

FACILITATING ECOLOGICAL LEARNING IN ESP FOR THE LIFE SCIENCES

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Abstract. *By conducting surveys and questionnaires, we have aimed at identifying the needs of students enrolled in academic programs within the domain of Natural and Life Sciences who also study English as a Foreign Language, as well as English for Specific Purposes. The analysis also targets students' perceptions and attitude toward recently developed EFL material and prospected ESP textbook materials targeting "Ecological English", as well as "English for the Life Sciences". With this purpose in mind, we wish to make better use of the students' feedback and be able to adapt our teaching materials to correspond to the learners' genuine needs and interests. The qualitative analysis of the students' feedback indicates that they are largely interested in understanding ecological processes and communication at all levels in nature. We also include examples of activities devised for the English language textbook, in the hope of developing optimized educational models and with a view to sharing best practices in foreign language teaching/learning.*

Keywords: *ecological education, foreign languages, ESP for the Life Sciences, communication.*

INTRODUCTION

The acquisition of soft skills, such as interpersonal relationships and collaborative communication in a foreign language, are key aspects which should be taken into consideration in any career guidance project. English for Specific Purposes within the Life Sciences (in this case, English for Agricultural Engineers, English for Horticultural Engineers and English for Food Science Engineering) requires consistent interdisciplinary partnership seeking knowledge transfer and the creation of professional networks across various socio-humanistic disciplines. Therefore, our transdisciplinary cooperation within and between the University of Life Sciences "King Michael I" and USVT includes the contribution of members from the languages and teacher training/counselling departments for the purpose of enhancing higher quality educational practices and learning attitudes. The major aim of our on-going interdisciplinary project is to promote chances of employability for students in natural science engineering and related areas, where communication remains an important issue. For this purpose, the specific aims which are targeted in the educational and English courses consist in the design of a set of didactic strategies informed by shared practices and the development of communicational learning materials.

The undergraduate students at our university may opt for courses of foreign languages and pedagogical training, both of which focus on learning how to learn and on optimizing communicative abilities. Researchers generally regard Language for Specific Purposes as a pedagogical concern, which entails a different choice of teaching materials rather than special teaching methods (WHYTE & SARRÉ, 2017:2). Having this framework in view, our course of English for Specific Purposes (ESP) takes into consideration both didactics and pedagogy, while focusing on the pedagogical dimension, which is more practice-oriented, according to WHYTE & SARRÉ (ibid.:3). From the point of view of didactics, teaching is knowledge-oriented, while being more practice-oriented from a pedagogical point of view, which also covers a wider scope – actors, content, curricula, objectives, and, essentially, the context or environment of learning.

Thus, pedagogy implies more practical and applied processes, whereas didactics lays out a more theorising process, with the aim of analysing how teaching is conducive to learning (ibid.:4). Beyond teaching formal content, we are committed to enabling students to manage their own learning by negotiating with others in a strategic manner, which requires acquisition of communicative learning strategies and soft-skills, turn-taking, collaboration on project work and various class activities. These are aimed at systematically providing new ways of thinking about relevant topics which consistently focus on ecological and sustainable communication issues (cf. BOGUSŁAWSKA-TAFELSKA, 2013).

The collaborative dimension also applies to our collegial participatory community, as we are working together on synchronizing our curricula and methodologies to evolve more coherence on a general level and to lower degrees of entropy in learning and teaching approaches and styles. This paper examines ways in which teaching languages and social sciences both rely on approaches which represent principles, framings, and perspectives targeted at finding optimal solutions on a larger scale within the community.

MATERIAL AND METHODS

The ecolinguistic approach remains the preferred method employed in our research and collaborative endeavours, which is devised as a contribution to the development of holistic models of communication (BOGUSŁAWSKA-TAFELSKA, 2016). One of our main shared objectives is enabling students to achieve notions related to sustainable / ecological communication and understand its real importance in the public and social life of any community and organization, within and beyond the academic settings.

For this purpose, we propose the following thematic subprojects which are coherently interrelated on our common agendas: developing language use, communicative and pedagogical competence, as well as extending intercultural exchange abilities. Courses at our university often include Erasmus students from all over the world, who are organically integrated in various common projects, helping us reinforce the multicultural dimension of communication. Learners from a wide range of cultural backgrounds are not only the recipients, but also participators in relevant, content-based instruction, according to the specificities of the students' main fields of study (agriculture and farm management, horticulture, silviculture, genetic engineering, biology, biotechnology, food science, etc.) within the USVT "King Michael I" from Timisoara.

RESULTS AND DISCUSSIONS

The study raises several questions with regards to English for Specific Purposes and Content-based learning, which is correlated with the importance of communicating in a foreign language, in a context-specific and appropriate manner. Language for Specific Purposes essentially integrates content-based learning, given that educators tend to the specific needs of learners in their basic area of interest, which makes ESP "more cost-effective than General English" (JOHNS & PRICE-MACHADO, 2001:43-44). Among the issues we are taking into consideration is the importance of balancing content and language aspects, as well as teaching learning strategies in the process. Also, we aim at coordinating our efforts so as to integrate all relevant aspects: linguistic, cognitive, didactic, pedagogical, and affective factors in context. From the standpoint of ecological communication, our target groups of ESP students are encouraged to engage in communicative and interactive activities, which involve role taking, free exchange of opinions between participants, finding partners in dynamic learning environments. The study raises questions of relevance for the area of ESP teaching and

learning so as to harmonize content and language aspects and to establish a natural classroom ecology for language practice.

This discussion provides follow-up on our research and analysis, based on the experimental observation conducted during the first semester of the academic year 2018-2019, as shown in our previous research (DRAGOESCU URLICA, COROAMA DORNEANU & KAMBERI, 2018; COROAMA DORNEANU, DRAGOESCU & GROSZLER, 2018). Our observations have focused on target groups of undergraduates enrolled in the education and teacher training programmes and foreign language courses from the Faculties of Agriculture, Horticulture, and Food Engineering Faculties, among others. We established training groups focusing on soft skills relevant to each of these target groups in particular and aimed to reproduce actual working communities within the learners' respective interests. These may be considered simulations of work culture, which students become familiar with, in addition to linguistic subject matter. While acquiring a foreign language, students also become aware of the "work culture" element of any field or company, which is essentially conveyed through communication and organizational culture (IOSIM & POPESCU, 2015:95).

The soft skills we constantly highlight cover especially the following areas: communication skills; creative and critical thinking; cognitive orientation and problem solving skills; sociability, etiquette, and (inter)cultural awareness; interpersonal, teamwork and negotiation skills; metacognitive and self-management skills, etc. Some authors also add metalinguistic awareness, context understanding and "strategic competence in context" (GENESE, 2002:547; MOORE, 2006:125). In language class environments, we have seen that it is not enough to possess the "hard" skill of knowing the correct or incorrect usage of a linguistic unit if we lack the "soft" skills of knowing when and how to use specific language (WAGGONER in REALE, 2013:73) [10]. In order to improve the effectiveness of our teaching styles, we have considered each of these aspects in an integrated manner and we are constantly adapting our strategies and didactic methods (DRAGOESCU URLICA & STEFANOVIĆ, 2018; BOACA & SAVESCU, 2018). After adopting the strategies described previously, we noticed an increased interest in the collaborative type of training provided by our pilot modules and decreased levels of entropy in general communicative processes. Therefore, we seek to cohere pedagogical and language modules further to facilitate collaborative education and become effective as tools in building a more sustainable future community. As regards the constructivist approach to teaching we espoused earlier, we encourage self-directed learning. Despite being very much acclaimed, it has also received its share of criticism for lacking empirical effectiveness and it is considered improper to use instructional practices whose effectiveness is not supported empirically (MATTHEWS, 2003).

Beyond strictly constructivist didactic practices and language systematics, we look at Content and Language Integrated Learning (known as CLIL) as a larger aim to be included in our practical courses. This educational approach introduced by Marsh (2012) takes the specificities of content-based learning to the next level as "content and language integrated instruction" in the following ways: ESP courses are "dual-focused" and language becomes a vehicle for learning genuine subject matter (MARSH & FRIGOLS MARTIN, 2011). In consequence, learning programmes and materials are designed to integrate relevant topics, connected to the students' interest, thus being learner-centered. Thus, the latter are enabled to contribute their "expertise" knowledge on the topic, which allows trainers to learn along with students. All these aspects considered, CLIL effects "potential synergies" towards more effective learning (COYLE, HOOD & MARSH, 2010:28).

Having this approach in view, the materials we employ include audio-visual introductions to content-based video presentations and documentary fragments, linguistic

elements from a wide range of authentic (preferably scientific) texts, group discussions and collaborative exercises meant to establish a common “language” and also to activate emotional intelligence. Additionally, we work on error correction in a non-threatening manner by using stimulating exercises like “Find the mistake” or “Odd one out”, where students have to play detective and spot inconsistencies. Framing error correction activities in a low anxiety environment helps in teaching learners to avoid emotional barriers. This can be carried out by not correcting inconsistencies immediately, but rather at the end, with the whole group collaboratively correcting what adds up on the Error correction drawn during communicative activities. Thus way, the authors of errors are not singled out and we avoid triggering a demoralizing attitude, focusing instead on learning from our mistakes in a playful manner with the group. Additionally, we use concept maps, schematic flowcharts and tables which are available at hand to help students understand the organization behind language patterns and how communicational structures are formed.

The pilot classes we taught in the first semester of the academic year 2018-2019 were exposed to several critical aspects, including content-based learning, emotional, affective, and meta-cognitive strategies which guide students in the process of learning how to learn (BOGHIAN, 2016:55).

The research carried out by MacGregor & Price (1999) is also an example of transdisciplinary collaboration between academics and teachers of languages looking at how language proficiency may impact learning for other purposes, by focusing on structure analysis and functionality, which are intrinsic to ESP learning and teaching. For this reason, the experience of language learning is conducive to better strategic manipulation of communication tools and a variety of learning strategies adaptable to any other types of experiences in which the students may require them.

CONCLUSIONS

According to our working experience and interdisciplinary re-elaboration of our teaching methodologies, the academic groups we have targeted would benefit from: an enlarged awareness about constructing a positive learning and working environment; a familiarization with basic humanistic fundamentals which are useful on a general community level; increased modalities of learning which are indicative of an optimum achievable quality in didactics and foreign language learning. By virtue of the didactic proposals advanced in this paper, we should be able to overcome some of the obstacles learners face in their learning styles and help conceptualize more effective learning strategies, according to the students’ needs and highest potential. Our application of CLIL (Content and Language Integrated Learning) is an illustration of interdisciplinary convergence applied with this essential aim in mind. We are looking forward to exchanging views and feedback with colleagues who consider implementing similar educational approaches from an ecolinguistic or holistic perspective.

On a personal level, we target the acquisition of an increased set of linguistic and communication competencies, especially transferable ones, which would be conducive to improved degrees of employability and larger career prospects. Also, we are keen on investing in human capital at all levels, helping students achieve applied entrepreneurial training for all areas of life sciences (farming, horticulture, legume culture, etc.), so as to contribute to the greater societal relevance of our universities’ educational programmes. Ultimately, our joint perspective of the educational and foreign language programmes provided for our undergraduates highlight education on a life-long basis and enable students to learn how to learn. This discussion will hopefully instigate further debate on finding ways to apply our

vision to shifting the students' core values as citizens of the macro-community of our planet, not merely simulating formal class practices.

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