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**DEVELOPING SKILLS IN READING AND CRITICALLY
ANALYSING ENGLISH-LANGUAGE RESEARCH ARTICLES IN
MEDICAL EDUCATION THROUGH THE CLIL APPROACH**

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Abstract. This paper explores the potential of Content and Language Integrated Learning (CLIL) for developing medical students' ability to understand and evaluate scientific information in English. On the basis of an analysis of international research, it proposes a three-stage instructional framework for working with clinical research articles and separate assessment criteria for subject knowledge and language performance. The framework comprises pre-reading preparation, in which a clinical problem is introduced and key terms are explained in context; reading and evidence analysis, in which students identify the IMRaD structure of the article and apply the PICO framework; and post-reading communication, in which groups present the principal finding in plain English and write a short evidence summary. The proposed framework is a theoretical and methodological recommendation and is not based on outcomes measured in an experimental group taught by the author.

Keywords: CLIL, medical English, research articles, academic reading, critical analysis, evidence-based medicine, integrated learning, IMRaD, PICO.





INTRODUCTION

Since a substantial proportion of international medical research is published in English, students need more than knowledge of medical terminology: they must also understand the structure of research articles, the interpretation of evidence and the limitations of conclusions. When conventional foreign-language lessons focus mainly on translation and vocabulary exercises, students may struggle to transfer knowledge that is not firmly linked to clinical content to other academic subjects. Adapting Content and Language Integrated Learning to medical education is therefore a relevant pedagogical objective (Coyle, Hood & Marsh, 2010:1).

In CLIL theory, language and subject content are treated as simultaneous learning objectives (Coyle, Hood & Marsh, 2010:41-43). A CLIL initiative in a Colombian medical programme involving bilingual presentations of research articles demonstrated students' interest in this form of integration (Cabrera Vega, Moreno Gómez & Arcila Ramírez, 2022:215-234). Teaching materials and scaffolding nevertheless need careful planning in groups with varying levels of English proficiency (Alanazi & Curle, 2024:1364860).

The aim of this paper is to describe elements of a CLIL model that uses English-language medical research articles to develop reading comprehension, the identification of scientific evidence and the ability to draw meaningful conclusions. The methodological basis consisted of a review of academic and pedagogical sources, a comparison of text-based learning tasks and instructional design (Muthukumar et al., 2025:e65779). The proposed framework is a theoretical and methodological recommendation; it is not based on outcomes measured in an experimental group taught by the author.

MAIN PART



The proposed CLIL lesson has three consecutive stages. The first is pre-reading preparation: the teacher introduces a brief clinical problem, activates students' prior knowledge and explains eight to ten key terms in context. For example, when reading an article on arterial hypertension, terms such as "risk factor", "outcome", "sample", "intervention" and "association" are taught together with their scientific functions. The objective is not to translate every word but to prepare students to identify the article's central research question (Coyle, Hood & Marsh, 2010:36).

The second stage is reading and evidence analysis: students identify the IMRaD structure of a research article - introduction, methods, results and discussion - and extract the research question, the sample, the methods and the principal findings. The PICO framework - patient or problem, intervention, comparison, outcome - can be used to formulate a focused clinical question. Groups prepare brief answers in English to questions such as "What was compared?", "What outcome was measured?" and "Can the conclusion be generalised?". This approach links scientific information to professional contexts rather than relying solely on vocabulary memorisation (Cabrales Vega, Moreno Gómez & Arcila Ramírez, 2022:215-234).

The third stage is post-reading communication: each group presents the article's main finding in plain English within ninety seconds, while another group asks a question about a strength of the evidence and at least one limitation. Finally, each student writes an evidence summary of eighty to one hundred words. These tasks integrate reading, speaking and writing around a shared clinical topic (Muthukumar et al., 2025:e65779).

Assessment should distinguish between two dimensions: content criteria, namely correctly identifying the research question, distinguishing findings from limitations and avoiding overgeneralised conclusions; and language criteria, namely using terminology appropriately in context, maintaining logical



coherence and employing precise academic expressions (Coyle, Hood & Marsh, 2010:112). A study by Muthukumar and colleagues on medical English courses suggests that structured instructional content can support multiple language skills (Muthukumar et al., 2025:e65779). Research on the challenges experienced by students studying medicine in English further emphasises the need to balance linguistic demands, scientific content and learning support (Alanazi & Curle, 2024:1364860).

CONCLUSION

CLIL-based activities centred on research articles can connect English learning with medical reasoning and the critical appraisal of evidence. Lessons organised around the sequence "problem - text - evidence - presentation" should establish explicit criteria for both content learning and language use (Coyle, Hood & Marsh, 2010:41-43). Future research could evaluate the effectiveness of the model through pre- and post-tests, rubrics for research-article comprehension and assessments of written evidence summaries (Cabrales Vega, Moreno Gómez & Arcila Ramírez, 2022:215-234; Alanazi & Curle, 2024:1364860).

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