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Impact of TEACH: A Virtual Pedagogical Model for Teaching English as a Foreign Language

Impacto de TEACH: un modelo pedagógico virtual para la enseñanza del inglés como lengua extranjera

Impacto do TEACH: um modelo pedagógico virtual para o ensino de inglês como língua estrangeira

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Abstract

The article proposes a virtual pedagogical model for English language teaching that is based on five dimensions: the technological-communicative dimension, the educational-pedagogical dimension, action-based research, competency development, and holistic learning. Its implementation involved 22 students from a bachelor's program in Languages with an emphasis on English at a Colombian university. This study was conducted in three phases: the creation of the TEACH model for virtual learning environments; the adaptation of the syllabus, based on content and language integrated learning (CLIL) and on problem-based learning (PBL) within the framework of an English-taught course; and data collection and analysis through interviews, Likert-scale surveys, observation, and learning analytics. The thematic analysis revealed three categories, yielding results related to interaction and research skills, the impact of task design and problem solving, and learning through experience. The findings highlight the interrelation of these aspects within the TEACH model, demonstrating improvements in

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English language learning. This study concludes that the model positively impacted learning by anticipating objectives, fostering critical thinking, enhancing communication, and facilitating implicit learning. Additionally, the structured interaction and the design of authentic, content-meaningful tasks played a key role in reinforcing learners' linguistic performance and engagement in real communication.

Keywords: 21st-century skills, CLIL, PBL, English as a foreign language, virtual pedagogical model

Resumen

El artículo presenta la propuesta de un modelo pedagógico virtual para la enseñanza del inglés, basado en cinco dimensiones: tecnológico-comunicativa, educativo-pedagógica, investigación basada en la acción, desarrollo de competencias y aprendizaje holístico. Su implementación involucró a 22 estudiantes de un programa de Grado en lenguas con énfasis en inglés de una universidad en Colombia. El estudio se desarrolló en tres fases: la creación del modelo TEACH para entornos virtuales de aprendizaje; la adaptación del programa de estudios siguiendo un enfoque AICLE (Aprendizaje Integrado de Contenidos y Lenguas Extranjeras) y ABP (Aprendizaje Basado en Problemas) en una asignatura impartida en inglés; y la recogida y análisis de datos mediante entrevistas, cuestionarios con escala Likert, observación y analíticas de aprendizaje. El análisis temático reveló tres categorías relacionadas con el desarrollo de habilidades de interacción e investigación, el impacto del diseño de tareas y la resolución de problemas, y el aprendizaje a través de la experiencia. Los resultados pusieron de manifiesto la interrelación de estos aspectos dentro del modelo TEACH, evidenciando mejoras en el aprendizaje de la lengua inglesa. Finalmente, el estudio concluyó que el modelo tuvo un impacto positivo en el aprendizaje, al favorecer la anticipación de objetivos, el pensamiento crítico, la comunicación y el aprendizaje implícito. Del mismo modo, la interacción estructurada y el diseño de tareas auténticas y significativas desempeñaron un papel clave en el fortalecimiento del rendimiento lingüístico de los estudiantes y en su implicación en situaciones reales de comunicación.

Palabras clave: ABP, AICLE, inglés como lengua extranjera, habilidades del siglo 21, modelo pedagógico virtual

Resumo

Este artigo apresenta uma proposta de modelo pedagógico virtual para o ensino de inglês, baseado em cinco dimensões: tecnológico-comunicativa, educacional-pedagógica, pesquisa-ação, desenvolvimento de competências e aprendizagem holística. Sua implementação envolveu 22 alunos de um curso de bacharelado em Letras com ênfase em Inglês em uma universidade na Colômbia. O estudo foi conduzido em três fases: a criação do modelo TEACH para ambientes virtuais de aprendizagem; a adaptação do currículo, seguindo uma abordagem de aprendizagem integrada de conteúdo e língua (AICL) e aprendizagem baseada em problemas (ABP) em um curso ministrado em inglês; e a coleta e análise de dados por meio de entrevistas, questionários com escala Likert, observação e analítica de aprendizagem. A análise temática revelou três categorias relacionadas ao desenvolvimento de habilidades de interação e pesquisa, ao impacto do planejamento de tarefas e resolução de problemas e à aprendizagem experiencial. Os resultados destacaram a inter-relação desses aspectos dentro do modelo TEACH, demonstrando melhorias na aprendizagem da língua inglesa. O estudo conclui que o modelo teve um impacto positivo na aprendizagem, promovendo a antecipação de objetivos, o pensamento crítico, a comunicação e a aprendizagem implícita. Da mesma forma, a interação estruturada e a elaboração de tarefas autênticas e significativas desempenharam um papel fundamental no fortalecimento do desempenho linguístico dos alunos e no seu envolvimento em situações de comunicação da vida real.

Palavras-chave: habilidades do século XXI, ABP, AICLE, inglês como língua estrangeira, modelo pedagógico virtual

Introduction

The rapid expansion of technological advancements has intensified the need for students and teachers to enhance the educational use of virtual learning platforms through models that emerge in response to the ever-changing demands of society, such as the cultivation of 21st-century skills and the language development (Fathi et al., 2024; Herrera, 2017). However, recent research shows that virtual environments where English as a Foreign Language (EFL) is taught often fail to provide sufficient opportunities for intercultural engagement, autonomy in the learning of languages, and meaningful interaction, which are key elements for students in undergraduate language programs (Fathi et al., 2023; Hwang & Lee, 2023; Xu et al., 2025). These challenges are specifically related to cultural awareness courses in which students must show an advance and the consolidation of their communicative competences, but also the development of their ability to interpret and respond to cultural meanings.

In this way, innovative teaching methodologies must be created to guarantee the students' participation, foster meaningful learning and provide them with tools to develop communicative, cultural and 21st-century skills. That is why the authors proposed for the present study the implementation of a virtual pedagogical model designed for a virtual Cultural Awareness course, leveraging CLIL and PBL to enhance language teaching processes, the development of the intercultural competence, and integrate the development of the 21st-century skills in students, essential skills in the current language-education frameworks (Xu et al., 2025; UNESCO, 2025). Given the scarcity of research studies on how integrated models in current virtual EFL and cultural courses, this study can offer a preliminary response to this pedagogical necessity.

The intersection that the model proposes among the pedagogical and technological tenets is aimed at encouraging language learning to open linguistic, cultural, technological and social horizons; favoring student autonomy, which is underexplored in virtual environments (Fathi et al., 2023; Hwang & Lee, 2024). Current education needs to promote independent processes and adapt to new paradigms, reinventing the way of teaching and learning, with the project being a platform applicable in various educational sectors. Therefore, students need educational strategies to strengthen the use of languages while developing their intercultural competencies (Fathi et al., 2023; Herrera, 2017).

As Álvarez and Ramírez (2021) state, culture is a dynamic collection of historical semiotic resources, including language, beliefs and customs, shaped through social interaction. These resources are acquired during socialization within various groups, so language learning and the development of intercultural competencies are crucial for language students to understand diversity among multiple languages and cultures. Additionally, students need academic proposals that strengthen skills such as critical thinking, collaboration, communication, self-management, and problem-solving; this, while using technologies and information technologies (IT), is applicable to all disciplines, especially for undergraduate students in virtual modalities (Fathi et al., 2023; Herrera, 2017; Hwang & Lee, 2024).

Considering the previous problematics, the study is articulated on the following question: What are the effects and outcomes of implementing a pedagogical model specifically designed for a virtual learning environment in a Cultural Awareness course, utilizing the CLIL and PBL approaches, within the framework of the 21st-century skills? Findings on this research offer valuable propositions for teachers and curriculum designers that are in search of augmenting their teaching skills in virtual learning environments. This study offers a preliminary pedagogical alternative to addressing these gaps in virtual language-education settings.

Theoretical Framework

The theoretical constructions of this research are based on the five dimensions of the model that help generate new ways to redirect teaching-learning educational practices, focusing on the concept of a virtual learning model, its definition, and how it is grounded in PBL, CLIL, and 21st-century skills. This way, the virtual pedagogical model is highlighted as dynamic and renewing.

Virtual Pedagogical Models

Ever since the emergence of virtual learning, there have been some variations in response to the demand and changes brought about by technology. E-learning is constantly evolving and new knowledge is generated every day. According to Ahmad et al. (2023), Fousiya and Mohammed (2024) and Moleka (2023), we are still in the educational phase of education 5.0, despite significant advances in virtual learning and artificial intelligence (AI). However, we are still far away from what they have stated as

Education 6.0, where teachers integrate student autonomy, personalized learning through the embrace of AI, and its ethical and responsible use of information within education, so teacher can foster a learner-centered ecosystem grounded in ethical AI use and cognitive flexibility to have as a result a dynamic learning environment in which ICT and AI have a possibility, and adaptative analytical learning is promoted (Ahmad et al., 2023; Fousiya & Mohammed, 2024).

According to recent literature, virtual pedagogical models are not limited to simply transferring content to virtual environments; instead, they represent a formal structure that articulates coherent theoretical principles, didactic criteria, interactions, and assessment tools, as TEACH model did. Means et al. (2014) indicated that a virtual model must guarantee conceptual continuity between instructional design, interaction, and technological support, while Garrison's (2016) community of inquiry approach defined the essential elements for sustaining teacher presence (cognitive and social) in virtual environments. Furthermore, Hodges et al. (2020) and Bozkurt et al. (2020) emphasized that a virtual model requires solid theoretical foundations that transcend the instrumental use of platforms.

According to González and Rivera (2020) and Camacho et al. (2024), virtual pedagogical models should be based on theoretical-formal constructions and scientific and ideological assumptions to address the needs of students and their educational realities; and, thus, achieve specific strategies, procedures and technique for their learning process. To establish a model, one must start with scientific modelling as an operative model between theory and practice, thereby defining a phenomenon and its best didactic understanding and proposal to fulfil the students' needs (Camacho et al., 2024; Flores et al., 2018).

Besides, this process is grounded on principles of current instructional design. Reigeluth (2020), Merrill (2012) and Branch & Varank (2009) established that pedagogical models should incorporate authentic problems, meaningful interaction, continuous feedback, and coherence between objectives, content, technology and assessment. From this perspective, the TEACH model aligns with current instructional design guidelines by applying theoretical principles into a practical proposal applicable to virtual EFL courses.

In the case of this study, authors projected a transition from theory to a reliable didactic proposal in the Cultural Awareness classes in English are designed in a virtual format. The methodology applied to these classes is entirely virtual, but it is complemented according to the students' needs with in-person tutoring sessions.

Virtual Pedagogical Model: a Proposal Designed for an English as a Foreign Language (EFL) Course

Structure and Scheme

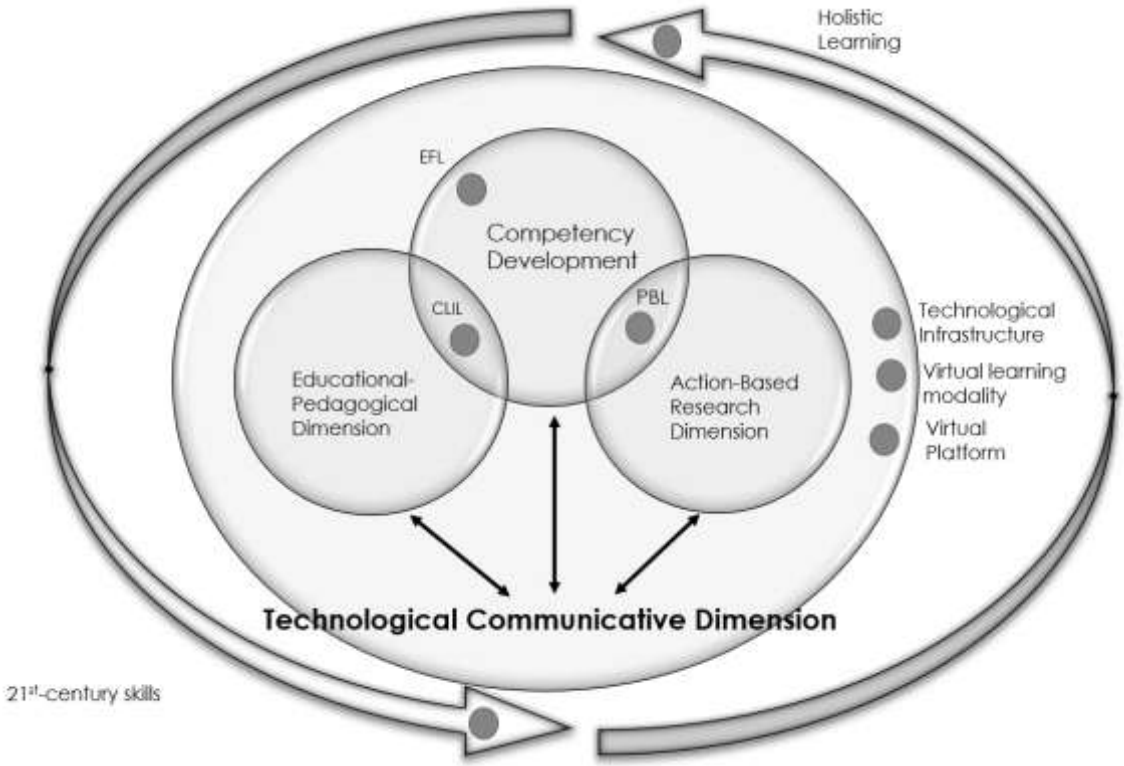
This proposal for a virtual pedagogical model represents the transition from theory to practice. Once some theoretical tenets have been analyzed, the design of a virtual pedagogical model is considered and proposed, serving as a conceptual reference in the development of content in a foreign language-oriented class grounded in psychological, sociological, communicative and ecological models of the learning process (Ortega & Romero, 2018). The aim is to move from the analysis and reflection of the educational process to a phase of design and implementation of the pedagogical proposal. In this model, the technological pedagogical content knowledge (TPCK) framework is used as a reference. This framework is aimed at teachers with the intention of reinforcing four elements originating from the use of information and communication technology (ICT): technology, pedagogy, content and knowledge.

The model's structure is further strengthened by frameworks that explain how to coherently integrate content, pedagogy, technology and interaction. This allows the model emerging in this study to work not only as a technical proposal but also as a formally grounded pedagogical model aligned with principles widely validated in literature.

In contrast to the TPCK model, ours centers on the integration of dimensions that are properly articulated and implemented in the use of a virtual class, which serves as a theoretical reference during its development, and not on the knowledge or skills a teacher needs to master to integrate ICT into teaching. It is structured as follows (Figure 2).

Figure 1

Virtual pedagogical model proposal: TEACH



Note. Own elaboration.

The model TEACH (technological-communicative, educational-pedagogical, action-based research, competency development, and holistic learning) consists of five dimensions that are articulated for a virtual course with specific characteristics. The central dimension is the technological-communicative one, as the course is virtual, and technology and its branches serve as the main foundation. The technological-communicative dimension, in turn, encompasses the educational-pedagogical dimension, the competency development, the action-based research dimension, and the holistic learning dimension; and it is the transversal axis of the model, as it is directly related to each of them, thus creating a bidirectional work symbiosis.

For this reason, a relational process is presented, beginning with the largest dimension, and passing through the educational-pedagogical component where students are provided with the foundation and the way classes are planned. Once students understand the pedagogical bases on which the work will be done, the course content is introduced, and its execution is presented, following the approach for how the content will be addressed throughout the semester, both academically and socially.

All dimensions, including the technological-communicative one, are framed within a key factor of this research: 21st-century skills, which learners today must possess and which, due to the nature of these skills, encompass all the components outlined in each dimension and the course.

Technological-Communicative Dimension

In this dimension, a learning management system (LMS) called Modular Object-Oriented Dynamic Learning Environment (Moodle) was used to take advantage of the integrated package of resources it contains, which promotes interactivity among students (Ontoria, 2014). Some of these resources are text page editing, website page editing, linking to files, linking to web pages, and designing of quizzes, surveys, assignments, forums, chats, glossaries and wikis. These components were used as part of the technological infrastructure, establishing communication channels.

In a virtual context, it is crucial to establish communication processes as they promote personal and learning development, where participants engage in an instructional situation to understand the content (Fathi et al, 2023; Hwang & Lee, 2024). In other words, communication is central to the teaching and learning process, where participants reach knowledge through technological mediation and interaction (Fathi et al., 2023; Hwang & Lee, 2024).

From the perspective of technological mediation, Vargas et al. (2024) argued that technology transforms learning when it redefines opportunities for interaction, collaboration, autonomy and analysis. This underscores the centrality of this dimension in the TEACH model as the central axis for all communicative and pedagogical processes.

Educational-Pedagogical Dimension

This study aimed to teach students how to be active participants in their process, drawing from their educational experiences and social reality to intervene, innovate, propose, collaborate, manage, decide and share their learning. Furthermore, another construction used for the creation of the model was the incorporation of the CLIL model in its development, given the methodology's conditions that allow the student to redirect learning processes for the appropriation of knowledge through content (Camacho et al., 2024; Eggen & Kauchak, 2015; Yaguara et al., 2022).

The CLIL approach is grounded on socio-constructivist principles that promote meaning-making through authentic tasks, scaffolding, and the functional use of language (Coyle et al., 2010). Similarly, Becker & Park (2011) showed that integrated approaches strengthen deep learning by integrating cognitive and linguistic domains; therefore, it was adapted into the TEACH model.

Action-Based Research Dimension

For this model, a co-investigative dimension fosters social learning and cooperation through experiential dialogue, allowing individuals and organizations to collaboratively explore crises and conflicts (Aguirre, 2018; Valenzuela, 2008). This dimension also enables shared understanding and the production of social knowledge, fostering transformative change in uncertain situations (Aguirre, 2018; Valenzuela, 2008).

Moreover, there is a correlation between the educational-pedagogical dimension and the action-based research dimension. In this convergence, the PBL is positioned; and, due to the nature of this methodology, students will be able to showcase their social skills to problematize both individually and with others, thus contributing to the socio-constructivist theory and other elements that facilitate working with peers.

PBL is grounded in socio-interactionist theories that posit that knowledge is constructed through the shared analysis of real-world situations (Walker & Leary, 2023). Regarding this, Sinaga (2021) explained that structured collaboration facilitates the collective construction of knowledge, which supports the articulation between action research and PBL within the TEACH model.

The reason these two dimensions converge is based on the way researchers integrated CLIL with PBL, as the former is an integration of content and language (Yaguara et al., 2022), and that is how the content was worked and supported largely under the principle of problem-based learning.

Competency Development Dimension

This dimension is designed to address the needs of EFL students concerning the development of English language skills and their intercultural competencies. The Cultural Awareness course aims to consolidate the language and improve linguistic and intercultural skills through the input and output that students work with. This dimension

is closely related to the technological-communicative dimension, since the student must possess knowledge related to technology and communicative resources, as they must collaborate with peers to communicate specific tasks with the teacher.

In this convergence, EFL is positioned. The content is developed in English, and the virtual meetings established will also be conducted in this language. The reason these two dimensions converge is based on the way researchers integrated CLIL with EFL and competencies, as CLIL is an integration of content and language, and thus language-related issues were worked on and supported in the essence of teaching and learning English (Camacho et al., 2024; Eggen & Kauchak, 2015; Yaguara et al., 2022). Therefore, the proposed activities are designed so that the student consolidates receptive skills (listening and reading) and productive skills (speaking and writing) to develop them through their use of the target language.

Competency-based education requires the use of knowledge in authentic situations. Ponomariovié et al. (2025) pointed out that competencies are developed when students articulate knowledge, skills and attitudes to solve real-world tasks. Likewise, Rahman & Pandian (2018) demonstrated that CLIL-EFL integration in virtual environments fosters both linguistic and intercultural competence, thus reinforcing the relevance of this dimension in the TEACH model.

The relationship between the tenets of CLIL, PBL and EFL. The relationship lies in the fact that the content, which is primarily aimed at developing students' 21st-century skills, is worked on and supported by PBL, so there is a combination of CLIL with the PBL methodology, and the language component is oriented towards EFL.

Holistic Learning Dimension

The holistic learning dimension encompasses the other four dimensions due to its integrative nature; it relates to the learning outcomes expected from the model's implementation, aiming for students to develop skills across all dimensions in a comprehensive manner. These include content mastery, language proficiency, competency development, technological skills related to ICT use, and 21st-century skills. Learning within this dimension should seamlessly integrate all aspects that constitute the proposed model.

Holistic learning integrates multiple dimensions, such as cognitive, emotional, social and technological. Miller (2019) claimed that this approach strengthens comprehensive educational processes in which learners integrate multiple ways of knowing and acting. Accordingly, the holistic dimension of the TEACH model brings together the expected outcomes of the other dimensions and provides overarching coherence.

Finally, 21st-century skills represent a central axis of the TEACH model. Thornhill-Miller et al. (2023) described them as a set of required competencies for navigating technological and challenging environments: critical thinking, creativity, communication, collaboration, and digital literacy. Therefore, these skills function as a cross-cutting component that integrates and guides all dimensions of the TEACH model.

Method

This study adopts a qualitative reflective action-research approach. A distinguishing feature of this approach is the self-reflection of the professionals or teachers involved in the proposed practice (Paukner & Sandoval, 2018). As noted by Botella and Ramos (2019), although various action research models exist, they all rest on the cyclical process of action-analysis-reflection-action. As support, the study also included statistical support based on categorical data collected from the participants.

The study was conducted in three distinct phases. During the first phase, the TEACH model was developed alongside the instruments necessary for observing the outcomes of its implementation and for monitoring students' processes and interactions throughout the study. The researchers then validated these instruments with the input of field experts and colleagues, which prompted various enhancements to the instruments. In the second phase, the model was implemented in the Cultural Awareness course, involving a total of 22 pre-service teachers. Simultaneously, in the third phase, the researchers collected and analyzed data; following the principles of action research, this process enabled thoughtful reflection on the students' learning experiences, which in turn facilitated improvements in the model's design.

Context and Participants

The study was conducted at a private university in Bogotá, Colombia, with pre-service teachers of a virtual undergraduate program in languages with an emphasis on English, and they were located across various regions of the country. The participants

were enrolled in a Cultural Awareness course where 20% of the work is synchronous and 80% is asynchronous. Initially, the study aimed to include 50 students; however, a sample of 22 students was selected to complete the instruments. This non-probabilistic and intentional sample was chosen based on the researchers' goal of maximizing the model's contribution to the development of cultural course content and 21st-century skills competencies, as well as reinforcing their language proficiency in EFL. The students demonstrated varying levels of English proficiency, according to the Common European Framework of Reference for Languages (CEFR). The student population was predominantly female, with 70% women and 30% men, and their ages ranged from 20 to 35 years. Notably, some of the students were already working as teachers in schools.

Data Collection Instruments

When designing the instruments, the researchers drew upon the framework established by Méndez and Peña (2007), ensuring alignment between the research problem, study objectives, research question, and justification. The first instrument employed was learning analytics, which focuses on optimizing learning and educational environments through the measurement, analysis and reporting of data. Learning analytics was selected for this research due to the necessity of monitoring users' interactions in the virtual learning environment. These data enabled an evaluation of the consistency of the pedagogical model in its implementation to better support students' needs, and an assessment of the effectiveness of the learning paths from the resulted statistical information.

The second instrument comprised Likert-type surveys, supplemented with open-ended questions. The first survey comprised 19 questions regarding the procedural process, while the second comprised 20 questions that encouraged students to elaborate on their learning experiences and provide justifications for their responses (López & Fachelli, 2016).

The third instrument included interviews, designed to capture the participants' perspectives, including their feelings, thoughts, emotions, beliefs, opinions, meanings and actions (Schettini et al., 2017). The researchers conducted two semi-structured interviews: one was conducted midway through this implementation and consisted of

seven questions, while the other was given at the conclusion and comprised eight questions.

For this study, observations were conducted during synchronous classes to assess students' performance on specific tasks and their overall performance. It is worth noting that observations and learning analytics were combined to report the findings. Each of these instruments was crafted to contribute to a comprehensive understanding of the research question and the study's objectives. These instruments were designed and selected to ensure internal consistency with the qualitative nature of the study, while allowing for analytic depth and pedagogical insight.

Pedagogical Design

The implementation of the Cultural Awareness course followed a series of structured steps to ensure pedagogical coherence and an effective instructional approach. First, a content-focused subject delivered in English was selected, and its syllabus was redesigned based on the principles of CLIL. Content topics were chosen and aligned with current global issues, and the course was structured around the development of 21st-century skills. The course lasted four months, divided into three terms with an equal number of weeks and instructional hours. Four core tasks were designed: discussion forums, assignments, reading quizzes, and film forums. All tasks promoted the use of the four language skills (listening, speaking, reading, and writing); however, two tasks emphasized receptive skills while the other two focused on productive ones. The course was uploaded on the Moodle platform and guided through a combination of synchronous and asynchronous classes, applying PBL principles. The study was implemented following the pedagogical guidelines of the TEACH virtual model, specifically designed for this course. Over a period of two years, the model underwent four iterative cycles in which it was implemented, evaluated, and refined until reaching its final version, which was then used in the last implementation cycle.

Data Analysis

Following the data collection and the determination of data saturation, the researchers opted to employ thematic analysis to explore the data, adhering to the model proposed by Naeem et al. (2023). This process incorporated both deductive and inductive coding of the collected data, along with the triangulation of all designed instruments. The systematic

coding process was succeeded by comparative and axial analysis, which facilitated the identification of concepts and subthemes that contributed to the emerging themes of the study. Ultimately, the researchers established these emerging themes as the categories of the study.

Likewise, when creating the categories, the researchers focused on identifying the qualities and characteristics of the data, noting both differences and similarities. Data exhibiting similar characteristics were grouped into the same category and analyzed using the applied instruments. Furthermore, the three main categories share the findings.

Results and Analysis

This research demonstrates the impact of the TEACH model; and, in this section, the authors show the results after examining data collected, based on the categories that emerged.

Language or Content? Rethinking Learning Objectives in English Classes through Learner-Content Interaction

Students argued that a content-based approach to language learning promotes meaningful learning rather than focusing on structural or formal aspects. They pointed out that this approach intuitively and naturally improves their productive language skills, such as speaking and writing. This approach has allowed them to develop critical thinking and reflection in terms of their learning process, and to consider the target language as a tool in learning rather than as a final goal of the process. Similarly, this approach allowed them to develop other skills simultaneously, including language awareness, knowledge acquisition, vocabulary development, and explicit language skills, as reported in similar studies by Doiz et al. (2014), Lasagabaster and López (2015) and Berdiyeva (2024).

> LH: When we (our team) realized that grammar, fluency, and pronunciation were not the criteria for evaluation, we focused more on the content. We didn't worry about how we were going to say it, how we were expressing ourselves, or whether we were speaking well. I got much less frustrated. [Int[3], Nov of 2022]

[3] To protect the sample's confidentiality, the participants will be identified using the first letter of their first name and the first letter of their last name. For instance, Diego Florez as DF. Int. = interview; Obv. = observation.

AR: It works for me that the teacher evaluates based on content because it gives me more freedom and allows me to make mistakes. Sometimes, when we're in a class where we're evaluated more on language use, that fear of making mistakes makes us make even more mistakes. [Int, Nov of 2022]

Students reported that focusing on the content reduced their anxiety and allowed them to express themselves more easily. They felt motivated to speak freely without fear of error, knowing that their performance would be assessed by their contributions to the class. Consequently, they overcame the barriers in communication, anxiety or nervousness – also reported in different studies (Dalton-Puffer et al., 2009; Lasagabaster & Doiz, 2016), since the participants accepted errors as part of a process that was not intended to be punitive.

Students' performance directed across three evaluations for two distinct scenarios that emerged from two criteria considered in the assessment section: scenario 1 implied the identification and use of relevant information presented in oral presentations; scenario 2 implied the development and fulfillment of parameters task in oral presentations. The data indicates a significant improvement in student performance across scenarios 1 and 2 throughout the three academic terms. Specifically, there were notable increases of 34.78 % and 29.08 % in the "excellent" and "very good" performance categories, respectively. Conversely, the "good" performance category experienced a decline, suggesting a transition towards higher levels of achievement, with decreases of 21.27 % and 17.39 % in scenarios 1 and 2, respectively. Furthermore, the lowest performance category, "did not meet criteria," also exhibited a minimal reduction in the number of students failing to meet the criteria.

Previous results illustrate this positive progression, highlighting a marked shift from the "good" and "did not meet criteria" categories to the "very good" and "excellent" classifications as observed in the learning analytics. This contrast between the two scenarios emphasizes the efficacy of targeted interventions in enhancing students' oral presentation competencies [Obs, Aug-Nov of 2022].

Participants claimed to have improved their performance in productive skills through assertive and relevant interventions in class. They stopped considering mastering the target language as a final goal and instead focused on other aspects, such as critical and reflective thinking, deepening of content understanding, acquiring higher levels of knowledge, assertive communication, and building self-confidence. This shift allowed

students to stop thinking inductively about formal language resources and adopt a deductive approach, focusing on competencies rather than structures.

LL: When we are stuck in the structuralism and formalism of the language, it feels as though we are limited. It's as if we're told, "You have to think this way and express yourself this way". The way we work in this class is useful because it gives us the freedom to expand, to think, and not to focus on how we are going to say it, which is the limiting factor. It gives us the opportunity to use our cognitive abilities and allows us to think even in our mother tongue. [Int, Nov of 2022]

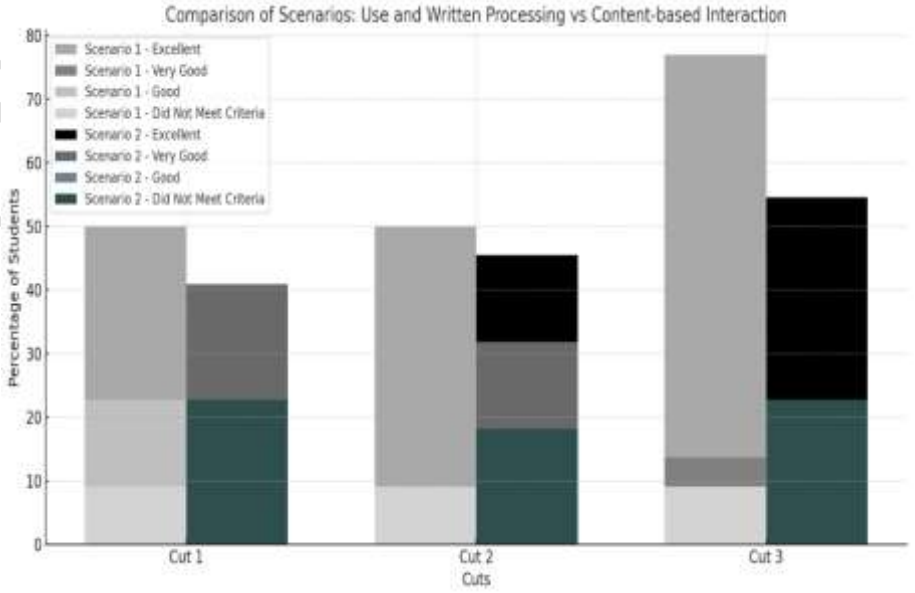
Similar to previous studies, the use of the mother tongue fostered students' fluency, confidence in the interaction and critical thinking events (Littlewood & Yin, 2011; Berdiyeva, 2024), all without the pressure of being graded based on formal and strict language use. This approach decreased their concerns about mistakes while promoting linguistic skills in English.

GR: I prefer being assessed on content rather than language use because I feel more comfortable and freer to express myself. In other classes, worrying about mastering the language correctly limits me. But when I focus on content, I can express myself better, and I end up producing more English. [Int, Nov of 2022]

So, authors could establish that this approach enabled students to use the language for meaningful communication, both oral and written.

Graph 1

Learning analytics: Written processing of information vs. content-based written interaction



Note. Own elaboration.

Graph 1 illustrates the performance comparison across three evaluation cuts for two scenarios: scenario 1 implied the use and written processing of information; scenario 2 implied content-based written interaction. In scenario 1, there was a marked increase in students achieving the "excellent" rating of 27 %, underscoring an enhanced capacity for processing and engaging with written materials. The elimination of the "good" category, declining 22.73 %, indicates that students have progressed to higher performance tiers. Scenario 2 reflects an increase in the "excellent" category of 18.19 %, signaling improved interactions with content-based written assignments. The modest increase in the "good" category and the absence of students in the “did not meet criteria" category points to overall academic success.

The findings indicate effective pedagogical strategies leading to enhanced learning outcomes, as evidenced by a greater number of students achieving elevated performance levels by the third assessment period. Graph 1 illustrates student engagement dynamics when prioritizing content comprehension. The absence of a language-focused interaction pressure appears to have alleviated student anxiety, allowing them to review and refine their submissions before finalization [Obs, Ago-Nov of 2022].

Using English supports lifelong learning, allowing students to use the language naturally and spontaneously, with a more realistic approach to language development (Flores et al., 2018; Ortiz & Navarrete, 2024), accepting errors as part of the process. A learner who thinks in terms of content expresses ideas based on content, while a learner focused on language formalism expresses limited ideas that conform to structural constraints.

Focusing on the learning objective led to positive results through learner-content interaction. This shift creates opportunities for critical thinking and communication, framed within 21st-century skills (Dede, 2010; Binkley et al., 2012; Hilton & Pellegrino, 2012; Lamb et al., 2017), such as conceptualization, reasoning, comprehension and negotiation to facilitate knowledge construction and production expressed linguistically (Li, 2023; Ling, 2023). Thus, language is seen and used as part of the learning process, not as the goal itself. These findings highlight the importance of teaching approaches: when content is valued more than linguistic precision, English transforms from being the

objective to serving as a means for learning, contemplation, and engagement. This viewpoint transforms the language classroom into a setting for critical thinking, cultural awareness, and significant communication, rather than one that emphasizes mostly language accuracy.

Learning Through Interaction: Fostering Research Skills via a Structured Procedural Process

PBL represents a form of real interaction that facilitates learning the target language through its use. Students are confronted daily with decision-making, interactions, socializing, mediating, and correcting (Ali, 2019); essentially, they develop habits in the foreign language just as they do with their mother tongue. As a result, constant interaction with problematic situations encourages students to develop linguistic skills (implicitly) and communicative skills (explicitly), since students are engaged in argumentation and in-depth cognitive analysis (Othman & Shah, 2013; Ansarian & Mohammadi, 2018; Kök & Duman, 2023). Essentially, they simulate their daily life, fostering higher cognitive aspects in English.

When the participants were told about PBL methodology 87.50 % of the students agreed that problem-solving is useful for them. The reasons students provided were varied; among them, they mentioned: “Problem-solving is part of our daily life in any context. Also, it enriches our vocabulary and places us in a less structured context, where communication is of the utmost importance” [survey excerpt, Q7, Oct of 2022]. Similarly, team formation fosters real interaction and communication, making them possible.

LR: I like teamwork and working in groups because you must listen to others, which is very important. Also, while we’re practicing our English, there is a student-to-student and student-to-teacher relationship where a classmate who knows more than you can explain things, and you might learn from that. [Int, Nov of 2022]

This approach also gave students the opportunity, while interacting, to teach their classmates; and, by doing so, they also learned. This created a win-win relationship, where all team members benefited while developing life-long learning skills such as authentic integration of skills and processing of information from varied sources (Sultana & Zaki, 2015; Ali, 2019). Moreover, approaching content from a problem-centered perspective generated spaces for discussion where students reconsidered their positions or strengthened their arguments to validate them in front of others.

When solving a problem as part of an activity, it requires me to do extensive reading to come up with the correct solution. At the same time, I take note of the points I find interesting and then focus on my response, whether oral or written. [Survey excerpt Q. 6, Oct of 2022]

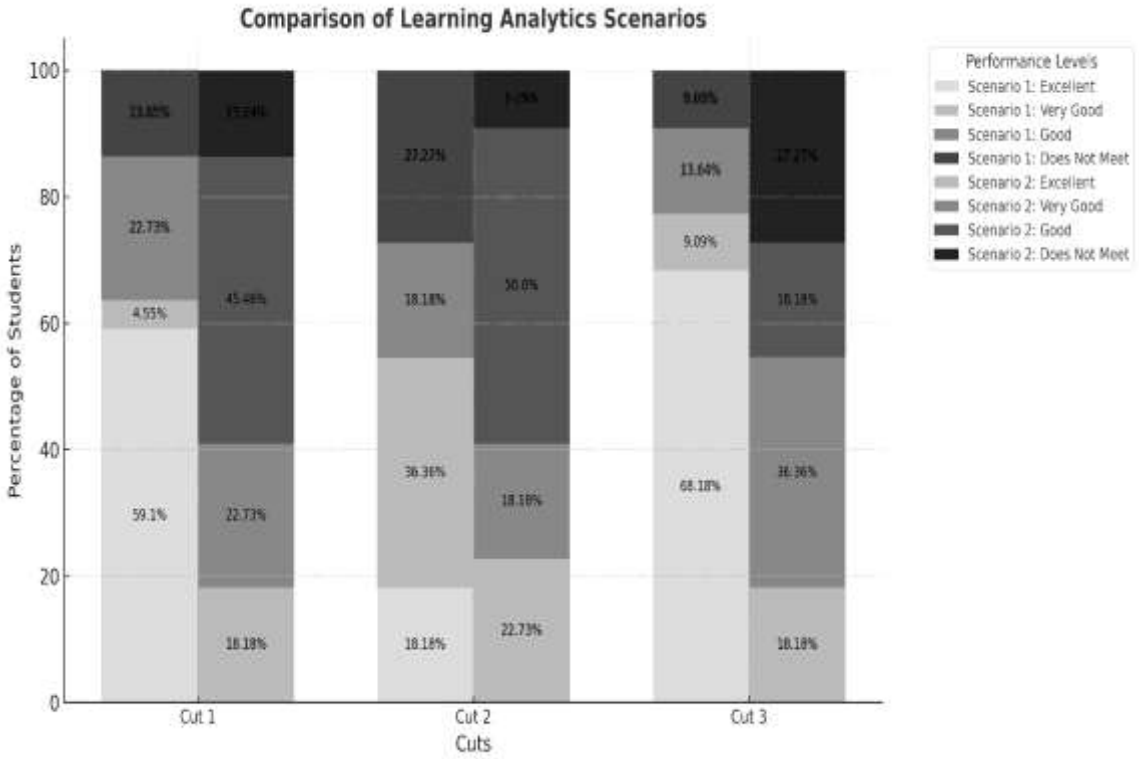
Additionally, authors designed tasks in which students used all skills, not as the class's main purpose, but as a tool within the class. Therefore, this approach is both inductive and natural, so students can focus on a process and not on the formal use of the language. It is worth noting that, throughout this process, students had the opportunity to develop essential skills: problem-solving, decision-making, and social and communicative skills, all framed within the context of 21st-century skills (Wolff, 2007; Dede, 2010; Binkley et al., 2012; Hilton & Pellegrino, 2012; Lamb et al., 2017).

Similarly, the procedural behaviors required students to review the resources used in class multiple times. However, the constant review of the content, and even consulting other sources of information, involved a continuous process of interaction with the materials and other resources in English. "What I do is focus on what is being asked, using the material you offer us. Based on that, I investigate more about the topic, gather other readings, and then prepare myself to participate" [Int, Nov of 2022]. Throughout the course, students had the opportunity to consult sources beyond those provided in class, helping to establish a learning path focused on their active participation and ensuring assertive contributions.

Indeed, question 6 from survey 1 showed that 75 % of the students consult additional sources of information, thus reinforcing their interaction with content and beginning to develop research behaviors.

Graph 2

Learning analytics: Followed instructions



Note. Own elaboration.

Moreover, Graph 2 provides a comparative analysis of two scenarios emerged from two criteria considered in the assessment section: scenario 1 implied the instructions followed and the problem solved in the written forums; scenario 2 implied the instructions followed and the oral assignments' problem solved.

Scenario 1 shows consistent improvement in student performance over time. Initially, 59.09 % of students were rated as "excellent", while 22.72 % did not meet the criteria. However, by the third term, 63.64 % reached the "excellent" level, with only 9.09 % not meeting the standards. In contrast, scenario 2 exhibited more fluctuations in performance. In the first evaluation, a significant portion of students (40.91 %) was rated as "excellent" and 36.36 % as "very good". In the second evaluation, performance improved, and no students fell into the "did not meet criteria" category. Instead, in the third evaluation, there was a slight decline in the number of "excellent" ratings, and an increase in the "did not meet criteria" category to 31.82 %. This suggests that, while some students initially performed well, others struggled to maintain their progress.

Under this virtual pedagogical model, the ability to refer to and consult multiple sources of information fosters in students investigative and co-investigative skills, which

could be defined as an advantage of the method. In agreement with some previous studies, students became more analytical and sought out information, incorporating the practice of refining knowledge into their learning process (Rieh et al., 2016; Presnukhina et al., 2020).

Therefore, by researching additional resources, students expanded their vocabulary range, diversified their input, and encountered more complex material. This allowed them to delve deeper into the use and practice of the language without limiting themselves to the sources they initially had. Their performance reflected their ability to receive, process, reformulate, manipulate, transform and reproduce information according to the developed procedure and the interactions resulting from that process.

Therefore, the problem-based learning approach not only fosters linguistic development but also enhances a more critical, autonomous learner, capable of engaging with knowledge from multiple perspectives and applying it meaningfully in real world contexts.

Effective Task Design: Integrating Language Skills, Critical Thinking, and Contextual Learning for Meaningful Student Engagement

The use of material resources, the selection of content, and the planning and design of tasks, some more complex and extensive than others, had a positive impact on this virtual learning environment.

When students were told their preference between long or short input activities in questions 8 and 6 from survey 2, it was evidenced that 50 % of students exhibited indifference toward the length of the input activities. Instead, their priorities were weighed toward factors such as the relevance of the content and the alignment with their proficiency levels. “I don’t prefer either. I think the activities should be intermediate; not too short, because they don’t challenge me, but not too long either, because they can become tiring” [survey excerpt, question 9].

BV: When the product of the task involves a skill, I don’t manage well, it challenges me and makes me study more. It’s not about whether the output is short or long, but about the skill being developed according to the task. [Int. excerpt, Q.6]

The development of thinking around content, argumentation, and deep, analytical reflection processes were stimulated. On the other hand, the structure of the tasks –both

in terms of input and output– contributed to the development of language skills. Since the tasks were content based, they played a fundamental role.

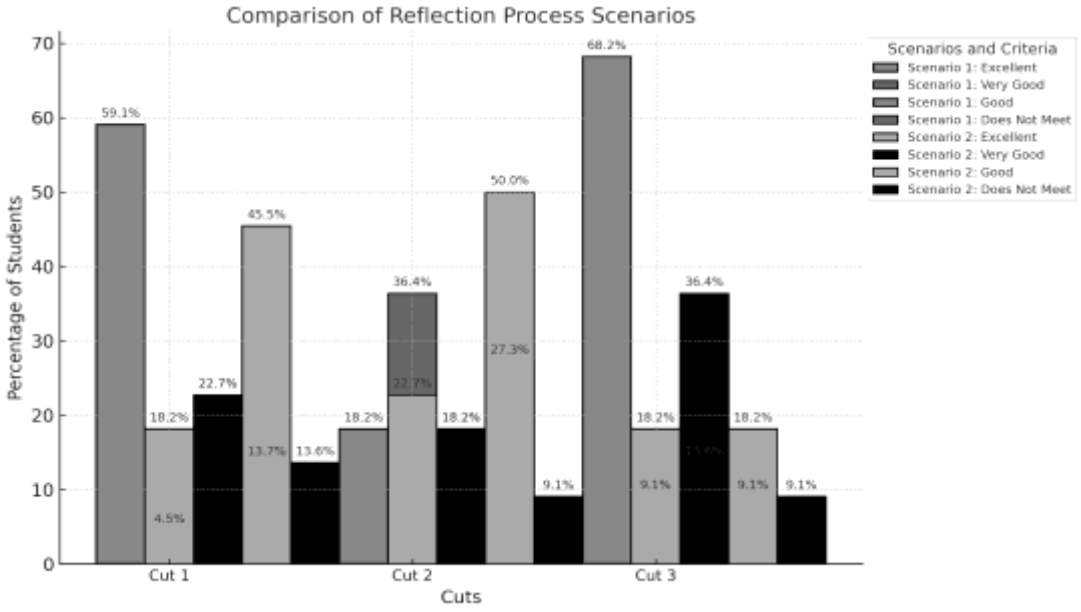
Regarding the design of input activities for their learning (question 12 from survey 2), students recognized the significance of the activities presented on the virtual platform for their learning outcomes, with 71.4% expressing total agreement and 28.6% strong agreement. “Everything is important when you’re learning, and the interesting thing about this class is that it’s not the typical one where they tell us about a decontextualized world –a bit from here, a bit from there–, but rather something that feels linear and logical” [survey excerpt, question 12].

Additionally, it is important to note that the inputs were diversified in terms of English accents and cultures, which had an even greater impact on the students by broadening their horizons, preventing them from being solely exposed to a single source.

Likewise, when the participants were told if the complex activities challenged their English language (question 7, survey 2); 66.7 % of the students agreed that input tasks integrating two or more skills challenge them to improve their language level. Likewise, a total of 28.6 % completely agreed with this statement, while the remaining 4.8 % disagreed.

Graph 3

Learning analytics: Reflection process



Note. Own elaboration.

Graph 3 presents the development of students' critical thinking and reflection skills in two scenarios: written forums and oral presentations, across three evaluation periods. In Scenario 1, where students engaged in a written forum-based reflection process focused on content and critical thinking, notable improvements were observed. The percentage of students achieving "excellent" increased from 59.09 % in the first assessment to 68.18 % in the third. Conversely, scenario 2, which involved oral presentations, demonstrated more modest progress. The percentage of students achieving "excellent" remained stable between 18 % and 22 %, while the "very good" category increased from 22.73 % to 36.36 %, reflecting improved oral reflection skills.

In this sense, task design should strike a balance: it should not be too short, because this would limit students' opportunities to practice and make good use of resources; nor too long, as this could cause them to lose focus and complete the task for the sake of compliance (Tomlinson, 2008; 2023; Ajoke, 2017; Rao, 2019).

The materials encouraged the constant use of English, which positively impacted students' performance throughout the course. Furthermore, it is important to highlight that, through the way the activities were presented (via the platform and the TEACH model), participants had the opportunity to work on and develop their information, media and ICT literacy, all of which are integral components of the 21st-century skills (Dede, 2010; Binkley et al., 2012; Hilton & Pellegrino, 2012; Lamb et al., 2017).

Conclusions and Implications

The TEACH virtual pedagogical model enhanced English learning by enabling the early establishment of learning objectives. Content-based lessons fostered critical thinking, analytical reasoning, and reflective practices while promoting effective communication. By emphasizing non-linguistic skills, the model helped students overcome communication barriers and improve interaction.

The key to the success of this pedagogical model is the symbiotic relationship between its five dimensions, which need to be mutually reinforced in terms of coherence and cohesiveness. To be effective, the TEACH model requires a structured interaction system among students, peers, teacher, content, and resources, all aligned with the objectives of the learning and communication process. These interactions enabled language development through real use and the improvement of 21st-century skills.

The TEACH model fostered the development of investigative and co-investigative skills, enabling students to engage in deeper procedural learning and effectively interpret linguistic input. Students also exhibited linguistic improvements through implicit learning, driven by consistent and rigorous target language use, even when linguistic development was not the model's main goal.

Natural and authentic language use encouraged spontaneous communication, avoiding the rigid constraints of traditional instruction. Integrating language use within a culture course enhanced students' comprehension and application of content, shifting the focus from language mechanics to meaning-driven communication.

For further research, one recommendation is to integrate a competency-based assessment system that evaluates both content and language, as students expressed a clear need for linguistic feedback. Also, working groups should be limited to three members and remain dynamic to ensure effective communication. Strong commitment from both students and teachers is essential. Future adaptations should incorporate scaffolding strategies to support motivation and participation throughout the process.

This model can be adapted to teach any language, as it integrates content and language effectively. Adjusting task design and assessment strategies to different contexts may enhance its adaptability and scalability.

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