

A RESEARCH INTO A CONNECTION BETWEEN ENGINEERING STUDENT MOTIVATION AND THE CLIL APPROACH

ISTRAŽIVANJE VEZE IZMEĐU MOTIVACIJE STUDENATA INŽINJERSTVA I PRISTUPA INTEGRISANE NASTAVE ENGLESKOG JEZIKA I STRUKE (CLIL)

*Tarabar Aida
Ahmetpahić Adisa*

Stručni rad

University of Zenica

Ključne riječi: studenti, inženjerstvo, motivacija, CLIL, konferencija, engleski

Keywords: students, engineering, motivation, CLIL, conference, English

Paper received:
23.02.2018.

Paper accepted:
22.03.2018.

REZIME

Cilj ovog rada je bio da se istraži veza između studentske motivacije i pristupa integrisane nastave engleskog jezika i struke (CLIL) na tehničkim fakultetima Univerziteta u Zenici. Zadnjih nekoliko decenija obilježeno je stalnim raspravama o tome koji načini podučavanja najviše motiviraju one koje uče strane jezike. Utvrđeno je da su najefikasniji pristupi koji su fokusirani na studente. CLIL je jedan od njih. U suštini, CLIL koristi strani jezik za podučavanje određenog sadržaja, u našem slučaju - inženjerskog. Za potrebe istraživanja, provedena je anketa među studentima koji su pohađali CLIL nastavu, nakon njihove konferencije - CLIL 2017, koja je i posljednja faza CLIL pristupa u nastavi engleskog jezika na spomenutim fakultetima. Pretpostavka je bila da CLIL povećava studentsku motivaciju za učenje engleskog jezika više nego ex-cathedra pristup. Upitnik je dokazao tačnost pretpostavke, s obzirom na to da su rezultati pokazali visok nivo motivacije kod studenata. Uz to, studenti su iskazali veliko zadovoljstvo CLIL-om u pogledu njegovog utjecaja na njihovo znanje stranog jezika kao i znanje materije vezane za inženjersku struku. Također, studenti se čine veoma svjesni činjenice da su dobro poznavanje engleskog jezika i dobro poznavanje stručne materije čvrsta osnova za zapošljavanje.

Professional paper

SUMMARY

The aim of this paper was to investigate the connection between student motivation and Content and Integrated Language Learning (CLIL) approach at the technically-oriented faculties of the University of Zenica. The past few decades have been marked with ongoing debates on what teaching approaches are most motivating for foreign language learners. It has been agreed upon that student-centered approaches are the most efficient ones. CLIL is one of them. Inherently, CLIL uses foreign language for teaching a particular content, in our case – the engineering one. For the purpose of the research, a questionnaire was conducted among the CLIL students, subsequent to their conference - CLIL 2017, which is the last stage of the CLIL approach to English language teaching at the aforementioned faculties. We hypothesized that the CLIL approach bolsters student motivation for English language learning more than the ex-cathedra approach. The questionnaire proved the hypothesis true as the results indicated high level of motivation in students. In addition, students expressed great satisfaction with the CLIL in terms of its effect on their foreign language proficiency as well as the knowledge in the content matter related to engineering. Also, students seem to be well aware of the fact that good knowledge of English language and good knowledge of engineering content create a solid basis for employment.

1. INTRODUCTION

The last few decades have been tumultuous for theorists in the realms of applied linguistics and psychology regarding motivation: its definition and sustainability. Heyman and Dweck (1992) define motivation as an internal drive that pushes an individual to act (Cited in Covington 1998). Similarly, Harmer (2008) points out the students' desire to learn as the bedrock of motivation: if it is strong enough, it provokes a decision to act. On the other hand, Julkunen (2002) underlines that *foreign language learning* (FLL) motivation should not be regarded only as a part of students' personality but also as a synergy between the learner and the environment, implying that motivation can come both from inside or outside the student.

Motivation that comes from the environment (*extrinsic* motivation) is defined as the desire influenced by a number of external factors i.e. motivation generated by different attitudes in students' surrounding whereas *intrinsic* motivation is considered to be generated by what happens inside the classroom and the students' minds, be it the methods that the teachers employ or the students' desire to learn more for the sake of knowing more (Harmer 2008). Both the teachers' methods and the students' internal drive are important, but sometimes the teachers' methods are given more prominence probably because one of the teachers' main tasks should be to help students sustain their motivation. Basically, teachers need to focus on the ways they can motivate their students based on the way a learner perceives the use of language and the way foreign language is most easily acquired, and the psychology of their age.

In accordance with that, a plethora of different approaches and methods for enhancing and sustaining student motivation in FLL has been devised. These approaches and methods can be divided into *direct* or *teacher-oriented* approaches and *constructivist* or *student-oriented* approaches (Westwood 2008). However, in the last few decades language methodologists and language teachers moved away from direct teaching methods and focused on *student-centred* approaches such as Task-Based Language Teaching and Content and Language Integrated Learning (CLIL).¹ This is

deemed best practice in situations where a big number of students attend English classes, as is the case at the University of Zenica. Apart from being suitable for such situations, CLIL proves to be good for boosting student motivation in FLL.

This paper is aimed to make a research into a connection between student motivation and the CLIL approach as practiced at the technical faculties at the University of Zenica.

2. RESEARCH

2.1. Setting

Because English language has become lingua franca used all around the world for different purposes, it emerged as one of the mandatory courses in non-English speaking countries, at all levels of education. That is the case with the technical faculties at the University of Zenica whose CLIL students' motivation is the subject of our paper.

The faculties in question are: Faculty of Mechanical Engineering, Polytechnic Faculty and Faculty of Metallurgy and Materials' Science (now Faculty of Metallurgy and Technology). These faculties are the ones who have first introduced CLIL approach in their syllabuses.

Our research into the connection of CLIL and students' motivation was carried out after the student conference (CLIL 2017) - the final stage of CLIL classes in an academic year at these faculties.

2.2. Theoretical background

Before the role of the CLIL approach in affecting students' motivation for foreign language learning is elaborated in more detail, the reasons for the introduction of CLIL at the technical faculties at the University of Zenica will be briefly discussed.

In fact, these faculties are the only ones that have more than thirty-year long tradition in teaching English at the university level in Bosnia and Herzegovina, which capacitated them for the introduction of CLIL.

However, the ex-cathedra approach in the form of English for Specific Purposes (ESP) is still present at the third year of study. Such practice is inevitable due to the fact that education in

¹ The two aforementioned approaches are used interchangeably by different theorists because the latter is, in essence, a type of the former.

Bosnia and Herzegovina still feels the legacy of the poor post-war education particularly at the primary and secondary level. Consequently, students enrolling at these faculties are not equally proficient in English and have different attitudes to it. Thus, the ESP courses are kept to prepare students for CLIL.

In essence, CLIL is an innovative approach which has gained full swing in the past few decades and refers to language classroom setting where a foreign language is used to teach a particular content. In other words, non-linguistic content is used to teach language. In this way, learners acquire new language and content at the same time. Apart from benefits that the very definition of CLIL suggests, CLIL is beneficial in terms of student familiarization with a wider cultural context of the language used. Also, it prepares the learner for further interaction by using the language in question; it improves content-specific competences and provides more job opportunities inside or outside of the learners' country (Papaya 2014).

CLIL as an approach relies on numerous task based activities. According to Richards and Rodgers (2014), task based activities are the ones that focus on carrying out meaningful tasks (project or problem-solving activities etc.) by using the appropriate subject-related language. Such tasks help the learners learn a foreign language more easily than they would through extensive practice of language units such as grammar (Knapp et al 2009).

With respect to connection between students' motivation and CLIL, Knapp et al (2009) explain that CLIL, unlike ex-cathedra approaches, increases the learners' motivation and overall knowledge because such an integration helps create a stimulating learning environment which cannot possibly be made in separate professional and foreign language courses. In CLIL classrooms, the students are not swamped with mundane tasks but have real-life situations brought to them. Such an environment provides a more meaningful link between the content and language being taught. Not only does it motivate students but it motivates teachers too because it involves a more fruitful curriculum along with methods that cannot be used otherwise. While enabling students to learn new content of a particular subject matter via FL, CLIL also helps students to develop their cross-curricular competences. *Id est*, it gives them some agency, which entices their motivation to learn a foreign language

(Coyle, 2006, Lasagabaster, 2011 cited in Ushioda, 2013).

Obviously there must be a link between CLIL and student motivation. To examine this connection, studies were conducted in countries utilizing CLIL extensively at primary and secondary levels since these are the ones that use CLIL most extensively (Sylvén & Thompson, 2015; Lasagabaster, 2011; Banegas, 2013; Gil, 2012). Most of them prove that CLIL students showed more interest for foreign language learning than their non-CLIL colleagues and that this interest was maintained over the entire course. At the same time, non-CLIL students' motivation was lower due to reiteration of the same teaching method over the years, resulting in boredom and poor acquisition of the second language. (Sylvén & Thompson 2015).

3. METHODOLOGY

In order to determine the relation between CLIL classes and student motivation at the University of Zenica, a questionnaire consisting of nineteen items was administered.

Sixteen items included pre-formulated statements, while the remaining three were open-ended questions. The statements were formulated in accordance with the Intrinsic Motivation Inventory (IMI), which is used to assess motivation in psychology but can be used for other purposes as well. IMI is a measurement device which evaluates one's motivation related to a particular activity. To be measured properly, IMI heavily relies on the so-called subscales (concepts) including:

1. Interest/Enjoyment
2. Perceived Competence
3. Perceived Choice
4. Effort
5. Value/Usefulness
6. Pressure/Tension

As their titles suggest, each of the subscales has certain objectives. For example, Interest/Enjoyment subscale is related to the self-report measure of respondents on intrinsic motivation. Similarly, Perceived Competence and Perceived Choice are both "positive predictors of self-report and behavioral measures of intrinsic motivation". Effort is also relevant to some motivation questions and refers to the self-report on the amount of effort participants put in a particular activity or project. Value/Usefulness underpins the idea that people can be self-regulating concerning activities they

find useful. Unlike the previously mentioned, Pressure/Tension is regarded as a negative predictor of motivation (Intrinsic Motivation Inventory, n.d.).

In the questionnaire offered to the respondents (students), the statements and questions were grouped into slightly modified subscales, five of

them: Interest/Enjoyment, Value/Usefulness, Pressure/Tension, Perceived Competence, and Importance. The last subscale, Importance, is to support our rationale that students feel more motivated if they find an activity important, be it for their own satisfaction or for achieving certain goals later in life.

Table 1. Subscales and items used in the questionnaire

<p>1. <u>Interest/Enjoyment</u></p> <p>1.1. I felt satisfied while writing my paper.</p> <p>1.2. I am satisfied with my work.</p> <p>1.3. I consider this approach to teaching and learning English more interesting than the usual one.</p>
<p>2. <u>Value/Usefulness</u></p> <p>2.1. I think that this type of learning English is more effective than the usual one.</p> <p>2.2. I think this approach to learning English is more purposeful because language and profession are being taught through a content that is more close and interesting to me.</p> <p>2.3. I believe that this conference and the preparation for it could serve me in my future work.</p>
<p>3. <u>Pressure/Tension</u></p> <p>3.1. I wasn't feeling tense while writing my paper and using English in it since it was the content I am familiar with.</p> <p>3.2. I felt I had the possibility to be more creative while writing my paper and preparing for the conference.</p> <p>3.3. I felt more comfortable to give a presentation on the content that was more close to me and that I had created myself.</p> <p>3.4. I felt more comfortable than earlier when presenting in English because I had learned a lot during the preparations so I didn't think about potential mistakes.</p> <p>3.5. By the end of the conference I felt more confident and more satisfied.</p>
<p>4. <u>Perceived Competence</u></p> <p>4.1. I think that the preparation for the conference and the conference itself gave me more opportunities for using the English language.</p> <p>4.2. I feel I have learnt more when it comes to English relevant for my area of studies.</p>
<p>5. <u>Importance</u></p> <p>5.1. It was important for me to write a good paper.</p> <p>5.2. I think I had a chance to meet more people.</p> <p>5.3. Preparing for the conference and writing my paper made me feel as if I had been in a real-life situation.</p>

Even though the questions were grouped based on the underlying concepts, they were shuffled in the questionnaire so that the respondents do not find the process of responding tedious, thus more open-hearted answers were expected.

Although IMI offers its own scale for measuring motivation (in the range from 1-7), we used Likert scale characterized by fixed choice responses expressing different levels of (dis)agreement from strong agreement to strong

disagreement, the mean being neither agree nor disagree (McLeod 2008).

The reason behind such a choice was to avoid confusion in students that occurs in situations when students are not familiar with a particular type of scale. Besides, IMI has a wide scope of responses which might influence the accuracy of students' answers.

As already stated, the sample of respondents included students who participated in the CLIL project. The questionnaire was anonymous. For

practical reasons, it was conducted via Google form with 80% of the students responding to it. The results obtained are presented below.

The results obtained are shown in *Table 2*. Statements in the table are titled with numbers in accordance with their order and subscales in *Table 2*².

4. DISCUSSION OF THE RESULTS

Table 2. Results of the questionnaire

Item No.	Strongly Agree	Agree	Undecided	Disagree	Strongly disagree
1.1.	33.3%	50%	11.1%	5.6%	/
1.2.	33.4%	44.4%	11.1%	11.1%	/
1.3.	66.6%	22.2%	5.6%	5.6%	/
2.1.	44.4%	22.2%	27.8%	5.6%	/
2.2.	33.2%	55.6%	5.6%	5.6%	/
2.3.	50%	44.4%	5.6%	/	/
3.1.	22.2%	50%	16.7%	11.1%	/
3.2.	33.3%	61.1%	5.6%	/	/
3.3.	50%	44.4%	5.6%	/	/
3.4.	27.8%	38.8%	16.7%	16.7%	/
3.5.	27.8%	55.6%	11%	5.6%	/
4.1.	50%	38.9%	11.1%	/	/
4.2.	33%	56%	11%	/	/
5.1.	61%	27.8%	5.6%	5.6%	/
5.2.	44.4%	33.4%	22.2%	/	/
5.3.	16.7%	33.3%	38.9%	11.1%	/

Responses to the first statement from the Interest/Enjoyment subscale (*I felt satisfied while writing my paper*) show a significant positive correlation between CLIL process and participants' enjoyment. 83.3% of respondents said they enjoyed this approach, 11.1% said they were undecided, while only 5.6% said they did not feel enjoyment or interest. When it comes to the second statement (*I am satisfied with my work*), the results obtained show that 77.8% of those questioned were satisfied with their performance in the CLIL classes, while only 11.1% expressed their dissatisfaction with their work, the rest 11.1% said they were undecided. As to the statement number three (*I consider this approach to teaching and learning English more interesting than the usual one*), 88.8% responses were positive, 5.6% negative, and 5.6% undecided. Reactions toward each statement from the IMI Interest/Enjoyment scale suggest that a great majority of students were interested in CLIL and enjoyed in all CLIL activities. Such results definitely indicate a high intrinsic motivation.

The next section of the survey included Value/Usefulness subscale. Responses to the subscale's first statement (*I think that this type of learning English is more effective than the usual one*) indicate that 66.6% answers were positive, 5.6% negative, while 27.8% did not express their opinion. Even though the results for this item vary, they still support the findings of the already mentioned studies conducted on the effectiveness of CLIL, such as the ones carried out by Lasagabaster. However, Lasagabaster's studies show correlation between CLIL and motivation only at secondary level, while our study focuses on the same issue but at university level. The overall response to statement number two (*I think that this approach to learning English is more purposeful because language and profession are being taught through a content that is more close and interesting to me*) was positive with 88.8% of respondents agreeing with the statement, 5.6% disagreeing, and 5.6% who neither agreed nor disagreed. As expected, findings in the last item are consistent with Knapp's (2009: 352) explanation that CLIL

² For practical reasons, the statements are not presented in their full forms since they are too long.

provides students with momentous tasks thus enticing their desire to learn a FL. Interestingly, in response to statement number three (*I believe that this conference and the preparation for it could serve me in my future work*), no students expressed disagreement, while 94.4% of them expressed agreement, and the rest 5.6% expressed undecidedness. Taken together, the results for this section show that respondents found this activity and CLIL approach highly useful. In other words, there are probably certain reasons why students at technically-oriented faculties find CLIL useful and most probably these are job-related (*extrinsic motivation*).

When it comes to the first statement from the Pressure/Tension subscale (*I wasn't feeling tense while writing my paper and using English in it since it was the content I am familiar with*), only 11.1% of students said they felt pressure, 16.7% said they were undecided while the rest 72.2% of students said they did not feel any tension or pressure. In response to statement two (*I felt I had the possibility to be more creative while writing my paper and preparing for the conference*), nearly all students, 94.4%, said they agree, while the rest 5.6% stated they were undecided. Strikingly, again, no students said they disagree with this statement. Reactions to the third statement (*I felt more comfortable to give a presentation on the content that was more close to me and that I had created myself*), indicate that 94.4% of students showed positive attitude, while 5.6% showed somewhat ambivalent attitudes to it, meaning that, one more time, no students had negative attitudes. 66.6% of those who responded to the fourth statement (*I felt more confident to give a presentation on the content that was more close to me and that I had created myself*) had positive attitudes, while 16.7% said they were undecided and 16.7% said they disagreed. 83.4% of those surveyed expressed their agreement with statement number five (*By the end of the conference I felt more confident and more satisfied*) while very few participants, 5.6%, expressed their disagreement and 11% stated they were undecided. Bearing in mind that this subscale aims to analyze if there were negative predictors related to CLIL motivation, it can be concluded the CLIL approach did not bring about negative effects, such as tension or pressure, in students involved in CLIL.

In response to the first item from the Perceived Competence scale (*I think that the preparation*

for the conference and the conference itself gave me more opportunities for using the English language), the majority of those questioned, 89%, answered positively to the statement, the rest 11% of the respondents stated they were undecided, meaning there were no negative answers to this item. No significant reduction was found in the responses to the second item (*I feel I have learnt more when it comes to English relevant for my area of studies*) since 89% of respondents expressed agreement, and the rest 11% expressed uncertainty. Taking into consideration that the Perceived Competence scale is defined as a positive predictor of motivation, it can be deduced that CLIL approach, which is at the core of this paper, provides students with more opportunities for using foreign language and thus generates their motivation for learning it. The last, Importance subscale included three items, first of which (*It was important for me to write a good paper*) had 88.8% of students agreeing with it, 5.6% disagreeing and 5.6% of those who were undecided. Second item (*I think I had a chance to meet more people*) shows that 77.8% of respondents expressed agreement, while the remaining 22.2% expressed undecidedness. Surprisingly, in response to final statement (*Preparing for the conference and writing my paper made me feel as if I had been in a real-life situation*), a range of different responses was elicited. 50% of those surveyed agreed with this statement, 11.1% disagreed, and 38.9% were undecided. Even though slightly poor when compared to results from other subscales, the overall results from this scale indicate that students did find the CLIL approach and CLIL the conference quite important.

5. CONCLUSION

In sum, our research focused on the connection between CLIL and motivation. For that purpose, IMI scale was used with slightly modified subscales: Interest/Enjoyment, Value/Usefulness, Pressure/Tension, Perceived Competence, Importance. The obtained results were satisfactory and confirmed our hypothesis that CLIL does, indeed, motivate students for English language learning at the university level. Moreover there were no negative answers to some items. Such results are a clear indicator that students involved in CLIL find it extremely useful not only because it can provide them with better language skills but also because it does

not induce psychological pressure on students as ex-cathedra approach does. Additionally, CLIL provides students with better job opportunities since good knowledge of English is one of the important prerequisites for

engineering positions, and this approach has proved to have a stimulating effect for learning English language.

5. LITERATURA - REFERENCES

- [1] Banegas, D. (2013): *Motivation and autonomy through CLIL. A collaborative undertaking*. [online] Academia.edu. Available at: http://www.academia.edu/2085908/Motivation_and_autonomy_through_CLIL._A_collaborative_undertaking [Accessed 19 Feb. 2018].
- [2] Covington, M. (1998): *The will to learn*. Cambridge, U.K.: Cambridge University Press.
- [3] Harmer, J. (2002): *The practice of English language teaching*. 4th ed. Harlow: Longman.
- [4] Harmer, J. (2008): *How to teach English*. Harlow: Pearson/Longman.
- [5] Julkunen, K. (2001): *Situation-and Task-Specific Motivation in Foreign Language Learning*. In: Dörnyei, Z. and Schmidt, R. Ed. *Motivation and Second Language Acquisition*. Honolulu: Second Language Teaching & Curriculum Center pp. 29-37. Available at: https://books.google.ba/books/about/Motivation_and_Second_Language_Acquisition.html?id=7MELVJorM6AC&redir_esc=y.
- [6] Knapp, K., Seidhofer, B. and Widdowson, H. ed., (2009): *Handbook of Foreign Language Communication and Learning*. Berlin: Mouton de Gruyter.
- [7] Lasagabaster, D. (2011): *English achievement and student motivation in CLIL and EFL settings*, *Innovation in Language Learning and Teaching*, 5 (1), pp. 3-18. Available at: <https://pdfs.semanticscholar.org/d72b/c9717167d7d0b7ccfe5524d4ae553d20ee00.pdf>.
- [8] McLeod, S. (2008): *Likert Scale | Simply Psychology*. [Simplypsychology.org](http://www.simplypsychology.org/likert-scale.html). Available at: <https://www.simplypsychology.org/likert-scale.html> [Accessed 19 Mar. 2018].
- [9] Navarro Gil, N. (2012): *Motivation and Content Language Integrated Learning: An impulse for Second Language Teaching*. Master's thesis. Open University of Catalonia. Available at: https://repositori.upf.edu/bitstream/handle/10230/19996/TFM_Motivation_CLIL_published_NoeliaNavarro.pdf;sequence=6. [Accessed 5 Feb. 2018].
- [10] Papaya, K. (2014): *Focus on CLIL: A Qualitative Evaluation of Content and Language Integrated Learning (CLIL) in Polish Secondary Education*. Newcastle: Cambridge Scholars Publishing.
- [11] Richards, J. and Rodgers, T. (2014): *Approaches and methods in language teaching*. 3rd edition. Cambridge, U.K.: Cambridge University Press.
- [12] [Selfdeterminationtheory.org](http://selfdeterminationtheory.org). (n.d.). selfdeterminationtheory.org – Intrinsic Motivation Inventory (IMI). [online] Available at: <http://selfdeterminationtheory.org/intrinsic-motivation-inventory/> [Accessed 1 Jan. 2018].
- [13] Sylvén, L. and Thompson, A. (2015): *ResearchGate*. Available at: https://www.researchgate.net/publication/272201175_Language_learning_motivation_and_CLIL_Is_there_a_connection [Accessed 5 Feb. 2018].
- [14] Ushioda, E. (2013): *International Perspectives on Motivation: Language Learning and Professional Challenges*. Basingstoke: Palgrave Macmillan Ltd. Available at: https://books.google.ba/books?id=rsZBIJ-pc00C&source=gbs_navlinks_s.
- [15] Westwood, P. (2008): *What Teachers Need to Know about Teaching Methods*. Camberwell: Australian Council for Educational Research.

Corresponding author:

Tarabar Aida

University of Zenica

Email: atarabar@mf.unze.ba

Phone: +387 32 449 120