THE USE OF CONTENT AND LANGUAGE INTEGRATED LEARNING METHOD IN TEACHING ENGLISH TO ESP LEARNERS

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Abstract - This article examines the key features of using the CLIL (Content and Language Integrated Learning) method as an innovative approach in teaching English for Specific Purposes (ESP). It outlines the main advantages of integrating content and language learning and provides a rationale for the implementation of CLIL as a means of optimizing the higher education teaching process. Additionally, the study substantiates that CLIL contributes to the development and enhancement of students' competence in professional communication in a foreign language. The research findings suggest that the application of CLIL technology enables students to advance their learning to a higher level, while teachers, in turn, gain more effective opportunities for teaching foreign languages.

Keywords - English for Specific Purposes (ESP), English for Academic Purposes (EAP), English for Professional Purposes (EPP), Content and Language Integrated Learning (CLIL), Content, Communication, Cognition, Culture

I. INTRODUCTION

In today's rapidly developing world, staying informed about events occurring both globally and within one's specific field is essential for carrying out professional activities and, most importantly, for becoming a highly qualified specialist. A modern university graduate is not only a knowledgeable individual but also someone capable of analyzing various sources of information, selecting the most relevant data, synthesizing and interpreting it, engaging in critical thinking, identifying key issues, and continuously enhancing their expertise throughout their professional career. In the current era of rapidly accelerating information flow, quickly and accurately identifying relevant data has become increasingly challenging. This task is even more complex when a significant portion of the available information is in a foreign language, requiring comprehension before it can be effectively utilized. Therefore, in addition to foreign language proficiency, a deep understanding of subject-specific concepts is essential.

A specialist's professional competence must encompass not only a thorough understanding of the target language's cultural aspects but also familiarity with the specific concepts and terminology of their field to effectively conduct business communication. This integration of linguistic and professional knowledge is a key factor in facilitating continuous development through knowledge and experience exchange. Proficiency in one or more foreign languages enhances not only a specialist's academic and professional qualifications but also their overall expertise and career prospects.

It is undeniable that English is now regarded as a universal core skill, with individuals learning it to meet their personal and professional needs. However, merely knowing how to communicate in a foreign language has never been sufficient for those aspiring to become leading experts in their field. Each professional domain has its own terminology, language, and distinct cultural framework. Therefore, specialists aiming to work abroad or collaborate with international partners must develop not only general communication skills in a foreign language but also the ability to engage in professional discourse within their specific area of expertise.

II. METHODS

Higher education institutions are increasingly emphasizing a professional approach to foreign language instruction. Specifically, foreign language curricula are being adapted to include terminology, concepts, and topics relevant to students' fields of study. Linguistics educators bear professional responsibility for ensuring that students acquire the necessary language skills. The emergence of new teaching approaches and methodologies prompts continuous reflection on ways to optimize classroom instruction and the overall learning process. This, in turn, plays a crucial role in developing students' competence in professional communication in a foreign language.

Professional foreign language communication competence is generally understood as a combination of knowledge about one's native and foreign language cultures, the ability to comprehend and correctly use professional vocabulary, the application of cultural awareness in specialized communication contexts, and the capacity to engage effectively in intercultural professional interactions with foreign colleagues. In this regard, it is becoming increasingly

popular the use of English as a Medium of Instruction (EMI) and English for Specific Purposes (ESP).

English for Specific Purposes (ESP) is a targeted approach to language learning that is based on the individual needs of students. It focuses on analyzing the specific purpose for which a student is learning English and the context in which they will be using it. In other words, ESP is designed to meet the real communicative and professional demands of learners while considering the linguistic environment they will encounter in their future careers.

ESP is aimed at mastering specialized English related to a particular field of knowledge or professional domain, as well as the language used in specific situations. This distinguishes it from General English, which focuses on broader linguistic skills necessary for everyday communication in a wide range of contexts.

While students learning English for Specific Purposes should have a foundational language competency and a general understanding of the language, ESP primarily emphasizes specialized aspects of English proficiency that are critical for their academic or professional activities.

Learners following the ESP (English for Specific Purposes) methodology have a clear linguistic objective, which is typically closely linked to their career aspirations, academic goals, or professional activities. They usually possess a foundational knowledge of English and demonstrate a high level of motivation, as they recognize the practical relevance of the material being studied.

ESP is divided into two key areas: English for Academic Purposes (EAP) and English for Professional Purposes (EPP), each of which focuses on developing language skills within a highly specific context [5].

Since the late 1980s, the field of English for Specific Purposes (ESP) has been actively developing, adapting flexibly to market demands. ESP courses are offered both within university programs for international students and as independent commercial courses. These courses aim to develop professional English communication skills in specialized fields, including: English for Legal Purposes (for lawyers), English for Chemical Engineers, English for Doctors, English for Air Traffic Controllers, English for IT Specialists and many others. The target audience for such programs includes university students and certified professionals who require advanced skills in professional communication in a foreign language.

Within the framework of ESP (English for Specific Purposes), various methods and technologies are employed for foreign language instruction, one of which is CLIL (Content and Language Integrated Learning). This professional approach reflects a clear, purpose-driven interest in learning a foreign language and is based on the principle of integrating content and language instruction. CLIL is not a completely new form of foreign language learning; rather, it is an innovative technology that synthesizes and enhances various pre-existing methods that have been used in practice.

The CLIL concept was first defined by David Marsh (University of Jyväskylä, Finland) in 1994. In his book, he describes CLIL as "a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language" [2].

In other words, the learning process emphasizes not only the subject content or the language itself but also their interconnection. A subject teacher utilizing CLIL technology integrates foreign language materials into the lesson context. Conversely, a foreign language teacher applies CLIL by incorporating subject-specific texts in the target language, aligning language instruction with the content of other academic disciplines studied by students.

People have lived in multilingual societies for centuries. By the late 19th century, wealthy families often sent their children abroad to study and learn foreign languages, or they invited foreign language tutors to educate their children. Through this process, children not only acquired grammatical rules but also developed the necessary vocabulary. As a result, they learned the language alongside various subject areas, gaining exposure to different fields through both structured instruction and everyday communication.

Bilingual education was initially implemented in countries with multiple official languages. For instance, in Luxembourg, German has been taught from primary school, while French is introduced in secondary education.

The principle of learning a foreign language through subject content was introduced by two renowned educators. The first, John Amos Comenius, a Czech pedagogue, emphasized the importance of efficiency in foreign language learning. The second, Matthias Bel, viewed language as a tool for mastering academic subjects within the curriculum.

2.1. Research design

The research employed both quantitative and qualitative analysis methods to ensure a comprehensive evaluation of CLIL’s impact. The

study was conducted in two phases with a group of undergraduate chemical engineering students:

1. *Pre-experimental phase (Control Group Assessment):*

Students were taught using traditional methods (lectures in native language with minimal English exposure).

Their baseline proficiency in technical English was assessed through comprehension tests and writing assignments. Oral presentation and discussion skills were evaluated through structured interviews.

2.2. Experimental phase (CLIL Implementation)

The CLIL approach was introduced, integrating technical content with English-language instruction.

Students engaged in reading scientific articles, writing summaries, participating in discussions, and solving technical problems in English. Assessments were conducted using standardized tests, rubric-based evaluations, and observational data.

2.3. Data Collection and Analysis

The following evaluation methods were used to measure students' progress:

Pre- and Post-Test Scores: Standardized reading comprehension and technical writing tests were conducted before and after the experiment.

Rubric-Based Writing and Speaking Assessment: Essays, reports, and oral presentations were graded based on linguistic accuracy, technical accuracy, and coherence.

Survey and Feedback Analysis: Students' perceptions and confidence in using English for technical discussions were gathered through Likert-scale surveys and open-ended interviews.

Statistical Analysis: A paired t-test was conducted to determine the statistical significance of score improvements between the control and experimental groups.

2.4. Quantitative Analysis

Prior to the research, all students had a B1 English proficiency level. They were divided into two groups: an experimental group and a control group. Over a period of four months, their proficiency levels developed differently.

The experimental group, which was taught using the CLIL methodology, showed significantly higher improvement compared to the control group. The percentage increase in each language skill (listening, writing, reading, and speaking) was as follows:

Skill	Experimental Group (%)	Control Group (%)
Listening	58%	32%
Writing	26%	30%
Reading	60%	35%
Speaking	57%	33%

Table 1: The increase in language skills in percentage

The overall improvement in the experimental group (56%-60%) was significantly higher than in the control group (30%-35%). Statistical analysis (e.g., t-test) confirmed that the difference between the two groups was statistically significant ($p < 0.05$).

2.5. Qualitative Analysis

The qualitative data was gathered through student feedback, classroom observations, and teacher reflections. The key findings are as follows:

- Engagement & Motivation: Students in the experimental group demonstrated higher motivation and active participation due to the real-world relevance of content.
- Comprehension & Retention: CLIL-based lessons helped students understand complex chemical engineering concepts while improving their language proficiency.
- Confidence & Communication: Experimental group students showed greater confidence in discussing technical topics in English compared to the control group.
- Critical Thinking Skills: Through problem-solving and discussion-based activities, students in the CLIL group developed better analytical and critical thinking abilities.

The study highlights that integrating CLIL methodology into ESP classes significantly enhances language proficiency and technical understanding for chemical engineering students. The combination of language and content learning proved to be more effective than traditional ESP instruction.

III. RESULTS

The CLIL (Content and Language Integrated Learning) methodology is widely implemented in primary and secondary education, particularly in Canada, the United States, and Europe. Canadian language programs and Britain's LAC (Language Across the Curriculum) programs have played a fundamental role in shaping CLIL. According to David Marsh, prior to 1994, the introduction of CLIL in Europe was largely driven by political significance and closely linked to the advancement of the educational sector. Within the European Union, increasing social mobility necessitates a high level of foreign language competence. The goal of education in this context is to nurture more competent students by embedding effective teaching methodologies. By the 1990s, CLIL had become a widely recognized term across Europe, referring to an integrated teaching approach where foreign language learning is combined with subject content.

Furthermore, the CLIL methodology can be implemented using two distinct approaches,

depending on the balance between content and language focus:
Content-driven education – This approach prioritizes the study of key terminology and concepts relevant to a specific discipline, placing less emphasis on general communicative vocabulary or terminology from other fields.

Language-driven education – This approach primarily focuses on general foreign language learning, while paying comparatively less attention to subject-specific concepts.

The integration of content and language instruction within CLIL is guided by the 4C framework, developed by Professor D. Coyle. This model conceptualizes effective CLIL methodology as a synergy of four key components: content, communication, cognition, culture.

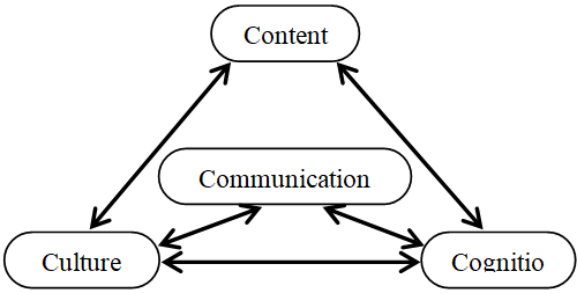


Figure 1. The components of the CLIL method

D. Coyle represented the 4C framework in the form of a triangular pyramid, with each peak symbolizing one of its components. Interestingly, the Communication component is placed at the center of the pyramid. This signifies that the other three components—Content, Cognition, and Culture—must be realized through communication [2].

Each component of the CLIL methodology's core principle plays a crucial role:
Content refers to the acquisition of knowledge and the development of professional communication skills, enabling students to deeply comprehend subject-related texts and discourse. This component focuses on enhancing learning through the integration of discipline-specific subject matter. Essentially, CLIL allows students not only to learn a language but also to use it as a tool for acquiring new subject knowledge. For example, in teaching a foreign language within a geography curriculum, CLIL enables students to learn vocabulary related to climate zones while also analyzing maps, comparing different regional climates, and drawing conclusions.

Communication focuses on improving overall language proficiency. This component emphasizes learning a foreign language through interaction, utilizing specialized terminology and promoting fluency in communication. It is important to note that interaction in an educational setting plays a crucial role in language acquisition. Therefore, communicative tasks should dominate classroom activities to encourage both spoken and written communication in the target language.

This aspect of CLIL is oriented towards practical language use rather than isolated grammar exercises. Students learn the language through real communicative tasks, such as debates, discussions, collaborative projects, and presentations, rather than through traditional grammar drills.

For example, in a chemistry lesson, students might discuss the impact of environmental pollution using subject-specific terminology and expressions. This approach not only enhances language competence but also helps students develop the ability to express ideas at an academic level.

Cognition is a key component related to developing thinking skills necessary for focusing on both content and language, as well as various methods of processing knowledge. This component requires the use of analytical and critical reading, tasks for identifying key ideas, making comparisons, predictions, and cause-effect relationships, among others.

The Cognition component aims to enhance critical thinking, analytical abilities, and cognitive skills. Students do not simply memorize information; instead, they analyze, compare, solve problems, and draw conclusions. CLIL fosters intellectual development by integrating subject learning with meaningful language use. For example, in a physics course, students not only learn the names of Newton's laws in English but also conduct experiments, interpret results, and formulate conclusions in the foreign language.

Culture is a fundamental component of CLIL, as it fosters intercultural knowledge among students. Understanding the characteristics, similarities, and differences between cultures helps learners socialize more effectively in today's multicultural environment, develop a deeper understanding of their own culture, and encourage its preservation and growth.

CLIL expands students' worldviews and promotes intercultural awareness by introducing them to various traditions, scientific achievements, and ways of thinking from different countries. This approach enhances tolerance, global thinking, and communication skills with representatives of other cultures. For example, when studying the history of the English language, students analyze the influence of Latin, French, and Germanic languages, as well as

historical events that shaped the development of English vocabulary.

IV. DISCUSSION

In many cases, teaching a foreign language as a separate subject proves to be largely ineffective. Therefore, greater emphasis should be placed on an integrated approach that combines subject content and language learning.

The widely recognized advantages of the CLIL methodology include the following:

The necessity of learning subject content – Using meaningful content encourages students to enhance their foreign language proficiency.

A lexical approach – This allows learners to identify and analyze language structures and lexical units, such as during reading or listening activities, which in turn helps expand their vocabulary based on subject-specific terminology.

Immersion in the language environment – Students process large amounts of information and language materials (e.g., reading texts, listening to topic-specific content, participating in discussions), while also becoming more aware of their own learning progress.

The significance of subject content – In other foreign language learning methodologies, content is often used to illustrate language structures, whereas in CLIL, subject content is developed alongside the target language.

Development of cognitive skills – The ability to perceive and process information improves as CLIL students engage in more cognitively demanding tasks. According to cognitive learning theory, individuals retain information more effectively when their brains are actively engaged in problem-solving.

Enhancement of higher-order thinking skills – CLIL fosters abilities such as analysis, synthesis, summarization, classification, evaluation, comparison, hypothesis formulation, prediction, and generalization.

Development of cognitive academic language proficiency (CALP) – This includes essential language skills required for negotiations with foreign partners and reading specialized literature in the target language.

Improvement of communication skills – CLIL enhances students' ability to engage in both spoken and written communication across a wide range of general and specialized topics.

Increased intercultural awareness – Students gain insights into diverse international perspectives related to the subjects they study.

Formation of meaningful and relevant interaction skills – When students focus on communicating the meaning of what they are learning, they are likely to acquire the language more effectively than through a purely grammar-focused approach [2].

From a practical perspective, the implementation of CLIL strategies is achieved through subject and language-integrated instruction.

Overall, students enrolled in ESP courses incorporating CLIL demonstrate a higher level of linguistic competence compared to traditional language-learning approaches. By using authentic materials and real-life professional scenarios, learners develop both general language skills and domain-specific vocabulary. For instance, students in "English for Chemical Engineering Purposes" courses gain a more precise understanding and application of chemical engineering terminology while also improving the communication skills necessary for chemical processes settings.

The advantages of using the CLIL method in ESP

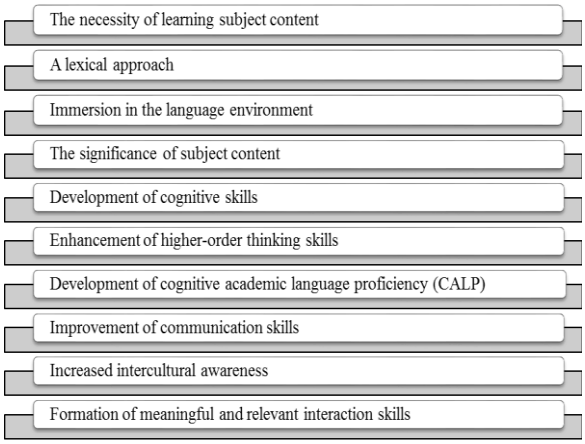


Figure 2. The advantages of using the CLIL method in ESP

One of the key advantages is the high level of motivation among students. CLIL ensures meaningful learning by integrating subject content with language acquisition. This practical approach increases students' confidence in using English in professional contexts, as they engage with relevant case studies, discussions, and collaborative projects. For example, learners in "English for Business Purposes" courses actively participate in role-playing exercises, negotiations, and simulated presentations.

Another noteworthy aspect of CLIL-based ESP instruction is the development of higher-order

thinking skills, including critical analysis, synthesis, and problem-solving. Since students process both subject content and language simultaneously, they enhance their deep learning abilities, which are crucial for their professional fields. For instance, in "English for Engineering Purposes," students improve their ability to analyze technical documents and discuss engineering solutions effectively in English.

Despite its advantages, the integration of CLIL into ESP courses presents certain challenges. These include the need for well-trained instructors proficient in both language teaching and subject-specific knowledge, as well as the availability of appropriate instructional materials. Teachers often require additional pedagogical training to effectively merge linguistic and content-based teaching methodologies. Furthermore, assessment strategies must be adapted to accurately evaluate both language proficiency and subject knowledge.

To maximize the potential of CLIL in ESP, it is essential to develop comprehensive training programs for educators, create tailored learning materials, and refine assessment frameworks. Future research should focus on longitudinal studies to assess the long-term impact of CLIL-based ESP instruction on professional performance and workplace communication.

V. CONCLUSIONS

We often underestimate our ability to learn languages, even though the human brain provides immense cognitive resources for this process. When students learn subject content in a foreign language, they enhance their cognitive processes, develop the ability to express their thoughts in multiple languages, and find it easier to grasp scientific concepts. This is because they acquire terminology while simultaneously connecting it to relevant scientific concepts [3].

To unlock the full potential of CLIL, a comprehensive methodology is needed – one that overcomes the traditional dualism between textbooks and language teaching. Moving from knowledge transmission to knowledge creation requires students not only to acquire knowledge in their native language but also to construct meaning using multiple languages.

The 4C model, the core methodological principle of CLIL, provides a solid pedagogical and methodological foundation for effective and sustainable teaching and learning. By implementing CLIL strategies, linguist-educators can enrich their lessons with authentic materials, explore topics from diverse cultural perspectives, foster real communication and interaction among students, develop subject-specific skills and creative thinking and support the spontaneous and meaningful application of knowledge.

The true potential of CLIL can redefine our perception of foreign language education and directly contribute to our key objective—developing students' communicative competence in a foreign language for professional purposes and preparing them for subject-specific communication in an international context.

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