the session.

3.5.1. Session 1: Activating students' previous knowledge

The first session of the intervention proposal is designed to activate students' previous knowledge about the topic.

The first activity will consist of introducing the topic. During circle time, we will state an inquiry question to the students: "Do you know how to make tacos?" then in a big paper chart, we will record students' responses. As mentioned before, we need to consider the student's age, so we will need to provide lots of scaffolding and support. Children at these stages of development tend to talk using two to three words, instead of complete sentences. Due to this, we will have to encourage them to speak in complete sentences by modeling for them and guiding them by using questions in order to provide more information. We will write the student's responses about what they know of that topic on the chart.

After this first activity, students will go to their small groups at the table to draw their first drawing about whatever they know about tacos. We will need to encourage students and remind them to stay focused in order to remember to draw something about the specific topic we are going to be working on. After the students have completed their drawings, they will talk to the teacher about their drawings, and their words will be recorded on the paper.

The third and last activity of this session we will be making another chart in which we develop our web of the investigation. Students in this classroom are already familiarized with the study webs since we use them for every topic of study in our classroom (clothes, trees, buildings, etc.). The main word on this web chart will be tacos, then from there, several topics will be developed as the project itself is developed.

Finally, we will send a note to the families in order to keep them aware of the study topic and also to ask for their cooperation by bringing to the classroom anything they consider related to the topic. Additionally, we will ask for their collaboration for the celebration aspect of the project.

At the end of the session, both charts will be posted in a visible and accessible part of the classroom so we can keep filling our web of investigation during the project.

In order to make the theoretical parts of each session more clear, we have designed a table (table 5) that includes objectives, the 4 C's, materials, activities and the role of PBL.

SESSION 1		
CURRICULUM OBJECTIVES		
- Uses appropriate conversational and other communication skills: engages in conversations. - Demonstrates positive approaches to learning - Explores the visual arts		
THE 4 C'S		
CONTENT	**COGNITION**	**CULTURE**
- Food (tacos) and all the threads that branch from this topic.	Connect and recalls information from previous experiences (previous knowledge)	Respect others' ideas when participating in a discussion
COMMUNICATION		
Language OF learning	**Language FOR learning**	**Language THROUGH learning**
- Use specific vocabulary about the topic: food, ingredients, tomato, onion, steak, meat, chicken, etc.	- Use language for expressing ideas and answering questions	- Participate actively in the discussion
MATERIALS		**ACTIVITIES**
- Paper chart - Markers and crayons - Paper		- Char of previous ideas - Drawing about their PK - Project web
PBL		
- Driving question (open ended question): there is no one "right" answer. - Project Web: the creation of a project web encourages students to be active investigators, while teachers are just facilitators.		

Table 5. Session 1

3.5.2. Session 2: Exploring the topic

The second session will consist of exploring the materials and artifacts collected for the study. The prime focus of this session is using a multi-sensory approach to understand the different materials.

During circle time, with the students seated on the carpet making a circle, we will start by reviewing our study web, reminding the students of our topic and center of focus. Then we will present the students with several artifacts related to the topic (tortilla press, molcajete, tortilla warmer, taco rack, baskets, kitchen tongs, wooden spoons, recipe books). We will go through all these artifacts, naming them, discussing their use, talking about their characteristics, material they are made of, weight, etc.

While seated in the circle, the students will take turns passing around the artifacts and describing how it feels (heavy/light, soft/rough, cold/warm...). It is easier for young students to learn words when they are associated with different senses (i.e. understanding the word "cold" is enhanced by touching something cold). By passing around the artifacts, the students are able to more closely associate new words to objects, and gain a deeper understanding of how each of those items plays a role in the overall center of focus.

After exploring and discussing each artifact, the students will go into their small groups in order to draw one of the artifacts. This will be conducted by laying out several artifacts on the table, allowing the students to choose which one they want to draw. They can observe, touch, and manipulate the object to get a better understanding of it. Additionally, for the advanced students, they will write the spelling of the artifact they have chosen to draw as we sound out each letter of the corresponding word.

All of the artifacts that are being used for the session will be available in the taco project stand. This is to allow the students to go back, explore, and use them at various times to continue to become familiar with them, and also to reinforce the learning that was gained through the session.

Table 6 details the layout of session 2 in regard to the theoretical construct.

SESSION 2		
CURRICULUM OBJECTIVES		
- Demonstrates knowledge of the physical properties of objects and materials - Uses classification skills - Demonstrates knowledge of some letters of the alphabet		
THE 4 C'S		
CONTENT	**COGNITION**	**CULTURE**
- Features and characteristics of the objects. (The materials: wood, metal, plastic, glass) - Functions and uses of the different objects	- Classify objects according to the material they are made of	- Reflect on the fact that some of the tools seen are different in different cultures
COMMUNICATION		
Language OF learning	**Language FOR learning**	**Language THROUGH learning**
- Specific vocabulary about materials: glass, wood, metal, etc - Use present to express statements	- Language for describing objects - Language for comparing objects	- Language used during the different activities
MATERIALS	**ACTIVITIES**	
- Artifacts: tortilla press, molcajete, tortilla warmer, taco rack, baskets, kitchen tongs, wooden spoons, recipe books - Paper, crayons, and markers	- Exploring and discussing the artifacts - Drawing one of the artifacts - Writing words by identifying and writing letters when sounded out.	
PBL		
- Use of artifacts. Realia: real objects that help students to observe, think and question - Students active participation and investigation		

Table 6. Session 2

3.5.3. Session 3: Questions for the expert: visiting the school kitchen

This next session will consist of different activities. We will start by preparing the students for the visit to the expert. After having developed our project web, we would have identified several experts in the realm of tacos. We will discuss who we can meet with (such as the school cook), then begin drafting our questions for the expert.

We start by seating all the students in a circle to begin discussion about what questions we are going to ask the expert, the school cook. This will be done with a lot of teacher support and leading questions. As we come up with the questions, we will write them on a paper chart, listing them out individually.

In preparation for the visit, I would coordinate with the school cook on logistics such as time, location, number of students, and what to expect. On the day of the visit, we first review with the students on safety in the kitchen.

Next, we will provide them with a clipboard, paper, and a black marker so they can take notes or do observational drawings during the visit. Lastly, we will ask the questions that were written down in the chart. Each student will be prepped ahead of time to ask one question (with or without teacher support), from the chart.

After the visit concludes, we will go back to the classroom. Then the students will take turns showing and explaining what notes or observational drawings they did. After the students explain their findings, I will meet with them individually to write out what the notes or pictures are.

Table 7 details the layout of session 3 in regards to the theoretical construct.

SESSION 3		
CURRICULUM OBJECTIVES		
- Uses scientific inquiry skills - Shows basic understanding of people and how they live - Explores the visual arts		
THE 4 C'S		
CONTENT	**COGNITION**	**CULTURE**
- The professions: cook - The process and steps for cooking tacos	- Identify the profession of cook	- Recognizes health and safety habits that must be taken in a kitchen
COMMUNICATION		
Language OF learning	**Language FOR learning**	**Language THROUGH learning**
- Understand and use lexicon related to the profession of cook	- Language for asking questions - Language for explanation	- Orally present the notes/drawings taken during the visit to their peers
MATERIALS	**ACTIVITIES**	
- Clipboards - Paper - Black marker - Paper chart	- Preparing for the visit: questions for the expert - Visit the school kitchen - Sharing the notes taken during the visit with peers	
PBL		
- Student inquiry: fomenting students curiosity - Communication: improving students communicative skills when sharing and presenting their notes of the visit - Critical thinking - Active participation		

Table 7. Session 3

3.5.4. Session 4: Math with playdough tacos

This fourth session will be focused on math. As usual, we will start with our students seated in a circle then introduce the activity. Initially, we will discuss how to make the basic ingredient of a taco, the tortilla. We will try to make a connection with students' previous experiences by asking them if they have ever seen someone in their family making tortillas. The discussion will be guided to specific vocabulary words such as "dough", and from there we will suggest that the students "practice" making the dough before making our own tortillas by using playdough. Furthermore, we will also ask them if they know what a recipe is, introducing new vocabulary words such as recipe book or ingredients.

After this introduction, with the students seated around the working table, we will start following the recipe (handwritten in a big paper chart beforehand) to "cook" play dough. Students will take turns measuring the different ingredients (flour, oil, water, salt and food coloring), using different measurement instruments (cups, jars, spoons), and following the recipe. They will also take turns mixing it and we will have them focus on the different ways of measuring the ingredients, as well as the different textures of the ingredients (liquids, powder, etc.).

After the students are done mixing all the ingredients, we will cook the playdough so that they can see how it turns into a solid. Once they play dough is warm enough for them to play with, we will give them a small ball (introducing the word sphere) of playdough and have them make a tortilla. We will present several questions to challenge their thinking like:

"What shape do tortillas have?"
"How can we make this sphere of playdough flat?"
"What utensils can we use to make it thinner?"
"What shape do I get when I fold the circle tortilla in half to make a taco?"
"Can you make a big and a small tortilla with your playdough?

We will provide the students with different instruments like a tortilla press, rolling pins, or play dough cutters so they can experiment.

Table 8 details the layout of session 4 in regard to the theoretical construct.

SESSION 4

CURRICULUM OBJECTIVES

- Compares and measures
- Explores and describes shapes
- Demonstrates fine-motor strength and coordination

THE 4 C'S

CONTENT	COGNITION	CULTURE
- Measurement instruments and their use - 2D and 3D shapes and their properties	- Compare the different measuring tools - Use tools to experiment and create	- Establish and sustain positive relationships by taking turns

COMMUNICATION

Language OF learning	Language FOR learning	Language THROUGH learning
- Specific vocabulary: ingredients, recipe, recipe book, measuring instruments.	- Use language for making comparisons - Use language for explanations (answering questions)	- Oral language used when following a recipe

MATERIALS	ACTIVITIES
- Ingredients for making playdough: flour, oil, salt, water, food coloring. - Electric pan - Measuring tools - Tortilla press, rolling pins, playdough cutters	- Making play-dough - Experimenting with the playdough using different materials

PBL

- Driving questions, that will help to guide our student's curiosity
- Critical thinking
- Problem-solving
- Feedback and revision

Table 8. Session 4

3.5.5. Session 5: Taco restaurant

For the next session we will create a Taco Restaurant in the dramatic play area so students can play and continue with their learning during free-choice time.

We will initiate this by sharing the idea of creating a Taco Restaurant with the students. After introducing the new idea, we will change the dramatic play area to transform it in a Taco restaurant, adding specific food toys (tomatoes, lettuce, onion, cheese, chips, avocados, tortillas, etc.) and other toys like a cash register machine, telephone, a table with chairs, aprons, and all kind of kitchenware (plates, glasses, bowls, pans, forks, spoons, measuring cups) and furniture (fridge, stove, shelves…)

From here, several activities will be performed:

- Deciding on the Restaurants' name: we will present the students with the opportunity to come up with ideas about the name we could have for our taco restaurant. As a group, we explain that the taco restaurant needs a name. We will write the students' ideas on a paper chart. Once we have all the names listed, the students will vote by putting a tally mark next to the name they like most. After the votes are counted and the name is chosen, we can help the students write a sign with the name of the restaurant in big letters and let the students decorate it.

- Writing the Restaurant's menu: in a large group, we will first discuss what a menu is. Since the students may not know what a menu is, we will use driving questions to help them understand such as "Have you ever been to a restaurant", "How do you know what food you can choose". Once we lead the students to understand the concept clearly, we will discuss with the students what they want the restaurant to have on the menu. We will use further driving questions to help them understand what is and isn't on a menu at a taco restaurant. Subsequently, once the students understand this idea, with our assistance in sounding out the sounds of the letters that compound the word, the students will write the menu by taking turns.

Table 9 details the layout of session 5 in regard to the theoretical construct.

SESSION 5		
CURRICULUM OBJECTIVES		
- Participates cooperatively and constructively in group situations - Demonstrates knowledge of some letters of the alphabet - Demonstrates fine-motor strength and coordination		
THE 4 C'S		
CONTENT	**COGNITION**	**CULTURE**
- Written language as a way of communication and information - The use of writing for real purposes	- Propose a name for the taco restaurant - Create a menu for the taco restaurant	- Participate and cooperate in group activities respecting other's opinions
COMMUNICATION		
Language OF learning	**Language FOR learning**	**Language THROUGH learning**
- Understand and use lexicon related to food	- Use language for expressing opinions	- Listen to other's contributions - Oral language used when expressing opinions
MATERIALS	**ACTIVITIES**	
- Color paper - Crayons and markers - Restaurant menus	- Deciding and writing the name of the taco restaurant - Writing the menu of the taco restaurant	
PBL		
- Feedback and revision - Collaboration - Communication - Active participation		

Table 9. Session 5

3.5.6. Session 6: Read aloud: Dragon's love tacos

In this session we will perform a read-aloud to the students with the story "Dragon's love tacos". The concept is to continue with the main project topic, but have it delivered in a more abstract manner, reinforcing the new vocabulary. We begin by sitting on the carpet together with all the students, going through the cover of the book, the title, the author, and the illustrator. Then we perform the read aloud, showing them pictures of the book and asking questions throughout to gauge student comprehension such as: "Who is the main character?", "What is the main setting?", or "Can you identify the main problem?"

Once the reading is complete, the students break up into small groups and draw about what parts of the book they liked most and why. Then, I will go around to the students individually to ask questions about their drawings to further gauge individual comprehension including: "Can you tell me about your drawing?", "Do you remember who the main character was?", or "Why did you choose to draw this?"

Table 10 details the layout of session 6 in regard to the theoretical construct.

<table>
<tr><th colspan="3">SESSION 6</th></tr>
<tr><th colspan="3">CURRICULUM OBJECTIVES</th></tr>
<tr><td colspan="3">- Comprehends and responds to books
- Interacts during reading experiences
- Explores the visual arts</td></tr>
<tr><th colspan="3">THE 4 C'S</th></tr>
<tr><th>CONTENT</th><th>COGNITION</th><th>CULTURE</th></tr>
<tr><td>- Books as a source of learning and enjoyment
- Story features: characters and settings.</td><td>- Identify the main characters of the story
- Create a drawing to synthesize the story</td><td>- Appreciate and accept the differences in preferences and interests</td></tr>
<tr><th colspan="3">COMMUNICATION</th></tr>
<tr><th>Language OF learning</th><th>Language FOR learning</th><th>Language THROUGH learning</th></tr>
<tr><td>- Use the present tense to answer questions about the book</td><td>- Language for explanation and argumentation</td><td>- Listen to and understand the story read by the teacher</td></tr>
</table>

MATERIALS	ACTIVITIES
- Paper and markers	- Read aloud and discuss the book
- Book: Dragons love tacos	- Drawing something related to the book
PBL	
- Critical thinking	
- Inquiry	
- Active participation	

Table 10. Session 6

3.5.7. Session 7: Getting ready for the Project Celebration

In this session, we will be preparing for the project celebration. The main focus will be to get everything in order for the final public product.

The first part will be decorating aprons. The children will choose a few different aprons to decorate. Then the students will break up into small groups to decorate the aprons with the use of markers and stickers, culminating with writing their names on the respective aprons.

Next, we will create a shopping list of ingredients to make tacos. This will comprise of explaining to the students that there will be a celebration coming up and we will need to purchase ingredients to make the tacos for the party. The teachers will lead the discussion around what ingredients and toppings the students want in their tacos. As a large group, we will make the list, writing it out in a large chart. Questions would entail estimations of quantity and size.

Lastly, we will send invitations to families. The invitations will be pre-drafted with blanks to be filled in by the students such as the date, the time, and their name. These invitations will be sent home with the students a few days before the project celebration.

Table 11 details the layout of session 7 in regards to the theoretical construct.

SESSION 7		
CURRICULUM OBJECTIVES		
- Participates cooperatively and constructively in group situations - Demonstrates knowledge of print and its uses - Demonstrates writing skills - Explores the visual arts		
THE 4 C'S		
CONTENT	**COGNITION**	**CULTURE**
- Materials and instruments to create art - Written language as a way of communication and information	- Use and experiment with materials and instruments to create art - Recall and list ingredients needed to make a taco	- Participate in group situations
COMMUNICATION		
Language OF learning	**Language FOR learning**	**Language THROUGH learning**
- Understand and use lexicon related to food	- Language for retelling	- Language used throughout the activities
MATERIALS		**ACTIVITIES**
- Aprons - Clothing markers - Invitation sheets - Paper chart and markers		- Decorating aprons - Writing shopping list - Writing an invitation to families
PBL		
- Communication - Active participation - Feedback and revision		

Table 11. Session 7

3.5.8. Session 8: Project Celebration: making Tacos

As we have seen during this dissertation, one of the main characteristics of PBL is that it usually finishes with a public product. In our case, this public product will be the celebration of the project consisting of cooking Tacos in the classroom with the assistance of the family members of our students. This celebration will be the culmination of all the previous sessions.

First, there would be some pre-determined parent volunteers who know how to make tortillas from scratch to help cook. This would be determined by sending notes home to the parents to ask them to collaborate if they know how to make tortillas from scratch. Knowing how many volunteers we have will also help us understand the flow of the session and what particular skills or areas we may be missing. Each of the volunteers would have assigned roles in the cooking process to help with efficiency. The classroom setting would be also shifted with tables pushed together and tablecloths over them to create the workable area.

Before the session starts, we would explain to the volunteers that they are there to facilitate the learning of the students; they should ask questions and make sure the students also participate instead of simply watch and observe. The volunteer cooks would first show the students each ingredient as it goes in, and demonstrate the process of making the dough. Once the dough was created, each of the students would be given some to knead and make into a ball. After that, they would individually press the dough balls into tortillas in the tortilla press.

Next, the adult volunteers would cook the tortillas in an electric pan, preparing them for the final step. Once the tortillas are finished, the tacos will be "self-service" with all the ingredients and topping options on the table. During this time, the students can showcase to their parents each of the sessions that were done, demonstrating knowledge of the artifacts, vocabulary, as well as motor-sensory improvements (drawings, making the tacos).

Table 12 details the layout of session 8 in regards to the theoretical construct.

SESSION 8

CURRICULUM OBJECTIVES
- Participates cooperatively and constructively in group situations
- Shows basic understanding of people and how they live
- Establishes and sustains positive relationships

THE 4 C'S		
CONTENT	**COGNITION**	**CULTURE**
- Food as a celebration - Family and celebrations	- Identify the different ingredients used when cooking - Experiment with hands and tools to perform the activity	- Understand that different foods are linked to different cultures

COMMUNICATION		
Language OF learning	**Language FOR learning**	**Language THROUGH learning**
- Use present to express processes - Understand and use lexicon related to the process of making tacos.	- Use language for describing a process	- Participate in conversations with adults

MATERIALS	ACTIVITIES
- Ingredients to make tortillas: maseca, salt, and water - Ingredients to make tacos: tomato, onion, chicken, cheese, and avocado. - Electric pan	- Cooking tortillas - Project celebration: taco party

PBL
- Project celebration - Public product

Table 12. Session 8

3.6. Assessment

The following section is focused on assessment in a dual way. On the one hand, the assessment of the students' learning process and on the other hand the assessment of the intervention proposal itself.

3.6.1. Learning assessment

Learning assessment is a key point in every educational process, as it is part of every teacher's responsibilities. When considering assessment, the first point we need to focus on is its purpose. In our preschool classroom, the main purpose of the assessment will be the assessment for learning; meaning formative assessment. Using formative assessment will allow us to support and improve the students' learning process. In order to do this, we need to know where our students are in their learning as well as where they need to be.

As we have seen in the previous section, the first activity of our project consists of collecting students' previous ideas about the topic. This is an initial evaluation, so with the information obtained, we can plan according to their previous knowledge, adjusting activities to students' level and needs.

After revising the purpose and use of the assessment, we need to focus on the assessment methods. During this project, authentic and alternative assessment methods will be considered. The main instrument to carry out this assessment will be observation. Throughout the project, we can observe several performance assessment tasks. These are activities that are action-oriented, where students have to do, complete, or perform something (making play-dough, taking notes on the school kitchen visit, making tortillas, exploring the ways in which the artifacts can be used). Also, we will carry out some one-on-one communication assessments, like when we ask students questions about their drawings, then write their responses.

Due to the students' ages and levels of development it will be hard to perform peer or self-evaluation, though some questioning to make them reflect about their work can be done in some of the activities. We will guide their reflections with questions such as "How do you think you did? Do you think you could have done it differently? Do you think you could have used different colors?"

After considering some important aspects of the assessment, we will proceed with itemizing the assessment criteria for this project:

- Students show basic understanding of the topic and all the subsequent threads (professions, types of foods, cooking instruments, etc.). (Content)
- Students demonstrate cognitive skills (classify, compare, measure). (Cognition)
- Students demonstrate progress in listening to and understanding English by following directions (Communication)
- Students show progress in speaking English by participating in group discussions (Communication)
- Students learn and use specific vocabulary about the topic (Communication)
- Students establish and sustain positive relationships with peers and adults. (Culture)
- Students show understanding of the correlation between the project topic and their culture. (Culture)

3.6.2. Intervention proposal assessment

Finally, it is crucial to assess our intervention proposal in order to not only analyze the pros and cons of its implementation, but also to be able to improve it for future possible implementations.

In order to best deliver this project; the teacher will need to perform a self-evaluation of teaching practices. To do this, I will use the following checklist, as can be seen in table 13.

CRITERIA	YES	NO	SUGGESTIONS FOR IMPROVEMENT
Were the objectives achievable?			
Were the activities adequate for students' age?			
Was the environment motivating and stimulating?			
Was the allocated time appropriate?			
Were the 4 C's integrated into all the activities of the project?			
Were the materials/artifacts enough and engaging for the students?			
Did we provide enough and quality scaffolding?			

Did the driving questions improve students' communication and thinking skills?			
Did the activities proposed allow students to work independently and construct their own investigations?			
Was the project topic engaging for the students?			
Were CLIL and PBL combined successfully?			

Table 13. Self-evaluation

Additionally, we can set a time for a debrief. As the main purpose of this dissertation is the combination of CLIL and PBL in a preschool classroom, it would be interesting to create a session with all the project facilitators to go through what went well and what could have been improved in the implementation of this combination. This could consist of a red light/yellow light/green light session. The green light represents things that went well that should be done next time. Yellow light represents things that should be looked at to change for next time. Red light represents things that should not be done next time.

4. DISCUSSION

In this intervention proposal, we have combined two important educational approaches, PBL and CLIL in an Early Childhood classroom in order to help students develop and learn content through a second language. Expanding upon the research, this intervention proposal creates an original approach for bilingual education with preschoolers.

The idea is that preschoolers can be able to learn content and language while participating in a project that connects and integrates all the child developmental areas while constructing their knowledge. Our intervention proposal is based on an active methodology, connecting in all the sessions both CLIL and PBL approaches.

Firstly, the CLIL module has been developed throughout the sessions by integrating the 4 C's framework designed by Coyle et al., (2010). Considering this framework, Content, Cognition, Communication and Culture are incorporated in our project, making the learning meaningful and intertwined with the project topic. Since

communication plays a vital role, special consideration has been taken with the language triptych (language *of*, *for*, and *through*). This was specifically considered through the tables laid out in each session.

Secondly, PBL principles had been taken into account in the different sessions by developing a project that was both meaningful and relevant to the learners. As Blumenfeld et al., (1991) states, this is a basic characteristic in order to create interest and attention in the students. Also considered was the creation of activities that involved first-hand interactions with realia, the use of driving questions throughout the sessions, and the promotion of autonomous learning through the different experiences; some of the characteristics that Thomas (2000) proposes in order for a project to be considered PBL.

This proposal has been designed to facilitate the learning of content through a second language by way of the combinations of PBL and CLIL. It should be noted that this intervention has not been implemented, so we cannot provide real-world results to analyze the efficacy of the sessions. We can, however, examine the structure and protocols and conclude that if implemented as it is laid out, the main objective of learning content through a second language should be achieved.

5. CONCLUSIONS

In this section, the conclusions of this intervention proposal will be exposed. Taking into consideration the initial objectives of the proposal, we will analyze how the development of this dissertation has contributed to meet the objectives. Thus, the main aim of this dissertation was to create an intervention proposal that provides preschool students with an engaging and authentic way of learning a second language through PBL using the CLIL approach.

Also, from a theoretical perspective, we have analyzed the characteristics of PBL and CLIL, concluding that both approaches are suitable for a preschool classroom. We have additionally stated how their characteristics make them easy to work with due to their intertwined and interconnectedness, even more so in a preschool setting due to the characteristics and the learning approach of students at that age.

Also, the current situation of the bilingual education system in the United States has been analyzed, demonstrating that there are still some models being implemented

that create outcomes of losing the L1 while only gaining the L2. In this analysis, we found that CLIL created improved results in bilingual situations.

Finally, through the development of the different sessions of this dissertation we have met our last stated objective. By creating activities that improve students' knowledge of the proposed content we simultaneously enrich students communication skills and vocabulary in the second language.

This intervention proposal, when executed as laid out, should create improved learning outcomes for preschool students, in reference to content and language learning; thus setting a roadmap for future bilingual coursework.

6. LIMITATIONS AND FURTHER RESEARCH

In the final part, we will reflect and discuss the limitations of our findings as well as proposals for further research. This is designed to clarify how to expand upon the intervention proposed in this paper.

Firstly, regarding the intervention proposal, it has yet to be implemented in the real world setting of a classroom. This means the outcomes cannot be verified, so we cannot suggest strategies for improvement or future development based on results. If it were to be implemented, it should be done in conjunction with a "control" group, so as to see if the intervention group had improved outcomes over the customary bilingual curriculum. Additionally, a long-term study through multiple grade levels would verify if this combination of CLIL and PBL could be compounded through multiple years to facilitate even greater outcomes.

Secondly, in Europe there is a clear trend of moving towards using the CLIL approach to teach a second language, which lends much research on the topic. However, in the United States, there is not a singular preferred method, which created difficulties in finding substantial information on the use of CLIL in United States classrooms. Further research needs to be done in the area of CLIL to showcase the results specific to the United States. Moreover, the CLIL approach needs to be adopted in more classrooms in the United States to offer substantially more opportunities for research to be performed.

Additionally, there is information available on the topics of combining CLIL and PBL, as well as combining PBL in preschool, but there was little to no information available on the combination of CLIL, PBL, and preschool. This leads to making assumptions about the outcomes of the combination of all three based on the research around the combination of two out of the three. Further research needs to be done in regards to the combination of these three aspects to provide more concrete information about any nuances or characteristics that may be specific to their combination.

To conclude, we would like to see further research done around the combination of CLIL and PBL in preschool classrooms. Additionally, we would like to implement the intervention proposal to validate outcomes and have data to analyze. This would allow us to make adaptations for future uses.

Hopefully, this intervention proposal provides preschool teachers with evidence-based information that encourages them to use and apply these approaches in their classrooms.

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