

ESP TEACHING/LEARNING STRATEGIES APPLIED TO ENGLISH FOR THE LIFE SCIENCES

Alina DRAGOESCU¹, Iasmina IOSIM¹, Alexandra IBRIC¹, Lavinia PETANEC¹, Alina MARGHITAN¹, M. R. LUNGU¹

¹ULST 'King Mihai I' from Timisoara, Romania

Corresponding author: mariuslungu@usvt.ro

Abstract. *The aim of this paper is to raise awareness on the benefits of integrating specialty concepts and topics in the ESP (English for Specific Purposes) course at the University of Life Sciences "Mihai I" from Timisoara, Romania. The study highlights the need for academics to pay greater attention to a number of typical competencies in order to support students pursuing a career in the life sciences – Agricultural Engineering, Horticulture, and Farm Management. Our ESP course is tailored to meet the demands of students specializing in fields across the Life Sciences, despite the fact that ESP methodologies may vary extensively. Gaining the specialized knowledge and understanding needed for this subject helps graduates integrate into the multidisciplinary society that awaits them. The ability to analyze and synthesize information, apply knowledge in practice, solve problems, and communicate in a foreign language (particularly English) were shown to be the most crucial generic academic competencies in the subject of life sciences. The necessity for additional competencies to be gained for greater employability prospects is acknowledged by both graduates and stakeholders in the area. These competencies include the ability to adapt to new situations, teamwork, interpersonal skills, and a concern for quality. The ESP course has been created with the purpose of emphasizing the development of each of these competencies. Applied content designed to assist students in acquiring the aforementioned abilities is included in the textbook support for the English for Life Sciences course. The report will provide a detailed illustration of how each of these subject-specific competencies has been acquired and developed with proper attention to support students' professional demands in their primary field of study.*

Keywords: *English for Specific Purposes (ESP), teaching foreign languages, communication, didactic strategies.*

INTRODUCTION

Highly specialized communication in English for Specific Purposes (ESP) has developed over the last decades, given that English has become essential to the global jargon of areas as diverse and prevalent as technology, research, marketing, tourism, among many others (IOSIM & POPESCU, 2015). As a result, the new globalizing trends have put increasing pressure on the development of innovative approaches to acquiring languages as a practical communication tool in real-world professional settings. By working together with researchers from other countries, we have sought to establish common frameworks and guidelines for creating instructional materials that are more adapted to modern language learning techniques, including virtual education (URLICA, COROAMA-DORNEANU, KAMBERI, MALENKO, 2019; URLICA, STEFANOVIC, KAMBERI, BOGUSLAWSKA-TAFELSKA, 2021). The development of English for specific groups of learners seeks to find methods and materials fit for specific needs and situations, relying heavily on contextual communication.

Thus, the courses we have designed (e.g. *English for Agricultural Engineers, English for Genetic Engineers, Ecological English – English for the Life Sciences, etc.*) contain topics adapted to class use with the purpose of improving students' knowledge of English in their applied fields of study. Each unit contains discussion points to help ESP learners acquire the specialized vocabulary they need for communicating and understanding relevant issues in their field.

Although the approaches of various disciplines within the medical or Life Sciences differ extensively (OANCEA & al., 2004), ESP is generally designed bearing in mind the needs of students in their specific field of study. The aim of this paper is to raise awareness on the benefits of integrating specialty concepts and topics in the ESP course for specialists in the life and natural sciences. Developing specific skills and concepts required in this field facilitates specific knowledge / content acquisition and, as a result, the graduates' integration in the multi-disciplinary society awaiting them.

This overview of the current state of ESP begins by surveying on-going debates on key topics: needs assessment, specificity in instructional methods, and the role of subject knowledge which should be context-related and competence-based. Several strands of current research and conceptual systems are surveyed, highlighting the communicative approach.

MATERIAL AND METHODS

The linguistic methods we used in our study are based on a range of selected approaches adaptable to specific classroom activities consistent with communicative methods. The material used in this study consists of teaching material we have collected and employed in our ESP classes, generating textbooks suitable for English for Specific Purposes, focusing on content-based learning specifically for the Life Sciences.

The present study is based on qualitative methodology and observations made by a team of academics teaching English for Specific Purposes at the University of Life Sciences "King Mihai I" from Timișoara. They have authored the textbooks used in the university-level courses of ESP – *English for Agricultural Engineers* (DRAGOESCU & COROAMĂ, 2016) and *Ecological English – English for Life Sciences* (DRAGOESCU URLICA, 2022). Several groups of students from these faculties were subjected to a two-semester period of experimental ESP teaching during 2023-2024 academic year.

RESULTS AND DISCUSSIONS

Our ESP students have been subjected to an empirical study based on our assumption concerning the comparative effectiveness of our language teaching tools. After compiling empirical evidence from the classroom., we designed ESP teaching materials to improve functional communicative language skills for the students' practical use and to include them in our textbooks.

Based on comprehension checks and class observations we focused on communicative aspects which seemed underdeveloped and on the acquisition of inter-relational competences (IOSIM, 2019; LARMER & MERGENDOLLER, 2012; PALMER, 2011). The discussion points to the relevance of soft competences such as interpersonal skills, the concern for quality, adaptability, and teamwork (HARVEY, 2000). For this purpose, we developed methodological tools based on communicative and cooperative language learning and verified their effectiveness after one and two semesters.

The concept of 'interactivity' is a hallmark of recent communicative models of language learning and EFL (English as a Foreign Language), which has important implications for the language learning course design, as well as for our given didactic and educational purposes. Considering that communication is the co-construction of meaning via interaction, researchers consider that interactivity has multiple dimensions, such as complexity responsivity, and facilitation of interpersonal communication (HEETER, 2000). The paper discusses the importance of understanding this concept correctly and not limitatively operating on the assumption that its meaning coincides with 'making learning fun'.

We ought not merely ask questions about the tools we should use to create interactive language classes, but rather question about relevance to the learner and content quality, especially in ESP learning (English for Specific Purposes), such as in our particular case – learning English for Life Sciences. Thus, it is not enough to focus on devising activities around “interactive” resources such as digital and audio/video media or on making language learning ‘fun’. In learning situations which make sense for learners, they become more cooperative in a natural manner, which builds on their conceptual learning abilities (COZMA, 2015:1210-1211). It is not necessary for teachers to ‘camouflage’ learning and seek entertaining activities, such as games or songs (FRENȚIU & COZMA, 2013, p. 75).

Moreover, resources do not have the quality of ‘interactivity’ in themselves, but depending on the way they are adapted and employed, with respect to activating socio-affective, cognitive and metacognitive functions, for instance: making associations/inferences, acting out, discussing, seeking, checking, assessing, meaning making, decoding/deducing, rephrasing/paraphrasing, summarizing, and cooperating on tasks, which truly highlight the qualitative potential of interactive learning processes.

In our case study, at the beginning of ESP courses, most students displayed rather low readiness to interconnect and work in groups and generally rather underdeveloped communicative skills. By the end of the first semester, evaluators remarked more satisfactory levels of frontal communication, whereas the level of interaction among students was still low. During the second semester of experimental teaching, ESP students started working in groups more autonomously, bringing an additional degree of interactivity to the English class. Following two semesters of ESP training, the results obtained at the final assessment confirmed that students not only understood ESP contents and were able to respond to the evaluators’ enquiry, but they were also able to express their opinion and personal attitude to the subject of communication in pair / group work.

Besides the lexical approach and Competency-Based Language Teaching, we have largely relied on communicative methods that we explore in detail (RICHARDS & RODGERS, 2001, p. 151). Communicative Language Teaching (CLT) consists of practices such as cooperative learning, providing peer feedback, and focusing on content-based instruction, as well as task-based language learning (RICHARDS & RODGERS, 2001, p. 223). The following types of tasks would be possible illustrations:

e.g. - Draw up your ideal job. Which would be the suitable career plan for you within the wider Life Sciences umbrella? Draw up your business plan, following the steps to take.

- Describe how you would choose your favorite crop to produce, based on various criteria (the easiest to market, the most cost-effective, the healthiest ones, etc.)

- Food safety – design a leaflet for your customers or farm visitors.

The most significant criteria in designing learning materials have focused on being meaningful to specific learners (WILLIS & WILLIS, 2010). Interactive patterns in conventional classes tend to have a decreased coefficient of interactivity and have therefore been addressed by our training method. We therefore relied on encouraging the interactive aspects of group learning and building strong interpersonal skills (BROWN, 2001). We have identified and introduced several types of activities that enforce interactivity, which have been evaluated as not sufficiently trained:

- find similarities and differences in two different given situations (e.g. industrial vs. organic farming);

- connect the two situations in one dialogue with linking words and necessary transformations;

- discussing in small groups, expressing independent opinion; agree or disagree;

- debate / dramatize antagonistic dialogues in doubles (or group) interactions;
- role taking, interactivity, contact between the participants engaging each other.

Finally, besides task-based speaking activities, and presentations based on contextual aids, project-based learning is also considered by other researchers to be very effective (LARMER & MERGENDOLLER, 2012, p. 74).

Cooperative learning environments have worked better than typical teacher-fronted course and have proven effective even in more recent online environments which have been quite challenging (URLICA, STEFANOVIC, KAMBERI, BOGUSLAWSKA-TAFELSKA, 2021). Some significant examples of collaborative learning accompanied by acquisition of transversal competences have been provided by REȘCEANU & TILEA (2020), REȘCEANU (2020), and TILEA, RESCEANU, & RESCEANU (2021). As an offshoot of collaborative learning, peer feedback may receive special attention, as shown by KAMBERI & al. (2021).

Finally, the new postmethod pedagogy enables stakeholders bypass the limitations of more traditional methods (Richards & Rodgers, 2001). The latter has been replaced by novel teaching / learning strategies which are able to reflect “local needs and experiences” more accurately (SAVIGNON, 2007, p. 207). This approach has more context-related ambitions, as authors emphasize practical focusing on “local exigencies and lived experiences” in order to achieve meaningful pedagogy (KUMARAVADIVELU, 2006, p. 171). It is more relevant, in this context, to pay attention to the particularities of the learners and the learning socio-cultural context (KUMARAVADIVELU, 2006, p. 171). This trend may be implemented by allowing more freedom to learners and teachers to find paths for interaction that develop organically, that are meaningful and context-dependent instead of fitting them in narrow curricula and grammatical structures.

CONCLUSIONS

Given the insights presented in the discussion section above, our ESP method relies upon communicative teaching principles and prevalent theories of second language acquisition (KRASHEN in HAJIMIA et al., 2020). According to SLA methodology, we have combined approaches to assist the development of ESP teaching materials. Guided by the postmethod approach to language education, we used second language acquisition theory, communicative, and cooperative methods, as well as needs assessment based on our exploratory analysis.

We have investigated the effectiveness of the proposed approach via experimental training in our ESP classes to verify the initial hypothesis presented in the introduction. The teaching experiment followed several stages: preliminary assessment to test the level of learners’ communicative skills; experimental teaching based on free communicative exchanges; post-experimental re-evaluation, and examination of qualitative findings based on the results we have obtained. Despite the foregoing objections, by the end of the second experimental semester, students exhibited a higher level of oral proficiency and fluency in English.

In light of the findings discussed in the results section, we may suggest that ESP teaching focused on communicative methodology, specialized teaching resources, and content-based learning is more meaningful to learners and has the potential of being translated into practical application. Thus, developing professional communicative skills and specialized teaching resources enables students to be immersed in the learning process with greater chances of acclimating to real-world environments.

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