Implementing CLIL Technology in the Educational Process of Engineering University

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Abstract

The paper describes the development and application of main strategies of CLIL technology in Ryazan state radio engineering university in the process of close collaboration of teachers working at the department of Foreign Languages with the teachers from the faculty of Computer Engineering and the faculty of Electronics. Current trends of globalization and internationalization lead to search new technologies of more successful learning, CLIL being one of them. The article describes the basic strategies of CLIL implementation into the environment of engineering institutions, the factors favoring successful subject acquisition by means of foreign language are considered. The main objectives of CLIL technology being applied in higher engineering education are to give future specialists a competitive edge, increase their self-confidence on a global level and facilitate their entering international professional community. The article also considers the main principles of CLIL implementation into academic environment.

Keywords: *Content and language integrated learning (CLIL); consistent learning; professional competency; communication; language acquisition.*

1. Introduction

Modern society nowadays features several increasingly important trends in the sphere of education such as the trends for integration, internationalisation and globalisation. In case of Russian Federation, the State program "Development of Education" defines its first and main aim as the development of such qualitative education that is characterised by global competitive ability of Russian students to participate in international research and scientific projects, be ready to defend and discuss the results of their research and of their practical activity in international conferences; actively communicate with the colleagues from global community.

To implement this aim a student should have substantial knowledge in the field of his professional interests as well as the ability to express everything he wants by means of some other language, in our case, English one. Russian higher educational institutions provide different programs and introduce wide variety of disciplines to learn foreign language (FL). In the article we would like to discuss methods and ways to study FL that we apply in the academic process of Ryazan state engineering university.

Our practical experience shows that in majority of cases FL as a university discipline is often separated from other professional disciplines being taught at the university. Huge attention is given to grammar rules and training grammar structures without real texts and real situations, paying only little attention to professional side of students. But when we look at English for Professional studies discipline, we can easily realize that FL here should be a kind of medium, not the aim in itself, to facilitate students understanding of professional disciplines. FL should be a means of cooperation between language learning and content learning. The best way to achieve this cooperation, in our opinion, is to use CLIL approach.

The article provides main teaching methods used in the process of education, considers the principles of CLIL elaborated by the author and applied in engineering university.

2. Principles and methods of CLIL in higher education

CLIL being the acronym for Content and language Integrated Learning has quite a number of interpretations, the most known is the definition of Coyle, Hood and Marsh considering CLIL as a dual-focused educational approach where an additional language is used for learning and teaching of both content and language [1]. Thus, it can be viewed as a specific method of FL teaching and learning. Simultaneously, this technology is seen not only as a method in itself but a kind of instruction that unites content and language. CLIL nowadays makes use of a complex of methods and strategies that promote creative thinking, critical learning, increase motivation of students to acquire new fields of their professional studies, strengthen their professional competences.

Here the main emphasis is laid on deep professional learning by means of foreign language, supporting the idea of bilingual learning. The expectations based on the didactic character of this technology are twofold: on the one hand, learning based on CLIL technology gives the students greater competitive edge by developing cognitive flexibility and cross-cultural competences; on the other – it develops students skills of effective communication in everyday and academic contexts by means of their second language opening larger opportunities for employment and career building. It's also worth mentioning that CLIL helps to achieve practically all so-called 21 century skills, viz. collaboration, communication, critical thinking and creativity.

Firstly used in the practice of primary and secondary school teaching CLIL has shown high efficiency to integrate pupils in the social environment of a new country, consequently, leading to the idea of introducing CLIL into the process of academic learning.

The majority of researchers [1], [2], [3] basically point out two approaches to CLIL implementation in the process of academic studies the first being called content-driven approach where professional disciplines are given the main emphasis. The second approach called language-driven approach makes use of a FL first which serves as a background for acquiring professional skills. In our opinion, the second approach is more applicable in the process of academic learning in current conditions of higher educational institutions and is being applied in the academic practice of Ryazan state radio engineering university. Here it's worth mentioning that these approaches are quite arbitrary and are often intercepted or used together.

CLIL technology has been implemented in our university for practically 10 years allowing us to receive results and make certain conclusions. Here we implement CLIL technology for master and post-graduate courses on "Computer engineering" and "Electronics" faculties. Main directions involved in collaborate program are "Computing machines, complexes, systems and nets", "Computer-aided design", "Programming engineering", "Electronics and nanoelectronics". Language – driven approach is considered the most suitable here as the teachers of FL and professional disciplines have limited hours dedicated to their disciplines. In the first year of study at master courses the students have the discipline "Foreign language for professional studies", where the academic program is developed by the teachers of FL together with the teacher of professional disciplines. By the moment the students enter master educational courses the majority of them have their English as B1-B2 level which is enough to start teaching them applying CLIL technology. More than that, they have higher motivation to study their professional disciplines by means of FL as they already realize future career opportunities in labor market and their higher competitiveness in international conferences and discussions. The teachers of professional disciplines involved in this technology have decent knowledge of FL and show their desire to make use of multiple foreign information resources for master students.

The course of learning is organized according to the main principles [4], [5], viz. 4Cs working as the basis for the technology.

1. Content. This principle is considered to be the fundamental one while implementing CLIL technology in the process of learning. There is no language without professional content, and, on the contrary there is no content without language acquisition. Content here is the basis for using language skills, it allows the teachers establish diverse connections between the disciplines and take account of specific language learning methods used while teaching professional disciplines. Class in FL in our case complements and enriches the knowledge received by students in their professional disciplines. It opens new possibilities to use this knowledge in the process of reading and watching vast amount of information given in FL.

2. Communication. By communication we mainly mean here learning new information in professional sphere by means of foreign language. FL here is understood as the means of communication and connection, only the medium to get new knowledge but not the final aim of study. The aim of "Foreign language for professional studies" discipline in CLIL technology is not to learn FL itself but to learn more professional information using the language other than native. Students working with content (it may be texts for reading, documentaries for discussion) given in FL can immediately use their new knowledge in their practice thus advancing their skills both in professional discipline and second language. In this case we speak primarily about fluency as it is far more important than grammar accuracy as making errors is natural while learning both professional subjects and language. Communication skills both in native and foreign languages strengthen students' confidence and again, increase their motivation to participate in international events and discussions.

3. Cognition. Here we understand cognition as the ability to think, speculate over a certain idea equally confident both in mother tongue and in FL. Students being young people are eager to perceive the world around them using all means they have at their disposal. In this respect the second language

opens new prospects for them in the process of learning. Mastering a FL is important as it allows them to find and grasp authentic information they may need. It is generally assumed that it is the close connection of language with thought that leads to effective learning.

4. Cultural interaction. English language nowadays has already become a kind of "lingua franca" for scientists. When we speak about engineering education it becomes clear that English here is a universal language uniting professionals together and allowing them to gain higher results using collaborate skills and knowledge. Students in this respect have great opportunity to learn and understand the origins of this language and its culture and get interested in its cultural peculiarities or different view on the same things.

In the course of learning both professional disciplines and foreign language according to CLIL technology we used the methods of active learning that stimulate independent search of the problem , finding the solution to the problem stated as well as decision-making made by students. These include various presentations, creating posters for further discussion, class games and simulations, different case-studies, individual projects, working in collaborative learning groups, etc. These methods surely provide deeper understanding of a certain discipline by means of FL acquisition.

3. Conclusion

As a conclusion we should note that CLIL technology is quite prospective and effective way of integrated learning professional disciplines together with foreign language. Language acquisition becomes more conscious as it is applied in different spheres of future professional activity. In the course of study all learners have the opportunity to use vast diversity of language professional resources that leads to better student orientation in foreign language environment. Aforementioned theses allow us to make the conclusion about the efficiency of implementing CLIL technology in the academic process of engineering university.

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