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Pregledni rad Review paper

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# **PROFESSION-ORIENTED CLIL TEACHING:** LANGUAGE ACTIVITIES FOR GEOLOGISTS

The paper deals with establishing a connection between the labor market and English language teaching for geologists using the CLIL method. This means that the traditional method of learning the language for specific purposes is improved by a more intensive linguistic approach through the 4Cs model (content, cognition, communication, and culture) where academic teaching tries to be intimately connected with real life and the corresponding profession. In achieving that goal, the work offers teaching activities that combine academic and practical knowledge, which are adapted to the current moment and created according to the needs and expectations of users. For the sake of clarity, the paper is divided into the following parts: introduction, the logic of the connection between teaching geology and the labor market, the first part addresses the combination of geology, language skills, and occupations, the second part offers concrete examples of activities and their application in teaching, and finally, the concluding considerations where the importance of autonomous learning as a prerequisite for quality lifelong growth and self-fulfillment is highlighted. Without the ambition to reach the full scope of the described intention in the first year of study, our goal is for students to notice the value and connection between knowledge and the profession so that learning from the first lecture can be meaningful, motivated, and personalized.

Key words: CLIL; the English language activities; geology; labour market; profession

## INTRODUCTION

The vocation acts as both a magnet to attract and as glue to hold. Such an organization of knowledge is vital, because it has reference to needs: it is so expressed and readjusted in action that it never becomes stagnant. No classification, no selection and arrangement of facts, which is consciously worked out for purely abstract ends, can ever compare in solidity of effectiveness with that knit under the strew of occupation. (Dewey 1916: 310)

Today, language teachers are under no illusion that it is enough to simply offer interesting or entertaining teaching content that is attractive to all students and relevant only from a linguistic point of view. When it comes to geology courses, professors are increasingly faced with demands that come not only from the world of science but also from the labour market. Said differently, in modern reality, university professors must "produce" such graduates who will readily and successfully fill vacant jobs, who are open to fast and constant learning of everchanging professional terminology and growing colloquial vocabulary, who have a good command of foreign languages, who are "team players", who are able to easily connect with other colleagues in various professional situations, and who are persuasive in negotiation situations. This requires the language teaching to be designed in such a way that not only encompasses academic and theoretical knowledge but also communicative, creative, and proactive skills and competences.

Connecting academic teaching to the profession in real-life situations, offers a focus that allows students to organize information in a more solid and lasting way than in any abstract system. Also, students learn best when they are considered capable of developing their abilities and solving problems, that is, when they are not engaged in mere imitation and repetition. Also, learning through professions favours opening and considering many questions related to all issues of the career field, both from the present and the past. Finally, studying professional aspect of content is convenient for more active learning, lecturers design such hands-on activities that lead students to independent and analytical thinking.

"Integration that is rigorous, authentic, and sustained is much more difficult than most of its advocates imagine. Constructing a rich, complex, cumulative integrated curriculum that

simultaneously helps students master an academic discipline and apply it in a coherently defined domain demands time, expertise, and resources that are beyond the reach of most teachers." (Hoachlander 1999: 2-3)

In that regard, there are several ways to solve the requests that arise before the language teacher:

- Didactic materials that introduce the concepts of the specialty should be completely clear and unambiguous.
- It is necessary for the language teacher to narrow down the linguistic field and prepare activities from specific specialty or speech situation.
- Learning should be purposeful and personal application of knowledge is of primary importance.
- It is desirable that students get to solve practical tasks in which they apply theoretical knowledge from textbooks to situations from the real world and life.
- Students are encouraged to use the help of a language teacher during the implementation of tasks, but it is of primary importance that purposeful learning and a stimulating environment encourage the student to work independently and creatively.

According to Pink's research (2009), what really motivates us is grouped around three things: autonomy, mastery, and purpose. The author believes that motivation is based on the desire to be responsible and that control over one's task, time and technique is the way to that destination (p. 107). Successful learning does not imply high-stress situations, neither does it imply watering down the standards by saying "well done", for this is not feedback. Ideally, the best learning state is the one that involves mild stress. In such a state, students have the basis or foundation to be successful, they get a nudge when necessary, and create the self-system of interrelated attitudes, beliefs, and emotions.

Despite the educational vision of creating linguistic and mental experiences for all students that underpins this type of learning, some of its elements remain open to criticism from the outset. First, this type of approach is open to the question of whether career concerns are prioritized before students discover or create their identity and relationship to the world. Should we first allow students to find meaning and beauty in geology and the purpose of life that surpasses the exclusively materialistic world, that is, the materialistic world of occupation, is an important question to be considered. Also, appropriate criticism can be directed at limiting ourselves only to the present-day world, occupations that are current and where there are real employment opportunities.

Another important aspect of the potential shortcoming of this kind of teaching is that, in order to teach professionally and according to the current market standards, university teachers themselves must be aware of the demands of such goals:

1. Modern professional teacher must leave behind the stereotypes, clichés and myths of traditional educentic teaching that may hinder professional development.

2. The professional evolution of teachers is not only spontaneous in nature but is increasingly becoming a prerequisite for external control by the public and the market.

3. The professional subjectivity of teachers often blurs the criteria of success and effectiveness of their own professional actions, which can lead to professional aberration. Instead, proper training and adaptation to the labour market is a reasonable setting for personal development and consistent and professional updating of various aspects of knowledge and practice.

# 1. GEOLOGY STUDIES AND LANGUAGE SKILLS THROUGH CLIL

The content of learning in foreign language classes should be such that it has a professional and communicative orientation in which, in addition to the acquired knowledge, the student is realised in personal expression and presentation. Each student's interest in a certain subject will expand when they clearly understand the prospects for using the acquired knowledge, when this knowledge and competencies will be able to increase their chances of success in the future. CLIL method is an integrated content and language learning approach in which an additional language is used as a medium for content instruction. Content learning means teaching that encourages active interaction and thinking about the use of language in real-life rather than educational situations. Successful learning leads to diverse classroom practice, authentic language situations, active communication, thinking skills and cognitive challenges (Coyle et al. 2010; Genesee 1987; Marsh and Wolff 2007; Marsh and Marshland 1999; Coyle 2005; Dalton-Puffer 2007).

It is important to emphasise that the definition and interpretation of the CLIL concept by its users and advocates indicates that its features are explained in different ways and that there are many modalities. As Coyle, one of the most prominent proponents of CLIL, points out, there is no single approach, no single theory of CLIL (Coyle et al. 2008: 101). What has been adopted as a generic definition is that this dual concept is based on the integration of content and foreign language, which, along

with communication and culture (in practice they are often called 4C, due to the initials of the mentioned terms in English (content, cognition, communication, culture) achieves: multiple advances in knowledge; cognitive processes of complex thinking; dynamic interaction with all contextual content and collaborators or respondents; high degree of deepened intrinsic and extrinsic motivation.

Through training in the content of CLIL we try to provide our students with the conditions of such language habits that they will learn to use and improve, realise in numerous ways all through their career and life. In light of the language itself, it must be said that language teachers represent the portal of knowledge since all we know is always used, translated, and uttered by means of words.

Although the modern market of textbooks for general English courses is very well supplied, textbooks for English for geology or mining based on the CLIL method are non-existent. In this sense, it is very important to make a clear distinction between ESP and CLIL since there may well be ESP textbooks for English for geology and mining, CLIL textbooks, however, are extremely scarce, if present at all. Their production is probably not profitable for large publishing houses, and since this assessment can take many years, language teachers reluctantly become textbook authors themselves. When it comes to CLIL, as mentioned above, the creation of textbooks seems to be a last resort, but the only way to ensure quality work, attainment of cognitive literacy and linguistic growth which is always a new and unrepeatable experience.

For a student who has decided to pursue a career in geology, he/she can choose from the following categories:

- 1. Corporations focused on mining, engineering, petroleum, and environmental protection;
- 2. Government positions among local, regional, or state institutions and organizations, national research, planning and environmental protection, geological institute, etc;
- 3. Non-profit organizations;
- 4. Academic positions at faculties and universities.

## 2. EXAMPLES OF TWO CLASS ACTIVITIES

As Zeigler (2007: 420) claims, there is an increasingly present need for a modern engineer to possess, in addition to solid professional knowledge, skills that are crucial in performing work, especially in critical situations. According to Santi & Higgins

Astrogeologist or planetary geologist	Glacial geologist	
Crystallographer	Hydrogeologist	
Engineering geologist	Mineralogist	
Environmental consultant/geologist	Mining geologist	
Ecologist	Natural history or natural science museum curator	
Engineering geologist	Palaeontologist	
Environmental consultant/geologist	Palynologist	
Exploration geologist	Petrologist	
Geochemist	Petroleum geologist	
Geological surveyor	Production geologist	
Geology professor	Sedimentologist	
Geomorphologist	Soil scientist	
Geophysicist	Soils engineer	
Geotechnical engineer	Seismologist	
Geotechnical project/design engineer	Stratigrapher	
Gemmologist	Volcanologist, and many more	

(2005: 152), soft skills are increasingly implemented in teaching such as: adaptability, problem solving, interaction skills with transnational cultures, etiquette, etc. Santi and Higgins state that hydrogeology and engineering geology courses should include new skills to make students multimodally literate, and thus introduce multiliteracies as an integral part of linguistic and non-linguistic expression.

Immediately after in-depth activities related to reading and vocabulary, it is necessary to focus on personalization, directing knowledge and activities towards the personal needs and capabilities of students, opportunities for improving one's own knowledge and applying it in potential real-life circumstances.

Since in CLIL we are a facilitator, not a teacher, and we are not limited by the physical classroom, we strive to meet the needs of our students, to follow them, not to be followed by them. In this situation, we may need to talk to colleagues in the field who can provide additional information relevant to this specific area of knowledge and who can provide appropriate materials or personal experience to better

adapt the teaching to the students, allowing to be carried along the activity and simultaneously being in charge.

Traditional teaching methods students are presented with are potentially at odds with the styles used in the modern CLIL classroom. Students come from an educational tradition where information is not presented to be challenged, personalized and further developed, but to be absorbed.

CLIL materials do more than just communicate facts and figures. They tend to promote critical and creative thought, ignite discussion and develop learner autonomy. At the same time, CLIL teaching materials help students to recognise the limitations of their current thinking and learning. Avoiding clichés, quality CLIL learning tends to progressively promote students' sense of engagement in their own profession and country, supranational organisations and other groupings. For students to develop professional language proficiency a systematic effort is required, we as teachers need to resort to task reduction in order for students to attain both long-term and shortterm language outcomes.

As examples of such CLIL tasks, we provide three possible activities, out of the pool of many which teachers can create on their own based on the material provided.

The first suggested activity can be a T-chart, which students are given to fill out on their own, as a form of eliciting and activation task. Through this, the students are actively engaged from the onset and motivated to further explore the material which is to be discussed in class. In this specific case, the students need to list the pros and cons of a certain profession, regardless of whether they have any prior knowledge of it. In this way, what is accomplished is the development of the following:

- Cognitive skills
- Social skills
- Critical thinking
- Learner autonomy
- · Practical application of their own experiences and knowledge

T CHART - <u>PROFESSIONS</u>		
Pros	Cons	
•	•	
•	•	
•	•	
•	•	
•	•	

Example of a T-chart

Upon completing the T-chart, the students are encouraged to share their ideas with the class, which fosters a productive debate and discussion of their opinions, resulting in a well-rounded activity which has prepared them for the upcoming segment of actually reading the description of the profession they had discussed. Students are offered a description from the Dictionary of occupational titles, in which they can read about the specificities of a given profession, its functions and scope. Here, for the first time, students contextualize academic knowledge into the real world of work, about which the student knows either very little (from parents or family members) or almost nothing. The students are equipped with the necessary vocabulary to fully understand the reading segment, as well as being given a wide range of opinions enabling them to independently interpret the material.

The following part addresses the practical application of what was developed through the T-chart activity, and that is the real-life use of what was learned. Namely, having gained sufficient knowledge of what a certain profession entails, the students are now directed to apply that knowledge through a life-like scenario and discuss the different aspects connected to it.

In the material provided, the students can see a real-life internship/volunteer/job vacancy call according to which they are to decide whether it would be suitable for them as members of a certain profession. They are motivated to critically assess the requirements and job expectations of the call and determine whether it is in line with what they have learned about the profession in question and discuss in which way,

if any, it would be useful for them to partake in the programme, all the while bearing in mind the traits of the profession they are exploring.

The basis of the activity is a reading – speaking task, fully focused on active student participation. The following provides an overview of the elements covered in such an activity:

Outline	A reading/speaking activity based on a specific topic			
Thinking skills	Evaluating, reasoning, identifying, giving opinion			
Language focus	Speaking about a specific topic, using CLIL and using specific language for being indirect and polite			
Language skills	Reading, speaking			
Time	10 minutes			
Level	B2 or above			
CONTENT	COGNITION	COMMUNICATI ON	CULTURE	
<ul> <li>Highly specific CLIL</li> <li>Creating a language database for critically assessing, determining and discussing relevant terminological units and topics</li> </ul>	<ul> <li>Verbal and visual interaction</li> <li>Academic language</li> <li>Practical application of the acquired vocabulary and CLIL units</li> </ul>	<ul> <li>Precise and clear transmission of the desired message</li> <li>Appropriate use of target - specific language</li> </ul>	<ul> <li>Business culture</li> <li>Since each profession is tied to a certain niche group, this exercise allows for the development of cultural adaptation and insights into various aspects of different careers</li> </ul>	

Short-term language results in this case are connected with long-term results, which cognitively make it easier for students to identify the challenge of knowledge with the challenge of a profession. As Cummins (2000: 586) warns, many language activities can inadvertently trap students in simplified and facilitated learning and tasks, where they will not be able to learn either the language or the content they need.

The third part feeds and develops on the previous two, demonstrating the obligatory interconnectedness and purposefulness of a CLIL activity. Namely, the final part focuses on the students' active application of what was developed through the previous two activities, by giving them an opportunity to further explore and assess the additional aspects and possibilities of a certain profession and if the

profession offers equal opportunities for both sexes, working and living conditions, nutrition, and the like. Before or while working on this activity, students could do an exercise to research the cost of living in certain environments in which they would like to find employment, and perform and organize the selection of sources for a specific profession. Students can decide whether they want to work in pairs or individually.

The purpose of each CLIL activity is to create fertile grounds for student initiative and original input through a priori providing them with the tools necessary for that to be accomplished. In that sense, it fosters student independence and personal choice, proving the intricate connection between the CLIL classroom and real life. What is more, the last part offers an opportunity for the students to fully exploit the potential of talk and to visualize a possible lifelike situation, for which they would be fully prepared.

These activities are examples of what CLIL is all about and that is to treat the lesson plan as a living, organic document and allow it to be adapted, which means that the student are equal owners and creators of the syllabus, alongside the institution and the teachers.

The given examples draw students' attention to the identification or examination of personal opinion and knowledge within the profession relevant to the topic of the lesson, in this case a geotechnician and palaeontologist. What we gave as suggestions for CLIL activities based on the teacher-tailored material provided above are a part of a non-exhaustive list that can potentially be supplemented within numerous language exercises to be created, altered and prepared by the teachers themselves, in order to cater for the specific needs of each student group. All the while focusing on adherence to the CLIL method.

As was stated, the teacher is given free reign over the types of exercises they wish to incorporate in their classroom, which in turn not only motivates the teacher's originality, creativity and independence, but also serves as a reminder that the teachers themselves need to be actively engaged in the matter they are teaching. Short-term language results in this case are connected with long-term results, which cognitively make it easier for students to identify the challenge of knowledge with the challenge of a profession. As Cummins (2000: 586) warns, many language activities can inadvertently trap students in simplified and facilitated learning and tasks, where they will not be able to learn either the language or the content they need.



Example of a teacher-tailored "Profession" activity



Example of a teacher-tailored "Profession" activity

Many scholars increasingly see the teacher as a mediator who gradually relinquishes control over the learning process to the students themselves, allowing students to develop autonomy, active engagement, and intrinsic motivation (Holec 1981; Marzano 1998; Veenman et al. 2002; Little 2008; Kohonen 2009; Edmondson 2009; Knouzi et al. 2010; Oxford 2011). In the field of learning, it is not the most important thing to define what students should think, do, or feel. On the contrary, Knouzi et al. (2010) believe that students should independently set and develop a form of "private speech" in order to be able to successfully manage joint learning and thinking about the language. Good language learners, as Edmondson (2009) concludes, are active learners who look for language patterns and regularities on their own. This way, students can independently monitor their progress and analyse language as a means of communication, following and developing metacognitive, metasocial and metaaffective strategies over time, eventually taking full responsibility for their own learning (Oxford 2011 :5).

In order for students to reach cognitive fluency and avoid cognitive load, the last part of this activity focuses primarily on providing support in dealing with the field of career analysis, but through intimate and humane inclusive reviews. In its 2007 report "Understanding the Brain, the Organization for Economic Co-operation and Development" claims that for educational purposes the analysis of fear and stress is especially important because they dramatically reduce analytical capacity, while, in contrast, positive emotions open the door to the brain (OECD 2007: 154). In an authentic and humane learning environment, students feel that positive emotions have the potential to enhance learning and that students are free to experiment with their language and feelings.

# **3. CONCLUSION**

The design and implementation of the offered activities according to the CLIL method are based on the acquisition and application of knowledge in conditions that may potentially be expected and needed in the labour market. The teacher's role here, in addition to the organization of the course, creation of teaching materials and goals, requires that the activities, coupled with a good atmosphere for learning and assessment of progress relate to a unique motivation for the needs of career development and progress. The challenges of teachers specific to this type of work are based on insufficient preparation, ineffective teaching strategy, lack of theoretical basis and personal training. Apart from competence in English, challenges related to students include the lack of ideas on how to effectively use knowledge for future specific purposes of profession and career, because they do not see fully the relevance of what they learn in both mother tongue and foreign language in the first year of their academic studies. Based on the premise that all learning begins in the self-system of the brain, we strive to use classroom processes that help foster self-efficacy, a positive climate, and adequate challenge to keep our students motivated to learn. In the specific examples of offered language activities related to the potential professions of our students, we tried to create an environment with moderate stress and high challenges.

Also, we believe that in accordance with modern research, the possibility of autonomous learning, and finding a purpose in work through the tools offered, provides the work structures necessary for our students to successfully master not only academic tasks, but also those from the real world of business and creativity. With the offered CLIL materials, we tried to ensure a novelty in the classroom that would avoid stereotypes, encourage new learning and thinking skills, develop the ability to apply and maintain a multiple focus not only on content, language and learning duties, but also on conceptualizing the development of personal and quality future of every single student. At the basis of all of this is the teacher's belief that all of their students will be successful in this undertaking and that this belief is made clear and visible to every student.

# BIBLIOGRAPHY

- 1. Cummins, Jim (2000) *Language, Power, and Pedagogy: Bilingual Children in the Crossfire*, Multilingual Matters, Clevedon
- 2. Coyle, Do (2005), "Developing CLIL: Towards a Theory of Practice", *APAC Monographs*, 6, 5-29.
- 3. Coyle, Do, Nancy van Dusen-Scholl, Nancy Hornberger (2008), "CLIL a pedagogical approach from the European perspective", in: *Encyclopaedia of Language and Education*, Springer
- 4. Coyle, Do, Philip Hood, David Marsh (2010), *Content and language integrated learning*, CUP, Cambridge
- 5. Dalton-Puffer, Christiane (2007), *Empirical Perspectives on CLIL Classroom Discourse*, Peter Lang, Frankfurt
- 6. Dewey, John (1916), Democracy and education, Cosimo Classics, New York
- 7. Dictionary of occupational titles, https://occupationalinfo.org/ (09. 09. 2023)
- Edmondson, Willis (2009), "Language Awareness", in: K. Knapp, B. Seidlhofer, H. Widdowson (eds.), *Handbook of Foreign Language Communication and Learning*, Mouton de Gruyter, London, 163-190.

- 9. Genesee, Fred (1987), *Learning through Two Languages*, Newbury House, Cambridge, MA
- 10. Marsh, David, Bruce Marshland (1999), *CLIL Initiatives for the Millennium*, Continuing Education Centre, University of Jyväskylä
- 11. Marsh, David, Dieter Wolff (2007), *Diverse Contexts-Converging Goals: CLIL in Europe*, Peter Lang, Frankfürt
- 12. Marzano, Robert J. (1998), *A Theory-Based Meta-Analysis of Research on Instruction*, Aurora, CO Mid-continent Regional Educational Laboratory
- 13. Hoachlander, Gary (1999), "Integrating academic and vocational curriculum Why is it so hard to practice?", *Centerpoint*, No. 7, ERIC Document: ED433454
- 14. Holec, Henri (1981), *Autonomy and Foreign Language Learning*, Pergamon Press, Oxford
- Knouzi, Ibtissem, Merrill Swain, Sharon Lapkin, Lindsay Brooks (2010), "Selfscaffolding mediated by languaging: Microgenetic analysis of high and low performers", *International Journal of Applied Linguistics*, 20(1) 23-49.
- Kohonen, Viljo (2009), "Autonomy, Authenticity and Agency in Language Education: The European Language Portfolio as a Pedagogical Resource", in: R. Kantelinen, P. Pollari (eds.), *Language Education and Lifelong Learning*, University of Eastern Finland, Joensuu, 9-44.
- Little, David (2008), "Knowledge About Language and Learner Autonomy", in: J. Cenoz, N. H. Hornberger (eds.), *Encyclopedia of Language and Education*, Volume 6, Springer, New York, 247-259.
- 18. Organisation for European Economic Co-operation (2007), *Understanding the Brain. Towards a New Learning Science*, OECD Publications, Paris
- 19. Oxford, Rebecca (2011), *Teaching and Researching Language Learning* Strategies, Longman
- 20. Postman, Neil, Charles Weingartner (1971), *Teaching is a Subversive Activity*, Delacorte Press
- 21. Santi, Paul, Jerry Higgins (2005), "Preparing Geologists for Careers in Engineering Geology and Hydrogeology", *Journal of Geoscience Educaton*, 53(5), 513-521.
- 22. Zeigler, Rosetta (2007), "Student Perception of "soft" skills in Mechanical Engineering", International Conference on Engineering Education / ICEE 2007, Coimbra, Portugal, http://icee2007.dei.uc.pt/proceedings/

- 23. Pink, Daniel (2009), *Drive: The surprising truth about what motivates us*, Riverhead Books, New York
- Veenman, Marcel V. J., Frans J. Prins, Jan J. Elshout (2002), "Initial Inductive Learning in a Complex Computer Simulated Environment: The Role of Metacognitive Skills and Intellectual Ability", *Computers in Human Behavior*, 18(3), 327–341.

# CLIL NASTAVA USMERENA NA STRUKU: JEZIČKE AKTIVNOSTI ZA GEOLOGE

### Sažetak

Rad se bavi uspostavljanjem veze između tržišta rada i nastave engleskog jezika za geologe CLIL metodom. To znači da je tradicionalni metod učenja jezika za specifične svrhe (ESP) unapređen intenzivnijim lingvističkim pristupom kroz 4C model (sadržaj, kognicija, komunikacija i kultura) gde akademska nastava pokušava da bude intimno povezana sa stvarnim životom i odgovarajućom profesijom. U ostvarivanju tog cilja rad nudi nastavne aktivnosti koje kombinuju akademska i praktična znanja, koja su prilagođena aktuelnom trenutku i kreirana prema potrebama i očekivanjima korisnika. Radi preglednosti, rad je podeljen na sledeće delove: uvod-logika veze između nastave geologije i tržišta rada; prvi deo, koji se bavi kombinacijom geologije, jezičkih veština i zanimanja; drugi deo, koji nudi konkretne primere aktivnosti i njihove primene u nastavi, i na kraju zaključna razmatranja u kojima se ističe značaj autonomnog učenja kao preduslova kvalitetnog doživotnog rasta i samoispunjenja. Bez ambicije da na prvoj godini studija dostignemo puni obim opisane namere, cilj nam je da studenti uoče vrednost i povezanost znanja i profesije kako bi učenje već od prvog predavanja bilo sadržajno, motivišuće i personalizovano.

Ključne reči: CLIL; aktivnosti na engleskom jeziku; geologija; tržište rada; profesija

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