

## **Science in Context: Fostering multidisciplinary collaboration in a first-year science module**

**Zaan Bester**

University study should ideally prepare students for the world of work and real life, where people more often than not collaborate with others or work on multidisciplinary projects. The Faculty of Science at one university in South Africa aimed to do this by implementing a compulsory module for all first-year students in the Faculty of Science, called “Science in Context”. Lectures in this module focused on language and communication skills, computer skills, and developing skills to be a successful graduate (graduate attributes). The assessment for this module was a group project that replicates some of the conditions of collaboration in scientific communities: experts in different scientific and academic fields working together, drafting various versions of a text, consulting with content experts and with scientific writing experts, and each group member being held accountable for their contribution. This paper considers the goals of the module, the principles underlying the project, the implementation and associated challenges that were encountered along the way, as well as the results, both in terms of grades and the students’ experiences.

## **Academic English for Mathematicians, Physicists and Computer Scientists (CS): Designing a two-semester course**

**Miluša Bubeníková**

The aim of the presentation is to share the experience of designing a two-semester course of Academic English for Master’s and PhD mathematics, physics and computer science students. The purpose of the course is to provide students with a balanced knowledge of the academic skills they will need when beginning their professional careers. Four language skills (speaking, listening, reading, and writing) are continuously studied, practised and improved mainly through the giving and defending of presentations, the discussing of scientific problems, and the writing of academic papers. The course is intended for highly motivated students with at least an upper-intermediate level of English. The teacher’s ideas, intentions and plans are compared and confronted with the results of the questionnaires filled in by the students of the course at the end of every semester.

## **Transferable skills in ESP**

**Daniela Dlabolová**  
**Eva Čoupková**

The demand for transferable skills as an integral part of the English for Specific Purposes (ESP) courses taught to science students has been expanding for at least the last decade due to the increasing interdisciplinary and international cooperation within various fields. The need for the linguistic competence of science graduates not only in their area of expertise, but also within the broader context of their professional and social activities, has provided the educators with the opportunity to enhance the educational impact of ESP courses. For the purposes of this paper, transferable skills may be operationally defined as a set of oral and

written communication skills based on the content knowledge of specific science disciplines which ESP learners acquire and practise in various semi-authentic situations.

The presentation will discuss examples of activities aiming at promotion and development of transferable skills in the courses of ESP for the students of Chemistry, Geography, Mathematics and Physics. A special emphasis will be put on sample tasks practising mediation, giving feedback, problem-solving, problem-visualisation and problem-explanation that is intelligible but does not disrupt the accuracy of the interpretation.

## **Gamification of ESP**

### **Markéta Dudová**

With the current interest in “21st century skills” in foreign language research, particularly in communication, cooperation, creativity and critical thinking, gamification has gained attention as one of the vessels that can convey these skills. The gamification of foreign language courses encompasses the idea of adding game elements, game thinking and game mechanics to learning content. According to the latest education theories, introduction of gamification to the instruction process is beneficial as well-designed games help students acquire skills, knowledge and abilities with high retention rates and effective recall. The goal of the gamification of ESP (English for Specific Purposes) is to take content that is typically presented in ESP courses (specified vocabulary, scientific concepts or theories), add game-based elements (storytelling, challenge or problem-solving) and create a gamified learning activity that will promote students’ learning, retention and engagement. The presentation will describe an example of a gamified learning activity, designed for ESP courses taught at the Faculty of Science, Masaryk University. The activity is a form of an online escape game, based on the well-known novel by Andy Weir, *The Martian*, in which students take on the persona of a character from the book. It is a structured, rule-based, solve-problem activity whose aim is to engage students, encourage their cooperation and enlarge their specialized vocabulary related to their field of study.

## **Writing in ESP/EAP courses. The main obstacles students are encouraged to overcome**

### **Lenka Fišerová**

The presentation covers both a brief description of ESP courses and specification of writing items included. It focuses mainly on students’ writing beliefs and on the mistakes made in laboratory reports. The presentation also dares to suggest how to minimize making particular mistakes.

Faculty of Chemistry of Brno University of Technology educates students in several branches of chemistry such as environmental protection, material science, food science and biotechnology, chemistry for medicine, and applied chemistry. The ESP courses taught at the faculty are based on needs of its alumni in industrial plants; thus, besides other relevant ESP items, the courses mainly develop specific writing genres such as instructions and laboratory reports. In the four-semester course system, students are trained to write texts on properties and reactions of elements and on tasks and procedures they employ in laboratory classes;

using comparative/contrastive structures they describe whiskey making; and they summarize main ideas of scientific articles. Based on the above experience and on the laboratory tasks they did, they are assigned writing a laboratory report. At the beginning of the semester, information on their writing beliefs is acquired in the form of a questionnaire; the relation between learning performance and beliefs is referred to in specific literature (Mori, 2009).

Mistakes occurring in the laboratory reports cover mainly the following items: violation of the SVOMPT rule; use of definite/indefinite/no articles; use of improper vocabulary; use of improper tenses; inability to express information in a clear/succinct way; organization of the text into paragraphs; including citations into proper sections of the text; relevant content of Abstracts; distinguishing between Abstract and Introduction; following the genre writing rules.

Based on the information on students' beliefs and on her teaching experience, the author suggests the following ways to improve writing performance: proper long-term training in relevant writing items; decrease of students' dependence on teachers by analyses of authentic texts and by using specific writing tools like PhraseBook; enhancement of students' learning responsibility; and providing thorough information on the distinctive character of ESP writing.

## **What is behind the door or How to effectively facilitate the entrance to the world of ESP**

**Lenka Fišerová**

The workshop deals with difficulties experienced both by teachers and students entering ESP courses.

Faculty of Chemistry of Brno University of Technology educates students in several branches of chemistry such as environmental protection, material science, food science and biotechnology, chemistry for medicine, and applied chemistry. The ESP courses taught at the faculty are based on needs of its alumni in industrial plants. At the beginning of the courses, students' beliefs on ESP features, on the use of English in their future career, on learning strategies employed; and on difference between general and specific language are reflected in the form of a questionnaire.

Based on information from the above questionnaires, on constructivist educational theories, and on own teaching experience, the following major difficulties occurring on entering ESP courses were specified: lack of awareness of ESP specific character; considering ESP as general "more difficult and complicated" English; insufficient transfer of knowledge and skills from general language to ESP (specifically tenses in ESP); over-confidence expressed as "My general language competence is high enough and I do not need its extension towards ESP"; (constructive) conflict of teaching and learning styles; focus on present, not future career-oriented needs.

In the workshop, the presenter will specify the above difficulties and the participants will elicit suggestions on coping with them; consequently, she will share her solutions to the above problems with them. Namely she will propose the following items: in-course discussions on

ESP character, on application of language in professional career, and on students' personal goals throughout the semester; procedures showing how to retrieve essential information from authentic texts/materials; enhancing awareness of the role of properly used language in their career (video/s on improper language performance).

## **Training debating skills in English**

**Laura Haug**

The course in Debate and Discussion in English aims to introduce master's students of the sciences to the attitudes and skills needed to conduct intelligent academic debate and interact respectfully with the opinions of others. In my presentation, I will provide a description of how the course is administered and share students' reactions to their learning process and debating experience. This practical course guides students into forming, stating and defending academic arguments on a given topic. When preparing for debates, students are supported in undertaking relevant and appropriate research backed up by efficient referencing. When participating in debates, students practice the relevant academic language needed to express their own viewpoints, ask for clarification and disagree respectfully, thereby improving their overall communication skills in the L2. Independent research, extensive reading and listening, note-taking, summarizing, integrating sources, self-evaluation, and teamwork: these academic and life skills are all inter-disciplinary and transferable.

## **Teaching English through Sustainability**

**Laura Haug**

Do you know what the 21 UN Sustainable Development Goals are? How would you define sustainability? How do you calculate your carbon footprint? The English classroom is becoming more and more a place to explore global issues, the most challenging and urgent being climate change. Following the trend at universities around the world, the Language Department of the Faculty of Science at the University of South Bohemia has decided to start a new course in English through Sustainability. The course will explore case studies that focus on the issues related to sustainability and climate change while developing reading, speaking, listening, writing, debating and presentation skills in English. Centred on the 21 UN Sustainable Development Goals, the course explores global and local issues with the aim of stimulating discussion and action to contribute to a sustainable world. During the workshop, participants will take part in some of the tasks and challenges designed for the upcoming course.

## **Teaching English to Scientists: The Divergences and Confluences**

**Jana Kubrická**

The presentation introduces the Language Centre unit at the Faculty of Science Masaryk University against the backdrop of the pandemic and recent developments in English for Specific Purposes. The talk focuses on several dichotomies inherent in ESP teaching that the

unit has had to deal with in the last decade. First, it is the narrow, subject-specific teaching versus a broader, general academic approach to content. Next, there is a trend towards greater autonomy of students competing with a more controlled way of teaching. Finally, the presentation touches upon assessment as a tool to measure students' proficiency as well as an instrument for reflection, motivation, and growth. The presenter illustrates the discussed issues with specific examples from the syllabi of ESP courses taught at the Language Centre unit and students' feedback.

## **EAP Courses at FSci USB – The Process of Syllabus Design and Materials Development**

**Klára Pavlínová**

Designing the syllabus and materials for a new course is a time-consuming and challenging process. EAP practitioners are often left to this process without much support. Furthermore, they mostly cannot use the materials available, as institutions differ in their requirements, the courses differ in their length and content, and students' needs vary based on their disciplines, experience, and knowledge. Therefore, materials have to be modified or redesigned accordingly. In the presentation, the process of syllabus design and materials development for EAP (or, more specifically EGAP) courses at the Faculty of Science, University of South Bohemia is described. The presenter will provide insight into the needs analysis process carried out both with the departments and the students. Moreover, she will provide information about the procedure of setting the priorities and learning objectives based on both the needs analysis and institutional context. She will describe how study, critical thinking, and metacognitive skills have been implemented into the syllabus, as well as how principles of autonomous learning, "semi-negotiated" syllabus, and inductive learning are applied in the syllabus and materials design. She will also demonstrate how IT technologies and VLE are used.