COLLABORATIVE
teaching and learning in an
interdisciplinary problem-based language course

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I.

ABOUT

Introduction

The publication Collaborative teaching and learning in an interdisciplinary problem-based language course details the experience of the authors with developing a specific course focusing on interdisciplinary collaboration, problem-based communication and critical thinking.

Collaborative learning in an interdisciplinary problem-based language course

Purpose

The course was designed and implemented as part of an extensive, three-year project with the support of a European Union operational programme, Education for Competitiveness, under the auspices of Masaryk University's Language Centre. It was developed for and with science students, and can now serve as a template for the collaborative teaching of language and subject matter generally.

Team

The authors of the course believe that in the 21st century, interdisciplinary collaboration is very important. The iterative processes of preparation and teaching were as strong a learning experience for the teachers as for their students. Arriving at a consensus with people from different spheres was both challenging and enlightening.

Sharing

The authors believe that their experience will be valuable for everybody who might be interested in developing a similar course. In the spirit of collaborative learning, they are keen to share not only the positive aspects but also the pitfalls they encountered along the way.

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II.

METHODOLOGICAL APPROACHES USED IN THE COURSE

Collaborative learning in tertiary studies

Graciela Sbertoli

Collaborative learning and its **objectives**

Collaborative learning is a method of instruction that basically involves grouping students to work together towards a common academic goal. The method is based on the theory that knowledge is a social construct, that educational experiences that involve interaction and social exchange, that are contextually relevant and engaging and are student-centered, lead to deeper learning.

Experts in collaborative learning[1] claim that the active exchange of ideas within groups of students promotes critical thinking and there seems to be quite persuasive evidence that teams engaged in cooperative learning achieve at higher levels of thought and retain information longer than students who work solely as individuals. This constructivistic view of learning, based on Vigotsky's theories[2], states that learning occurs when students are actively involved in the construction of new mental representations, instead of assuming the role of empty vessels waiting to be filled with knowledge. Collaborative learning creates a role shift between learners and teachers. The responsibility for the process is placed on the learner, in the role of researcher of his/her field of study. By engaging in discussion and taking responsibility for their learning, students further develop their critical thinking.

No matter how homogeneous the student teams are, there is bound to be a certain divergence in the individual views of the problems at hand. Needing to come to a consensus to progress in their work, students will hopefully both argue, try to persuade, listen to others and be critical to their own views. Such processes promote the ultimate goal of real learning, which is to construct knowledge out of information. Through dialogue and critical examination of the different perspectives in the team, the learners become more knowledgeable, strategic thinkers, and develop entrepreneurial and social skills.

The promotion of processes involving analysis, synthesis and evaluation of concepts (the building blocks of true critical thinking) is furthered by collaborative learning which is interdisciplinary. The more heterogeneous the collaborative team is, the better the results. Some other concrete success criteria are the existence of clear scripts for the collaborative

work, clear expectations, a well-defined product and a high degree of practical relevance of the product for the individual student.

The **core elements** of collaborative learning

Designing collaborative learning tasks is a discipline in itself. As many practitioners have pointed out, the benefits of collaborative learning do not happen automatically just because you put some students together to work in a group. The exact structure, script, length and objectives of the activity may vary, but there seems to be a consensus among experts that the five core elements expressed by Johnson, Johnson and Smith[3] almost thirty years ago, are still the main success criteria, the critical elements that will ensure that cooperation actually happens.

These five elements are positive interdependence, individual accountability, promotive interaction, social skills, and group processing.

A) Positive interdependence

Occurs when all members of the collaborative team are conscious of the fact that they share the same goals, that their individual learning depends on the help from other members, that working together is both individually and collectively beneficial and that both individual and collective success depends on the participation of all members of the team. If positive interdependence exists, students will learn to constantly encourage each other and facilitate each other's work.

B) Individual accountability

Needs to be built into the design to ensure that each of the students is conscious of the fact that, even though the team is working towards a common goal, the individual effort of each member of the team will be observed and evaluated. If the design of the activity makes proper provision for the existence of this element, the participants will not need to fear the occurrence of the "social loafer" phenomenon mentioned in §[4].

C) Promotive interaction

Depends on how the script for the collaborative activity has been designed. There are a

number of learning processes that may be called collaborative but which will lack this element because, even though the final collective success does depend on all participants bringing in their efforts, the process does not involve negotiations and interaction but is more or less the addition of different elements. Any type of Problem Based Learning, PBL, will be conducive to promotive interaction, because the process is likely to include the need to negotiate, persuade, discuss and come to a general consensus on the solution.

D) Social skills

Social skills, or team-working skills, include effective communication, interpersonal and group skills. They are evidenced in the way each member of the group assumes or acknowledges leadership in a process, in the dynamic processes involved in decision-making, in the level of trust built within the group, in the level of efficiency of the group's internal communication and in the level of success in conflict management. Johnson, Johnson and Holubec formulated an interesting distinction about the types of soft skills needed in collaborative learning4. Forming skills are needed to organize the group and establish minimum norms for appropriate behavior. Functioning skills are those goal oriented skills needed to manage the group's activities so as to achieve a result. Formulating skills are needed to build deeper levels of understanding of the content being studied, to summarize reflection, and enhance the retention of the assigned material. Fermenting skills enable students to deal with cognitive conflict, compare information, negotiate, communicate the reasoning behind own conclusions, and ultimately facilitate the progress from information gathering to knowledge construction.

E) Group processing

Refers to the need to encourage group participants to repeatedly evaluate the group's performance, to discuss what needs to be done differently in order to maximize the results. Even though this type of meta-level discussions may be perceived as a waste of time by some of the participants, it is important to communicate to the students that formative assessment, ie assessment of the process while there is still time to reverse processes and change structures, is an important element of their ultimate success.

Collaborative learning at **tertiary level**

Whether it is because of the mentioned reluctance among the students or because of a

similar reluctance among university level teaching staff, who tend to impart knowledge in exactly the same way as they were exposed to in their student days[5], the fact remains that collaborative learning is still a rara avis at tertiary level. Despite the fact that its positive results were shown already thirty years ago, it is only in very recent years that university staff have seriously become interested in this pedagogical approach.

Knowing that this method promotes critical thinking, deeper understanding and more permanent learning has of course been one of the reasons for this budding paradigm shift. The main and more pragmatic reason, however, is the need to train students in what has often been called "soft skills".

A fairly recent briefing note on Skill Mismatch from Cedefop, the European Centre for the Development of Vocational Training, reports on the results from the European Company Survey implemented in the spring of 2013. The note states that "some employers say they cannot fill vacancies because even highly-skilled candidates have the wrong skills. They claim education systems educate graduates of tomorrow in the skills needed in the industry yesterday. Many employers are concerned that applicants lack soft skills such as interpersonal communication and problem-solving abilities."[6]

The challenging current economic situation has made it particularly important for a new graduate to make sure that he/she can offer much more than excellent knowledge of a specific academic subject. Increasingly it is necessary for students to demonstrate other skills which may be even more important for their prospects of employment. Employability skills include: the retrieval and handling of information; communication and presentation; planning and problem solving; and social development and interaction.[7]

Johnny Rich, a media and higher education specialist in the UK, has argued that soft skills are the main ingredient in "graduateness", the level at which a tertiary level student becomes useful for his/her future work place. He therefore suggests[8] that we need a system to express how a specific higher education course will contribute to the students' development of soft skills. For prospective students, he argues, this approach would "make explicit exactly how the course will improve their employability and which jobs they would be qualified to do. For employers, it would make it clear what each candidate has to offer."

This awareness of the importance of soft skills in tertiary education is currently permeating the tertiary sector, and its connection with collaborative learning is obvious. It is, however, not always so easy to engage the students' approval of this approach. Despite the fact that many researchers into collaborative learning seem to agree that this approach enhances

the motivation of students, it is obvious that tertiary level students are often reluctant to engage in what they tend to call "group work". Partly this is because they are not really familiar with well-designed collaborative tasks, but mostly it is because of their fear that the process will involve too much time and that it may cause the appearance of the type of participants often called "social loafers", ie, students who are part of the team but do not contribute, leaving all the work to be done by the more conscientious members of the group[9] (see description of success criteria above).

Some university professors can be refreshingly pragmatic in their approach to this theme, as is the case of Richard M. Felder, Professor Emeritus of Chemical Engineering at North Carolina State University, who in his "Sermons for Grumpy Campers" meets all possible objections from the students to his favorite pedagogical approach, which is active, cooperative learning[10]. Prof Felder's hypothetical answer to a student who complains about having to work in groups because "he doesn't like it" is worth quoting here: "get that you're unhappy and I'm sorry about it, but I've got to be honest with you: My job here is not to make you happy—it's to prepare you to be a chemical engineer. Here's what's not going to happen in your first day on the job. They're not going to say 'Welcome to the company, Mr. Jones. Tell me how you like to work—by yourself or with other people?' No. The first thing they'll do is put you on a team, and your performance evaluation is likely to depend more on how well you can work with that team than on how well you solve differential equations and design piping systems. Since that's a big part of what you'll be doing there, my job is to teach you how to do it here, and that's what I'll be doing."

A collaborative approach to **interdisciplinary** language learning

Because of its emphasis on interaction and communication, collaborative learning is especially indicated for linguistic studies. Language develops in contexts of functional use. Being able to express one's needs, wants, likes and dislikes, is the fundamental goal for any language learner. When the learning process involves acquiring a language in a professional context, these basic needs translate into explaining, arguing, objecting, reaffirming, and summing up decisions. All of these are language functions which foster the students' grasp of the language.

As previously mentioned, one of the success criteria for collaborative learning is the existence of clearly defined , relevant and motivating goals. When students engaging in a collaborative learning activity, which is expressly aimed at increasing both their linguistic competence and their general level of soft skills, are told that the end result of the exercise is a

presentation in the target language at a final conference, all goals come together. Combining a collaborative learning approach in an interdisciplinary activity with linguistic training, soft skills enhancement, and the acquisition of concrete skills like making a good Power Point presentation, may be an ambitious goal, but this methodical approach has been proved to have the potential to be very successful and should indeed be further developed and multiplied.

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ESP and task/problem-based approach in English for science

Eva Čoupková

This text discusses the ESP and Task/Problem-Based methodologies and the ways in which these were employed in the course English for Science. Since the purpose of an ESP course is to prepare students for their professional life, i.e. to develop their use of English in a specialized field of science, language and science teachers designing the course decided to use subject-specific materials and topics. To enable the students to discuss real-life issues in a multidisciplinary way, we selected one concrete and local problem to work with, consider the perspectives of individual branches of science, and collaborate on the ways and methods of addressing it.

Introduction

A good characterization of an ESP teacher is given in the classic book by Tom Hutchinson and Allan Waters: "ESP teachers are all too often reluctant dwellers in a strange and uncharted land" (Hutchinson, Waters, 1994, p. 158). The reasons for the feelings of alienation many of my colleagues and I experience when trying to design and teach ESP courses are well-known - sometimes we are not quite sure whether we are teaching, say, English for Mathematics, or Mathematics in English. Even if most of us would, hopefully, opt for the first possibility, the distinction is not quite clear in all cases. Since the purpose of an ESP course is to prepare students for their professional life, i.e. to develop their use of English in a specialized field of science, and enable them to use English as the main means of communication and cooperation with partners in their expert fields, the need for subject-specific materials reflecting study programs becomes self-evident. At our department, we cater for the needs of a wide range of students of scientific subjects – biology, geology, geography, chemistry, mathematics, and physics. As our teachers prepare courses for two different levels, and sometimes even for two different subjects, the difficulties of the task are clearly manifest.

Language teachers and **ESP** – main obstacles

The main obstacle for teachers who decide to employ ESP is insufficient expertise in a specialist field. Even if some teachers are exceptions, having studied language and a scientific subject at college, the majority of them are still linguistics majors combined with a humanities discipline. Hutchinson and Waters claim that ESP teachers do not need to master specialist subject knowledge. In their opinion only three things are required:

- a positive attitude towards the ESP content,
- knowledge of the fundamental principles of the subject area
- awareness of how much they probably already know.

The authors conclude that "the ESP teacher should not become a teacher of the subject matter, but rather an interested student of the subject matter" (Hutchinson, Waters, 1987, p. 163).

However, other sources mention additional requirements for teachers, such as "the need to feel confident about subject knowledge and subject skills related to that subject", and "be prepared to answer learner's questions about subject material which may be unfamiliar to them" (Cambridge ESOL, 2010, p. 6).

I believe that a positive attitude and enthusiasm are necessary, but teachers may still need to overcome their natural fears related to the complexity of scientific disciplines. Moreover, for highly abstract disciplines like mathematics and physics, fundamental principles alone would not suffice, as they require a deeper understanding of their methodology as well. To complicate matters even more, as I discovered during my ESP lessons and when evaluating the course questionnaires, specialist knowledge is what students expect. Of course, I always state openly at the beginning of our course that I am not a specialist and would need and appreciate their help and understanding. Still, many of them think that language teachers should be experts in a scientific subject as well.

It is true that as teachers prepare and adapt materials related to the specific scientific disciplines, they learn along the way and may become learned practitioners in the field. However, this knowledge is still quite limited and not sufficient to protect the teacher from being seen by students as unprepared and incompetent, and sometimes even ridiculous. So, where can ESP teachers look for help?

Solution – **cooperation** with subject teachers?

One obvious answer would be cooperation with a teacher of the subject (Helsvig, 2012, p. 4). Developing a project based on collaboration of the language teacher and the subject teacher has its merits, but there are also obstacles to overcome. The main one is, at least at our university, a lack of funding and interest on the part of subject teachers and the faculty management. Even if the faculty policy requires subject-specific content of language seminars, there is no subject-specific support for ESP teachers.

Since our project provided the financial resources, we were able to join science teachers and language teachers in our course. Tony Dudley-Evans and Maggie Jo St John discuss three stages of language-science teacher engagement: cooperation, collaboration, and team-teaching (Dudley-Evans, St John, 1998, p. 46). Our project included all steps mentioned by the authors:

- cooperation - this was advertising our course and contacting the departments or individual teachers to invite them to join the project.
- collaboration - which involved mainly outside class meetings discussing the planning of a series of classes and deciding on the input materials.
- finally and mainly, there was the team-teaching stage in which the language and subjects specialists worked together in the classroom.

Dudley-Evans and St John list three conditions than are essential for the project to develop successfully and last for some time:

- firstly, to clearly define the roles of teachers, which is important even for a team-teaching group of two teachers, let alone our number of 14 teachers altogether.
- secondly, the programme should make relatively few demands on the time of subject teachers. In this respect, the preparation of our collaborative course was extremely time-consuming both for the subject and language teachers. It is clear that careful preparation of group meetings and time-management are of prime importance.
- lastly, the authors stress the mutual respect between subject and language teachers, and the acceptance of the other's professionalism in their area of specialization, since "where there is suspicion or hostility, collaboration or team teaching is unlikely to be successful" (Dudley-Evans, St John, 1998, p.47). We found out in the course of our work with specialists that this respect and understanding is vital, but difficult and painful to achieve. However, the effort is worthwhile, since, as both subject and language teachers agreed in the end, the experience was truly enriching for both sides.

Key stages in ESP in our course

All the key stages in ESP (needs analysis, course design, material selection, teaching/learning and evaluation) (Dudley-Evans, St John, 1998, p.121) have been covered. Stated briefly, the aim of the course was to address both objective and subjective needs of students (Dudley-Evans, St John, 1998, p.123). Objective needs meant the necessity to solve research problems interdisciplinarily and be able to work and communicate with researchers from related scientific disciplines. Subjective needs comprised the motivation of students to improve their presentation skills and practise English in a scientific context.

The main challenge facing course designers when planning the syllabus and selecting appropriate materials to work with was the heterogeneity of the group - both in terms of different disciplines involved and various language-competence levels of students. The question of balance then had to be considered carefully – especially the proportion of subject specific material that was interesting for specialists and students of the specific discipline, but too narrow and focused for other disciplines, and the common-core material. The proportion of language and science was also an important issue, as the course was mainly language-oriented. However, some students felt that preference was given to science, specifically to some fields of science that were closer to the overall topic of the course.

Selecting materials that would stimulate and motivate students was another task where the different approach of specialists and language teachers manifested itself. Science teachers tended to suggest discipline based articles that were interesting, informative and challenging for students, but in some cases not quite achievable in terms of complexity, length, or scope. Therefore a careful choice of materials had to be made, sometimes compromising a little the ambitious expectations of some scientists, so that the text would be appropriate, and, at the same time, provide opportunities for the language development.

In the teaching and classroom practice, we used not only language-learning activities, but also specific tasks and activities that reflected the methodology of specialist disciplines. Dudley-Evans and St John mention the integration of language learning and subject learning approaches as one of the main strengths of ESP methodology (Dudley-Evans, St John, 1998, p.192). In our course we employed the typical procedures of all disciplines – reporting, data analysis, predictions of future developments, interpreting graphs, important criteria selection – to enable the students to solve a specific subject-related problem and prepare a presentation for a scientific conference.

Implementing **task/problem-based** approach

As is evident from the preceding paragraphs, we tried to combine both ESP and Task/Problem-Based approaches. Problem-Based courses and curricula are generally designed to enable learners to understand and solve real-life problems (Ross, The Challenge, 1997, p. 28). This aspect was a key concern for us, since, in our country, education at many schools is more theoretical than practical, providing students with a quantity of detailed information that they are not able to implement later in real life. The second aim was to create an environment in which students of all scientific disciplines could cooperate on a solution of one concrete problem. Again, despite the fact that multi-disciplinary strategies are quite common nowadays, and many fields of science join in addressing complex questions facing us in today's world, the students of individual fields of science at our faculty tend to be rather isolated, not having or creating enough opportunities to work with their colleagues from different branches.

The selection of a problem to deal with was a complex question in itself to solve. Firstly, we wanted the problem to be concrete and local, something the students from Brno and its surroundings could identify with, and also interesting and motivating for those coming from other parts of our country or abroad (mainly Slovakia). Secondly, it was necessary to choose a topic that would provide enough stimuli in terms of discipline specific and more general questions.

After a long discussion we agreed to concentrate on the Brno Reservoir - the major landscape, environmental and tourist-attraction feature of our area - and the consequences of its colonisation by cyanobacteria. We used this as a "trigger" (Lovie-Kitchin, The Challenge, 1997, p. 204) in the form of short talks given by specialists who were addressing the main issue from the perspectives of their disciplines. Then the students were asked, individually and in their small interdisciplinary groups, to identify possible problems and implications they would like to discuss. As we have discovered, students were well able to address questions related to their branch of science, develop a number of possible solutions, and even discover new materials relevant to the main topic. However, it was far more difficult for them to see the problem in its broader, interdisciplinary context. They had to be strongly encouraged to communicate and negotiate with students of different fields, trying to understand methods and approaches used in other branches, and explain complex concepts in a simple, comprehensible way, in other words – "to think and step outside their box".

To sum up, the main advantages of the approach, as seen by teachers and expressed by

students in their comments and feedback on the course, are the following:

- working with real-life problems and situations
- development of a number of alternative solutions to the problem
- interesting and engaging classroom environment
- more responsibility and independence of students
- multidisciplinary methods and approaches
- language specific to individual disciplines
- final conference as a real academic-life event.

Conclusion

To conclude, we should admit that the employing the ESP and Task/Problem-Based approaches in our collaborative classes was often difficult and frustrating, and all the teachers had to learn along the way to adapt and get used to this new methodology. However, we think, and the reactions and feedback of students have proved it, that it can be stimulating and beneficial both for the teachers and learners. We can therefore agree with Dudley--Evans and St John who argue that "if we are to meet students' needs we must deal with subject/specific matters" (Dudley-Evans, St John, 1998, p.51).

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Theory of CLIL
Robert Helán

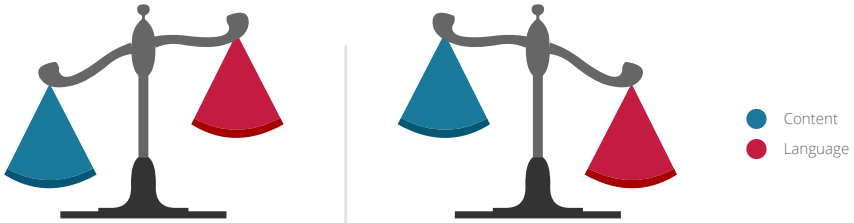
This article summarizes the main pedagogical principles behind content and language integrated learning. It focuses on learning outcomes in CLIL lessons and reasons why CLIL is an effective teaching approach. In addition to presenting some of the theoretical concepts used in CLIL such as the "4Cs framework" and "language of/for/through learning", it demonstrates how these concepts were applied to our CLIL course at Masaryk University.

What is **CLIL**

The acronym CLIL stands for Content and Language Integrated Learning. The term was first used in 1994 as an umbrella label for a variety of language teaching approaches such as immersion, bilingual education and enriched programmes. To put it simply, CLIL is a pedagogic approach in which content and language are combined together. To give an example, school or university subjects such as biology or geography are taught via English.

Learning outcomes in **CLIL**

Some CLIL lessons may put more emphasis on the content learning outcomes – they may be planned around the curriculum of the school or university subject. Such lessons would be referred to as subject-led. Other lessons may focus more on language learning outcomes – they may be planned around an EFL/ESL (English as a foreign/second language) course. These would be referred to as language-led.



subject-led/content-driven CLIL
(e.g. bilingual schools in which some of the subjects are taught in English)

language-led/language-driven CLIL
(e.g. English language teaching focusing on discipline-specific topics)

The CLIL course taught at MU within the IMPACT project was balanced equally regarding language and content learning outcomes. As for content, the principal aim of the course was to develop students' understanding of the issue of cyanobacteria in the Brno Reservoir, employing an interdisciplinary approach drawing on geology, geography, mathematics, physics, chemistry, and biology. As far as the language was concerned, the aim was to develop students' presentational, writing, and discussion skills in addition to discipline--specific lexico-grammatical knowledge (e.g., terminology in chemistry and the use of the passive voice in scientific abstracts).

Why CLIL

Firstly, CLIL courses are effective in that they manage to attain two objectives: students learn a subject through the medium of a foreign/second language and at the same time they practice old and acquire new language. Secondly, CLIL encourages problem-based learning combined with authentic and contextualized materials, thus installing in students a hunger to learn. Thirdly, CLIL foregrounds collaboration between students when solving authentic problems and between subject and language instructors when preparing teaching and study materials. Finally, CLIL methodology develops higher-order skills by involving students in activities in which they have to apply these skills (such as creative thinking, critical evaluation, or hypothesizing).

The **4Cs framework**

The 4Cs framework, introduced in 1999 by Do Coyle, can be used to think about learning outcomes in lesson planning. The 4Cs stand for Content, Communication, Cognition, and Culture. Although they are closely related, it is helpful to consider them separately in lesson planning and when CLIL instructors determine learning outcomes in a higher-education context.

Content

- students learn about concepts, theories, and methods in particular fields/subjects
- students use subject knowledge to collaborate on completing specific tasks
- instructors employ a cross-/inter-/multi-disciplinary approach

Communication

- students interact during task-based, cooperative learning
- students use language of/for/through learning (see below)
- students practice both subject-/discipline-specific and general academic language (see below)

Cognition

- students develop their thinking skills by exploring new theories and concepts
- students develop both higher-order (e.g. creative thinking) and lower-order (e.g. classifying) thinking skills
- instructors analyze the content for opportunities to help students develop their thinking skills

Culture

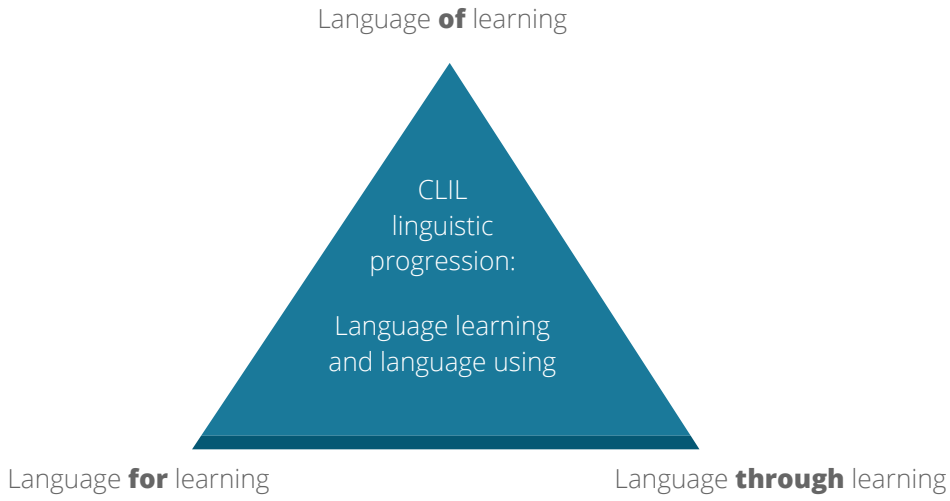
- students develop their awareness of both their own society and other societies
- instructors help students develop their awareness of disciplinary cultures (e.g. writing conventions)
- not all CLIL lessons can have this focus.

Demonstration of the 4Cs analysis in a CLIL activity

CLIL activity (from our CLIL course)	The 4Cs framework
Students read a conference abstract on cyanobacteria and how they impact water pollution. They work in groups to analyze it in terms of grammar and vocabulary. Then they are asked to write their own conference abstract.	**Content:** cyanobacteria, water pollution (topic from biology and hydrology) **Communication:** reading, interacting, discussing, writing **Cognition:** analyzing, interpreting, applying theory to practice **Culture:** learning about how abstracts are written in a specific culture (US or UK) and discipline (biology)

Language **triptych**: language of/for/through learning

Communication – one of the 4Cs – includes awareness of the language triptych when planning CLIL lessons: language of/for/through learning.



Language **OF** learning

What language students will need to access new knowledge and understanding when dealing with the content.
Example from our CLIL course: content language such as discipline-specific vocabulary-/terminology, phrases and grammar related to the topic (e.g. cyanobacteria, Brno Reservoir, water cycle, etc.).

Language **FOR** learning

The language needed by students to operate in a learning environment, language needed during lessons to carry out the planned activities effectively.
Example from our CLIL course: language to work successfully in groups (e.g. phrases for agreeing or disagreeing), language for presentations (e.g. introducing a topic, concluding), language for writing abstracts (e.g. conventional metalanguage).

Language **THROUGH** learning

Extending students' language functions and notions, further development, students access new language for themselves.
Example from our CLIL course: corpus linguistics skills (e.g. using Sketchengine for autonomous language learning), advanced presentation skills (e.g. focusing on effective introductions and conclusions), conference skills (e.g. strategies for coping during the Q and A session at a conference).

Subject-/discipline-specific and general academic language

When planning a CLIL lesson, instructors should be aware of the fact that students need to know the language of the particular subject/discipline they are going to study. This is called subject- or discipline-specific language. However, they also need to be able to recognise and produce general academic language so that they are able to explain ideas, analyse data, describe processes, write abstracts, etc.

Demonstration of subject-/discipline-specific language (**marked red**) and general academic language (**marked blue**) in an abstract used in our CLIL course:

(1) **Dominance** by **cyanobacteria hampers human use** of **lakes** and **reservoirs worldwide**. (2) **Previous studies indicate** that **excessive nutrient loading** and **warmer conditions** promote dominance by **cyanobacteria**, but **evidence** from **global scale field data** has so far been **scarce**. (3) In this **paper** we **show** that although **warmer climates** do not **result** in **higher overall phytoplankton biomass**, the **percentage** of the total **phytoplankton biovolume attributable** to **cyanobacteria increases steeply** with **temperature**. (4) Our **analysis** is **based** on a **study** of 143 **lakes** along a **latitudinal transect ranging** from **subarctic Europe** to **southern South America**. (5) Our **results reveal** that the **percent cyanobacteria** is greater in **lakes** with **high rates** of **light absorption**. (6) This **points** to a **positive feedback** because **restriction** of **light availability** is often a **consequence** of **high phytoplankton biovolume**, which in turn may be **driven** by **nutrient loading**. (7) Our **results indicate** a **synergistic effect** of **nutrients** and **climate**. (8) The **implications** are that in a **future warmer climate**, **nutrient concentrations** may have to be **reduced substantially** from **present values** in many **lakes** if **cyanobacterial dominance** is to be **controlled**.

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Authentic materials

Markéta Kovaříková

This article reviews the issues, experience and final outcomes of an ongoing discussion on the topic of authenticity and the development in the use of authentic materials in a three--year content-based course of collaborative learning within the IMPACT project. After an introductory description of what authenticity and authentic materials are, the paper continues with an overview of the reasons for and the purpose of the use of authentic materials as well as the aspects of the use of these materials and their types. The article concludes by illustrating the background of the course concerning different views of material choice and design and offering a number of practical tips to be used when planning a course of a similar nature in tertiary education.

The role of **authenticity** and **authentic materials** in content-based courses

The following article describes the importance of authenticity and the role which authentic materials played in the content-based and science-oriented collaborative course within the IMPACT project. The introduction gives a brief overview of what makes materials authentic and what authenticity means to language teachers and students. It proceeds to review the strategies and criteria for choosing and using materials. This is based both on our experience and is supported by publications written by ELT experts. Finally, it reports on the outcomes of putting the use of authentic materials in practice throughout the three runs of the course.

Nowadays, the notion of *authenticity* has become a popular term in ELT, and it is widely promoted in the literature as a key to success when teaching English on any level and to any target group. However, it is important to understand that authenticity and the role of authentic materials (AM) may differ, taking into account the nature and the different goals of courses. For instance, CLIL (content and language integrated learning) courses do not see foreign language learning as the object of study. On the contrary, the content-based and collaborative courses, such as the one described here, aim particularly at foreign language development and learners' learning process where the subject and its content

serve as the common ground and source of motivation.

Although, as can be seen in the following anonymous comment on the online article *Throw away the course book and adapt authentic materials*, the use of authentic materials might has its opponents: "*Authentic materials are great... BUT.... it can be hours of work to adapt them, and when you consider sometimes 2 to 3 hours of work for every hour spent in the classroom, they become less appealing to prepare, although this, of course depends on your teaching schedule*.", language teachers include them in ELT courses and syllabus design.

In simple terms, the use of AM needs to be learnt if one wishes to take into account the learners' specific needs, develop learners' communicative competence, and scaffold and enhance learners' learning processes.

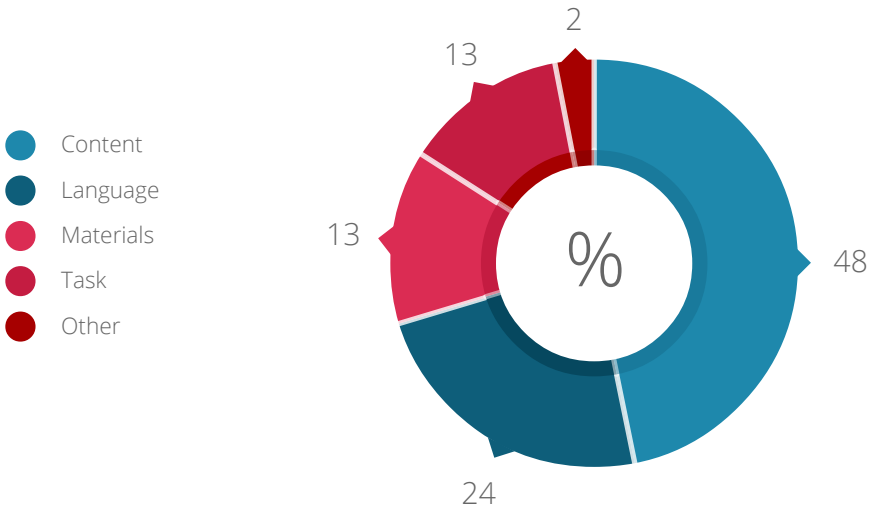
The existing definitions of authenticity and authentic materials are controversial. As can be seen in most papers dealing with these issues in ELT literature, their meaning and usefulness vary considerably and range from non-critical: "*Authentic texts can be motivating because they are proof that the language is used for real-life purposes by real people.*" (Nuttall 1996), to critical: "*As soon as texts, whatever their original purpose, are brought into classrooms for pedagogic purposes they have, arguably, lost authenticity.*" (Wallace 1992)

This course merged several of the definitions of authenticity into one that, apart from the authenticity of text, also implies the authenticity of language, interaction, situation, task, output and other. It stems from the claim that authentic texts have been defined as "*real-life texts, not written for pedagogic purposes*." (Wallace 1992) They are therefore written for genuine communicative purposes and contain "*real*" language. These are "*...materials that have been produced to fulfil some social purpose in the language community.*" (Peacock 1997). In contrast non-authentic texts are tailored for language learning purposes, and so their language is artificial and does not obey the norms of patterns of normal usage, concentrating on something that has to be taught. This is referred to as "skewed input" and has not been demonstrated to improve students in the target language feature. All of these definitions were incorporated in and reflected on our course policy based on the content-driven approach and collaboration leading towards an authentic outcome, namely a scientific conference.

Fortunately, the understanding of the term *authenticity* and its perception by students need not be a determining factor for a successful language learning process. Based on research done by Richard Pinner (2013) in an international CLIL on one hundred and three respondents, many students express confusion about the term "authenticity". When asked

about the factors that contribute most to authenticity, almost half of the students replied *content* and precisely half answered *language, materials, and task*.

What contributes to autenticity? (n = 103)



This means that as long as most of the previously mentioned aspects of authenticity – namely content, text, language, interaction, situation, task, output – remain intact, language awareness as well as gradual language and language skills development are ensured.

The use of authentic materials itself implies two contradictory approaches. Firstly, AM represent real language exposure to the up-to-date information that students work with in their field. They are likely to contain topics of interest which can in turn be expected to be as motivating. Secondly, AM come in a wide variety of text types which affords many opportunities for teaching. Thirdly, they are ideal for practising micro-skills, which in. reading, for example involves scanning and skimming. There are however some negative aspects that go hand in hand with the choice and adaptation of AM by teachers and their use by students. Choosing and adapting AM is time consuming and requires special preparation. Once the texts are adapted, they lose their authenticity; furthermore many can soon become out-of-date. The materials can be too difficult to understand, may contain too many structures within one text and also vocabulary which might not be relevant to all. As a solution, some experts suggest adjusting the text, some the task, some suggest setting the language level slightly above students' knowledge to challenge the students, some slightly below to secure the positive progress, some suggest the challenge and support in both text and task need to be balanced in order to promote effective learning. There is no

one size fits all approach and the teacher is ultimately left to make their own decisions based on the theories of language, language acquisition and approaches to teaching that they have arrived at through experience.

In spite of this, AM were worth using in our collaborative learning content-based course, as the negatives were essentially outweighed by the positives. What seemed to be an initial disadvantage of the use of AM to some of the teachers in the course, was soon seen as a motivating force and challenge for them as well as a benefit for the students as it induced a more creative approach to teaching. Though the SWOT analysis done after the first run of the course revealed some drawbacks connected with using AM, such as the high amount and excessive length of texts used, difficulty of tasks, lack of disciplinary balance, time management issues leading to problems with deadlines, when doing the feedback on the last run of the course, the students appreciated the use of AM. Exposing the students to real language, giving authentic content-based information, and relating more closely to students' needs had a positive effect on their motivation and promoted their learning progress.

The ways in which authentic materials were used in our course, i.e. supplying students with meaningful and real world tasks, emphasizing problem solving, encouraging team work, and involving knowledge development, supported the main concept of the course from the very start. In addition to this, the integration of language and skills practice was designed to prepare the students for and guiding them towards the final output, namely the student conference, as noted above.

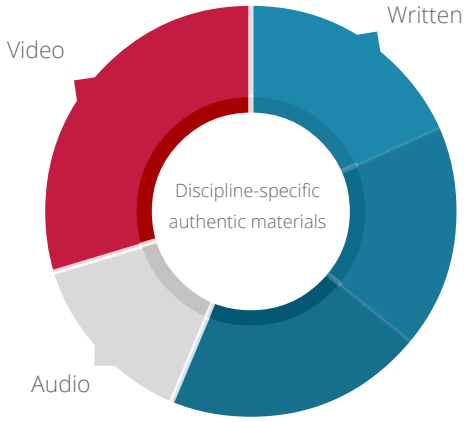
Working with students' motivation, be it intrinsic and extrinsic or individual and group or course-specific and teacher-specific, deciding on which and how to promote and influence, does play a major role in second language acquisition. While success in language learning can be promoted by factors over which teachers have little control, such as the students' initial self-confidence and determination or the duration and intensity of exposure to the target language limited by the timetable, there are some such as working environment, positive class atmosphere and choice of stimulating materials which are fully under teachers' control.

The final issue to be addressed is what materials to use and how to choose them. In general, we adopted a policy based on the tips Jeremy Harmer (2007) proposes to English language teachers in general. This means opting for materials that integrate skills and activate schemata, starting with short texts and later heading towards long ones, employing firstly top-down (content-oriented) and secondly bottom-up (language-oriented) approach,

using materials based on real-life types of texts, i.e. samples preparing students for topics which they are likely to encounter during their career, studies and work, and letting students decide on, use and present materials of their own choice.

Experimenting with various AMs eventually brought us to a consensus, and a bank of various materials was created. They are represented in the table below:

- equations, chemical formulas, graphs, pie charts, maps
- pictures, photos, leaflets, brochures
- popular magazines, scientific articles and journals, (online) newspapers, websites, blogs
- podcast, radio programmes
- videoclips, TV/online programmes, university lectures, TED presentations



When designing a course syllabus and deciding on the course book to use, teachers are trained to apply a set of criteria to analyse and evaluate the material critically. A similar procedure needs to be performed when choosing authentic materials. What proved to be effective in our work were the following important factors in choosing authentic materials - suitability of content, exploitability, readability, variety, and presentation - and the set of questions to be used as a check list, all created by Nuttall (1996).

Suitability of Content

Does the text interest the student?
Is it relevant to the student's needs?
Does it represent the type of material that the student will use outside of the classroom?

Exploitability

Can the text be exploited for teaching purposes?
For what purpose should the text be exploited?
What skills/strategies can be developed by exploiting the text?

Readability

Is the text too easy/difficult for the student?
Is it structurally too demanding/complex?
How much new vocabulary does it contain? Is it relevant?

Presentation

Does it "look" authentic?
Is it "attractive"?
Does it grab the student's attention?
Does it make them want to read more?

Once we got accustomed to this process of AM choice, we decided to create our own set of essential rules which are important to bear in mind when sharing a course with subject teachers:

Authentic materials need to be used

- through regular exposure
- both in-class and for homework
- as a model – promoting subject-based language
- in science/research – as a source of information and data
- in language – as a source and a model of correct vocabulary, grammar, style, formality

This brings us back to the initial design of the course. One of the reasons for resorting mostly to AM was the specificity of our topic. Although the topic of cyanobacteria is a worldwide problem, linking this issue to a regional water reservoir resulted in a lack of materials written in English. This proved to be both advantageous and disadvantageous. On the one hand, as the topic-specific materials were non-existent, there were no materials to be readily taken and used, which offered us both a wide space for tailoring the course to our specific needs and an absolute autonomy in the choice of materials. On the other hand, the variety of AM available was too vast and, at the same time, required remarkable alterations and adapting. What was most important, however, was that the ideas and aims of using these materials of language teachers differed from those of the subject-experts to a great extent.

Designing a course with a wide range of conflicting expectations soon became impossible to juggle. Over the course of three years our expectations changed. We had to abandon the idea of shifting the responsibility of the choice of AM completely to our students and/or subject teachers. We learned that the main condition for making a collaborative learning course successful is mutual agreement and collaboration between the language and subject teachers. By setting our language teaching aim first, informing and/or involving our subject colleagues, and consequently checking that the aim is achieved brought us to the point where just listening to and showing respect for each other's expertise was the key to success.

To conclude, the success of using authentic materials depends to a great extent on how meaningful and challenging the materials are, how well both language and subject teachers can design and present the task, and how well the materials are exploited in the class with respect to the output. It is crucial to correctly decide on an appropriate text length, its language level, difficulty of vocabulary, timing, feedback and other important factors. Bearing in mind the practicality and feasibility of using authentic materials and preparing and setting tasks with motivating factors in mind ultimately determines the quality of the collaborative teaching and collaborative learning process.

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Introducing corpus software and data as a resource for academic writing

James Thomas

This article describes one part of the language development work as it was undertaken within the IMPACT project. Some of it was experimental inasmuch as aspects of the approach and some of the activities had not been previously used with students who were not majoring in languages. The amount of time available within the teaching semester was quite limited as the multi-faceted nature of the course gave the students a wide variety of language experiences. The work described in this article represents only one aspect of the course.

The majority of scientists the world over are required to describe their work in English, which many find demanding, frustrating, time-consuming and expensive – others resent the fact completely. There are those, on the other hand, for whom writing formal papers in English is no more problematic than it is for native speakers – remember that few native speakers of any language are taught to write academic prose.

The language of academic prose involves all aspects of the so-called "Hierarchy of Language", namely morphology, words, phrases, clauses, sentences and text.
Hierarchy

To varying extents, the language of each of these levels is influenced by factors such as the text's tenor, field and mode (from Halliday's Systemic Functional Grammar, 1985).

- **Tenor** refers to the participants in a discourse, their relationships to each other, and their purposes.
- **Field** refers the subject matter or content being discussed.
- **Mode** refers to the channel (e.g. writing, video-conference) of the communication.

These contextual features can be observed in science papers when authors take into account the assumed knowledge of their readers, and whether the text is to sound encyclopaedic or like a discussion paper, how much detail to include in the required length, the differences between conference proposals and book chapters, and what their paper is announcing to the world. Furthermore, there are stylistic requirements and conventions of editors and publishers which must be obeyed.

Taken together, this means that authors have to make many choices at every stage and level of the writing process. Scientists who have **a sound knowledge of general English** across the hierarchy for language are well-placed to make genre choices that meet the requirements of science writing. To teach such scientists to write academic prose in English, the first step is to raise their awareness of the scientific linguistic menus that they can choose from. Those who read widely in their field in English typically develop a sound intuition about academic prose. This is a sound starting point.

Making choices requires criteria. For example, how is the decision to use *sped up* instead of *speeded up* made? Or if to use *mouses* instead of *mice* for the computer peripheral? These are basic morphological choices. Do sentences begin *First...*, *Second...*, or *Firstly...*, *Secondly...*? This is stylistic convention. In the following extract, the author made a choice to use past tense for a 1957 event and the present for 1959, even though the text was published in 1986 when the time distance did not warrant this contrastive use of tense.

> Skinner (1957) argued that language was learned through a process of stimulus-response, with large amounts of controlled repetition. Chomsky (1959) argues that language could never be learned in this way, and that we are all endowed at birth with a language acquisition device which provides essential assistance in the learning process. (Riddle 1986)

When scientists write for the general interested public, the text says that *something is the case*, but when writing for other specialists, *something seems to be the case*. Linguists refer to this sort of linguistic caution as "hedging", which can be expressed using certain words and phrases, by using modal verbs and adverbs and by other grammatical resources. Authors need criteria for choosing from this menu.

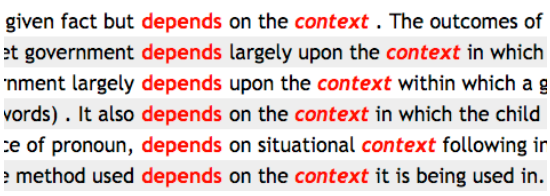
It is therefore necessary to provide science writers with criteria. Language is a multi-faceted phenomenon and its facets are often interdependent. They require considerable deconstructing to reveal the discreet units that are employed to meet the requirements of the genre. This is what teachers and textbooks aim to do. But the richness of language comes

at a cost. No teacher, no textbook and no course can cater for every writer's needs in every situation that they find themselves in during their professional lives. Teachers and textbooks can however, equip learners with skills to become independent. This involves such metacognitive strategies as selecting what is important to learn, planning one's learning, and most importantly, becoming familiar with resources and online tools.

The most standard, traditional resources in use are dictionaries and grammars. People need to know what information they can find in them and how to use them. And they need to understand if these resources do not answer their questions, they can also search corpora, as we are about to see. In fact, contemporary dictionaries and grammars are written using corpus data, but space does not permit them to include every piece of language information that is available. The authors of these resources also have to make choices. What we find in our own corpus searches is the raw data that these published resources use.

Fortunately, scientists are accustomed to working with data. They form research questions, obtain data, process it and draw conclusions. They share their conclusions, get feedback and reconsider them. Fortunately, language can be treated as data, especially when stored in databases. Databases of texts, so-called **corpora** (singular *corpus*) are constructed for specific purposes. A corpus might be a large sample of general language that was produced between 2000 and 2005, or it might contain a bunch of texts concerning black holes or child soldiers or Roma integration or eutrophication or any tenor, mode or field in the world – as long as there are texts that can go into a corpus. There are specialised search tools for corpora called **concordancers**, which search for words and phrases, reveal language patterns that intuition generally cannot, and furnish examples corresponding to the language question. The biggest challenge is knowing how to formulate answerable questions.

Here are two screenshots from Sketch Engine, the tool that is developed at Masaryk University. It is not only a multipurpose concordancer, but it has many corpora ready to use and tools for making your own corpora. The first screenshot here shows the phrase depends on... context, in its **Key Word in Context** view (KWIC).


given fact but depends on the *context* . The outcomes of
et government depends largely upon the *context* in which
nment largely depends upon the *context* within which a g
vords) . It also depends on the *context* in which the child
e of pronoun, depends on situational *context* following ir
method used depends on the *context* it is being used in.

Using this, an author can see a range of examples to help them make a decision a about

incorporating some form of it into their writing. Live example: ske.li/bawe_depend_on

The second screenshot shows a word sketch of the word data. It shows the most significant adjectives, verbs, nouns that are typically used with it, and it shows these in the grammatical relationships that they have with data. Clicking on an underlined numbers opens a KWIC view of the two words. Live example: ske.li/bawe_ws_data

data *(noun)*
British Academic Written English Corpus (BAWE) freq = 4,981 (597.5 per million)

modifier	1,729	1.3	object_of	1,463	3.0	modifies	776	0.7	pp_obj_of-I	614	2.1	subject_of	463	1.9
experimental	66	9.81	collect	143	10.88	collection	73	10.57	set	67	9.47	collect	24	9.05
raw	31	8.92	obtain	82	9.25	set	44	8.79	collection	12	8.12	set	60	8.71
empirical	31	8.81	gather	27	8.9	sheet	14	8.24	amount	41	7.92	gather	9	8.44
quantitative	28	8.79	analyse	43	8.74	encryption	8	8.16	reliability	8	7.84	record	10	7.71
input	28	8.0	process	26	8.58	acquisition	15	8.15	availability	8	7.83	support	14	6.86
observed	13	7.82	record	27	8.43	transmission	9	7.95	spread	6	7.47	suggest	24	6.69

Knowing how to learn from corpus data is a skill that equips people for life. There was a modest attempt in the IMPACT course to introduce science students to using corpora.

Here are three sentences from one abstract submitted by four students participating in the IMPACT project. This text, which if truly collaborative, indicates that there are four students who do not have a sound grasp of general English. The spelling mistakes suggests that they either do not know how to use a word processor's spell checker, or they don't care, both of which raise some concern.

The aim of this section is to show corpus data demonstrating standard and non-standard usage.

> *1. Algal bloom is a rapid increase in the population of algea and its occurence in the Brno reservoir is problematic.*

While rapid increase in is well-attested in the BNC with 63 hits, it is never in the role of complement, as in this standard English structure: subject – verb – complement. The clause at the beginning of their sentence, *be a rapid increase in* occurs 9 times, but always preceded by *there*. Of the 317 times that *be an increase in* occurs (without an adjective), 216 are preceded by *there*.

Another problem in this sentence is the collocation, *problematic occurrence.* This does not

occur in the BNC at all. The nouns that are problematic include so-called "general nouns", e.g. nature, area, aspect, situation, concept, relationship, issue.

Sentence 2 is the next sentence in the same abstract.

> *2. Such growth not only affects recreation or drinking water supply, but as well the aquatic ecosystem.*

The relationship between *increase* and *growth* is admirable, as is the use of such. So is the use of *not only ... but also...* But the use of *or* is strange because they mean *and*. The most important language to learn from this sentence, however, is the use of *as well*, which always occurs in final position. This is indicated in corpora by punctuation. Of the 558 occurrences of *as well* in the BAWE corpus not followed by *as*, 367 are followed by punctuation. Those that are not, are mostly conjunctions and auxiliary verbs, almost never lexical words [ske.-li/bawe_as_well_freq].

It is almost inconceivable that four masters level students could be responsible for the next sentence.

> *3. Collected data we analyze take in consideration the depth of water, the location in the reservoir and as well record the influence of the reservoir on the river Svratka.*

English is a **S V O** language. Only under the influence of certain discourse level constructions is **O S V** used, which is not the case with "Collected data we analyse". In the BNC *collected* data occurs 14 times, never at the beginning of a sentence or clause. Of these 14, *collected* is an adjective three times only. We saw in the word sketch above, the verb <=> noun collocation *collect data* 389 times, and the compound *data collection* 2,506 times.

Their O V S structure is clearly a direct translation from their L1 which readily permits this syntax.

It is difficult to know who *takes* and who *records*. The intended chunk is *take into consideration* (238 hits) not *in*. Once again, the use of *as well* is problematic.

The last part of the sentence, *record the influence of something on something* is fine. Even better with a grammatical subject with a subject.

What we take from these corpus-based analyses, apart from the linguistic information

about patterns of normal usage, is that a considerable amount of linguistic metalanguage is required. This is not just terminology for its own sake, but a sophisticated conceptualisation of language.

It helps to think of language as a network of probabilistic patterns rather than rules, which is not a new conceptualisation of language. The empirical language data that corpora provide has driven this pattern approach in most fields of contemporary linguistics, but it has not made much of an impression on the last half century's teaching practices. An advantage of thinking of language as patterns is that we have something concrete to search for in corpora relevant to our field.

In fact, at the beginning of the project we started making an "IMPACT" corpus consisting of recently published articles from the fields in which our scientists work. Unfortunately, they did not provide many texts and this aspect of the project was abandoned. There was also a problem converting pdfs and assigning metadata such as author, title, field to each document. The aim of working with a subject specific corpus is to facilitate the contextual observation of words and phrases that are peculiar to a field. Some of them are found in general corpora but mostly in general, non-scientific language.

We also find in the analysis of the three student sentences, that learning to use Sketch Engine software to find this information requires time and training. This is true of learning to use to best effect all the features of any new piece of equipment. Like any piece of equipment, the basic features of Sketch Engine can be used immediately and to great effect.

Although this was not possible within the IMPACT project, the students were introduced to the issue of language as data, and asking it questions to find answers to questions that involve choosing between possible and probable wordings. In fact, the very notion of possible vs. probable is central to modern linguistics. We are mostly interested in what is said, not what can be said. This follows from the above-mentioned dichotomy of systems and rules.

There are many coursebooks that teach academic prose, but they generally assume that learners have a solid grasp of the basics of English, and that they are ready to learn features of academic prose such as paragraph structure, hedging, the first person (to be or not to be), sign-posting, and more mechanical matters such as indentation, footnotes and citations. As the above extracts of students' work demonstrate a great deal of work on the basics of English is also necessary..

The main writing task the students undertook was the writing of abstracts. They were submitted in Word and corrected with Track Changes. This allows novice authors to see their original and the corrections/suggestions at the same time. Upon receiving their work back, they need to decide which ones to accept and reject to make their final copy. This requires them to process the teacher's comments, which involve higher order thinking skills. The process of commenting on their work was captured using a screencast programme called JING. Not only did the students see suggestions in Word, but they could also listen to the teacher discussing language issues. Furthermore, the process of making these mini-videos permits pausing, during which the teacher can find corpus examples, online dictionary pages, and demonstrate how these resources can be gainfully employed at a specific point in their writing. Viewing statistics however reveal that some students did not open these videos even once, and very few looked at anyone else's which was a wasted opportunity. Links to some of these videos can be found on this page: http://bit.ly/texts4errortagging

It was not only students who were introduced to this contemporary approach to language study. So were the scientists and the other language teachers involved in this project. Few seemed to be in any doubt as to its worth, but there is no evidence of their use of corpus data in the worksheets they produced or in checking written work that the students produced. Most people are still content with their non-native speaker intuition.

The project also offered several one-day courses in the use of corpora through Sketch Engine. Separate days were offered to language teachers and to scientists. These groups exhibited great enthusiasm during the actual courses, although it is not possible to asses the long term impact.

To conclude, it is acknowledged that incorporating new thinking about language and learning to use such software requires systematic training over an extended period. There is only one book that teaches people how to use Sketch Engine to ask and answer language questions. It is called Discovering English with Sketch Engine [http://bit.ly/versatile_deske] and was published in May 2005, too late for the Impact project. The onus for such training does not lie with students, but with teachers. Students will study language in any way that their teachers advocate, and not inducting students into corpus use is depriving them of a resource that will equip them for life.

III.

INTERDISCIPLINARY COLLABORATIVE COURSE FOR SCIENCE STUDENTS

Target group

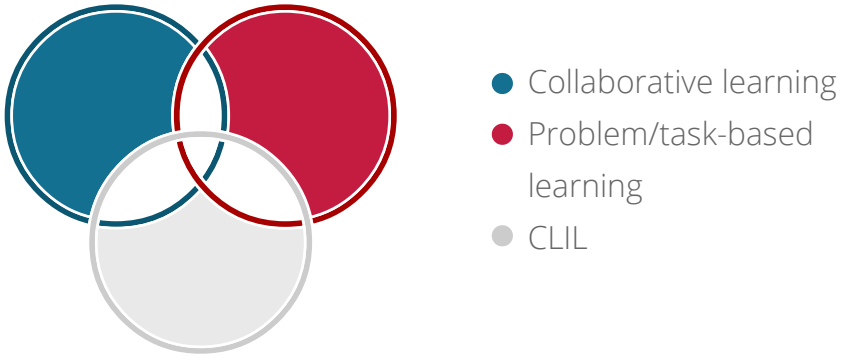
Our students from the Science Faculty study biology, chemistry, geography, geology, physics and mathematics. The course was originally aimed at Masters students with a B2 level of English. In reality, the groups turned out to contain a mixture of bachelors, masters and even some doctoral students. This heterogeneity brought with it a wide range of language levels, from B1 to C1. This did not hamper the collaboration, rather it encouraged mutual sharing and interactivity.

Course aim

The aim of the course was to bring together students of different scientific disciplines with field specific tutors and ESP language teachers to deal with an authentic scientific problem and to address it exploiting the contributions that each field could make. English was used as a communication tool.

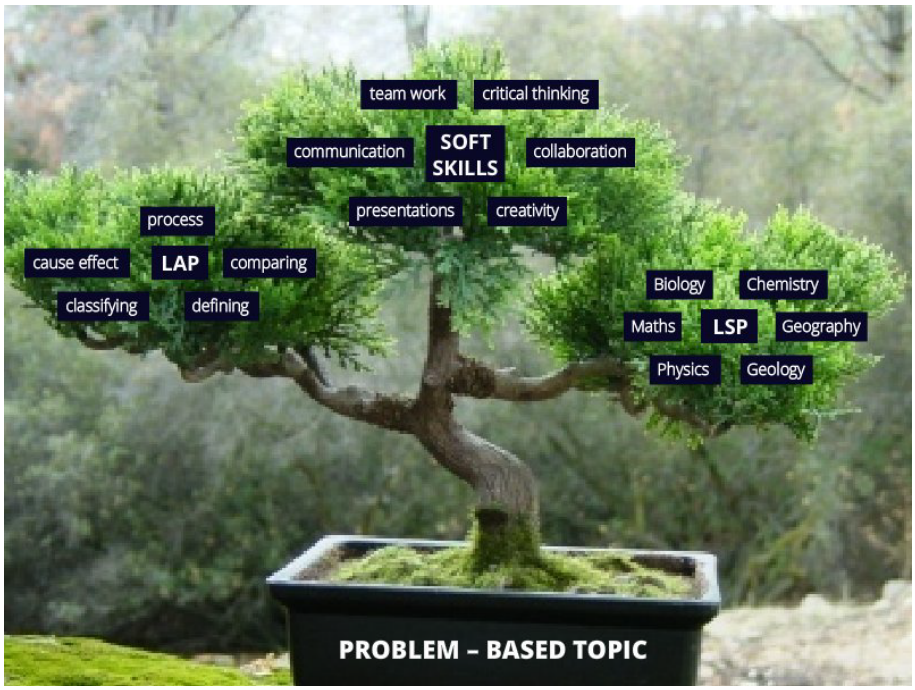
Three approaches

Our course is in fact a hybrid. It shares elements of three teaching approaches: collaborative learning, problem-based learning and CLIL. Part of our own professional development was to ask if combining these three pedagogical approaches is at all possible. We have found that it is, but not without confronting an array of problems.



Course objectives – collaborative approach

Our course resembles a bonsai. This is the shape we clipped our course into. We have tailored it to the needs of science graduates.



Upon completing the course, students be better able to:

- cooperate and communicate in intra and interdisciplinary scientific teams (discuss, gather information, assign responsibilities in a team, meet deadlines)
- communicate in an interdisciplinary way and understand interdisciplinary relations in science
- think critically
- explore an authentic problem of a region
- use English as a communication tool
- write scientific abstracts with the help of language corpora, accessed through Sketch Engine
- present their results using advanced presentation skills
- present to scientists from other fields in a relevant way
- present at conferences

› organize a student conference (assign roles and responsibilities, meet deadlines, set up a program, compile a book of abstracts)

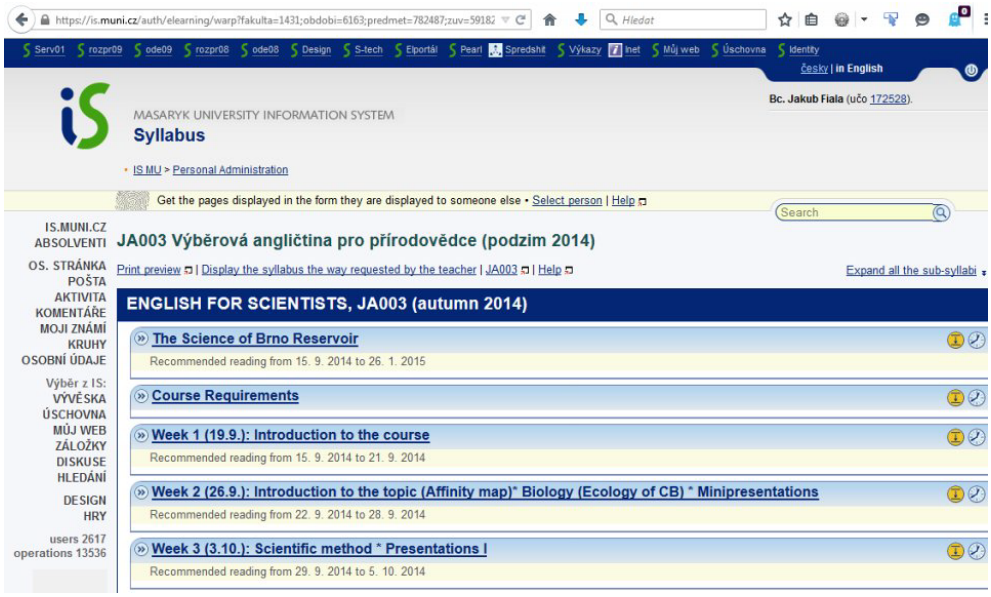
Process of preparation and organization of the course

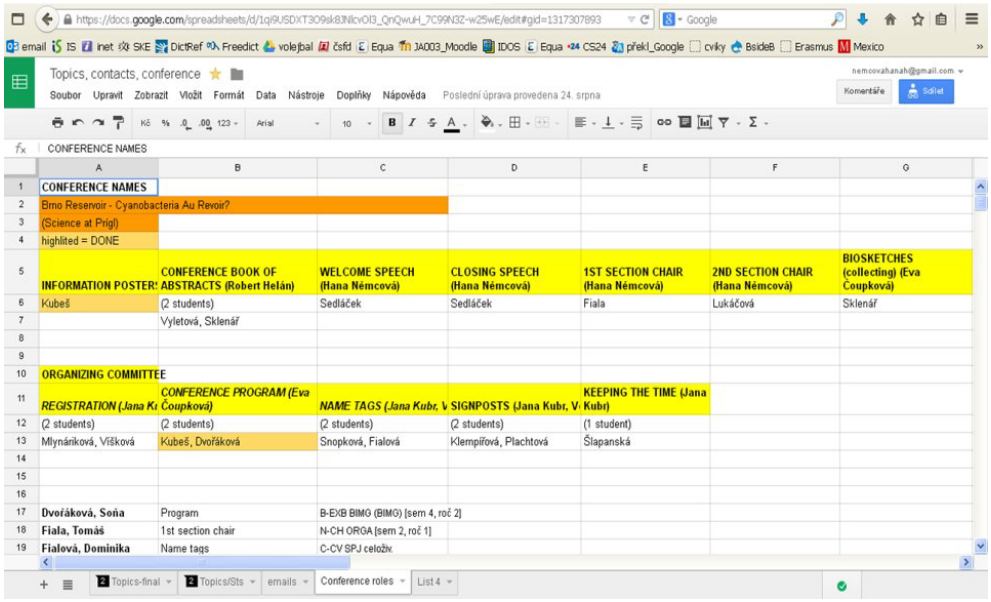
Assembling the team

To organize a multidisciplinary course, it is necessary to set up a team consisting of ESP language teachers and specialists from different disciplines who will collaborate to achieve the above objectives.

Learning environment

To have the course clearly structured and learning materials organized, it is convenient to make use of a suitable learning management system (LMS), such as Moodle. In our course we were using a learning platform of Masaryk University information system because our students are accustomed to their own system. We used external tools as necessary, e.g. Google docs for online interactive sharing where students signed up for topics, as well as roles and responsibilities.





Topics, contacts, conference

CONFERENCE NAMES

	A	B	C	D	E	F	G
1	CONFERENCE NAMES						
2	Brno Reservoir - Cyanobacteria Au Revoir?						
3	(Science at Prigl)						
4	highlited = DONE						
5	INFORMATION POSTER!	CONFERENCE BOOK OF ABSTRACTS (Robert Helán)	WELCOME SPEECH (Hana Němcová)	CLOSING SPEECH (Hana Němcová)	1ST SECTION CHAIR (Hana Němcová)	2ND SECTION CHAIR (Hana Němcová)	BIOSKETCHES (collecting) (Eva Čoupková)
6	Kubeš	(2 students)	Sedláček	Sedláček	Fiala	Lukáčová	Sklenář
7		Vyletová, Sklenář					
8							
9							
10	ORGANIZING COMMITTEE						
11	REGISTRATION (Jana Kı	CONFERENCE PROGRAM (Eva Čoupková)	NAME TAGS (Jana Kubr, V	SIGNPOSTS (Jana Kubr, V	KEEPING THE TIME (Jana Kubr)		
12	(2 students)	(2 students)	(2 students)	(2 students)	(1 student)		
13	Mlynáriková, Višková	Kubeš, Dvořáková	Snopková, Fialová	Klempířová, Plachtová	Šlapanská		
14							
15							
16							
17	Dvořáková, Soňa	Program	B-EXB BIMG (BIMG) [sem 4, roč 2]				
18	Fiala, Tomáš	1st section chair	N-CH ORGA [sem 2, roč 1]				
19	Fialová, Dominika	Name tags	C-CV SPJ celoživ.				

Topics-final | Topics/Sts | emails | Conference roles | List 4

Topic

For the sake of unity and coherence, it is beneficial to identify an authentic problem that the students and teachers can work on throughout the semester. The team spent a great deal of time brainstorming, and in the end we chose the eutrophication of a local reservoir which is a source of power, water and recreation. This issue allowed the scientists to apply their methodological approaches and knowledge.

To create a shared understanding of a concept, students were encouraged to find relations between items with the help of an affinity map.

Multidisciplinary approach

We approached the problem, *Cyanobacteria in the Brno reservoir*, from the perspectives of six scientific disciplines – biology, chemistry, physics, mathematics, geology, geography.

Required of students

- weekly attendance at 100 minute modules throughout the 13 week semester
- 2–3 hours of work outside the class per week
- homework involved completing quizzes and exercises before and after sessions, and reading
- active participation in the final conference, which includes writing an abstract for the presentation
- consultations with science and language teachers on the topics of presentations and on the form of presentation – at least two consultations per course.
- blog self-assessment and peer assessment, at least four entries per course
- deadlines to be strictly adhered to – work should be submitted by Tuesday 5 p.m. of the week following the session

Language

- general English for informal communication
- English for academic purposes – functional language (comparing/contrasting, cause/ /effect, describing a process, interpreting data, defining)
- English for specific purposes – discipline-specific language

Conference organization

Students became familiar with some essential aspects of conference organization. They learnt what to do, what to say, how to assign roles and responsibilities, meet deadlines, prepare a program, compile a book of abstracts. While they might apply this to organizing their own conference in the future, they experienced a microcosm of what is involved, an experience most novice presenters are oblivious to.

Slideshow

IV.

EXPECTATIONS VS. **REALITY**

We would like to share with you our initial expectations and ideas about our three year project and, for comparison's sake, the reality. We also offer some solutions to the problems for you to consider in your own contexts.

Assembling a team

Expectations

To be able to organize a multidisciplinary course, it is necessary to set up a team consisting of ESP language teachers and science field specific teachers, who are willing and able to collaborate to meet the stated objectives. In our case, we are a team of specialists in mathematics, physics, chemistry, biology, geology and geography working with ESP language specialists.

Problems

Most of the scientists we addressed were involved in their own research and were not in a position to participate in our project. This self-selection considerably narrowed the choice. Moreover, some of the scientists were strong individuals – creative but dominant. The fact that not everyone was a team player made communication at times awkward. Apart from that, there were too many teachers (14), and it was very difficult to coordinate them, especially when we didn't know each other that well.

Solution

Have a core team and employ others as visiting experts or consultants. Make sure that everyone's abilities are being tapped and their contributions are respected. Encourage diversity. Obtain regular feedback from the teachers and course creators. Do not keep poor performers on board. Train staff where necessary.

Modes of thinking about teaching and language

Expectations

We wanted the course to be based on a multidisciplinary approach (six disciplines) and diversity in terms of gender, age and professional experience of the teachers, so as to foster different approaches to problem-solving. The collaboration between the language

and science teachers would involve the preparation of communicative and interactive teaching materials.

Problems

It emerged that there was a considerable gulf between the approaches to teaching adopted by scientists and linguists. Some science teachers failed to understand the importance of correct language structures. Scientists focus on their research problems and the subject they want to explore, while language teachers are more interested in the form. Furthermore, some scientists are not used to discussing problems with students, as they see their role as imparting information in lecture formats.

Solution

Science teachers needed constant reminding that one of the major aims of the course is language improvement, and that they cannot deny the importance of correct language structures. Finally, we managed to achieve a balance between form and content. Ultimately, both sides benefited from mutual sharing.

Balance of science and language

Expectations

We wanted to achieve a balance of the scientific part of the course, which involved analyzing the topic through the lens of the specific disciplines, and the language part, which involved the use of appropriate, discipline-specific language during this process.

Problems

In the first pilot course, some scientists believed that students should receive detailed background information to be able to understand the problem. There was then less time for language practice. Students also complained about the missing balance of disciplines as the topic was more suited to biology or chemistry than to other fields.

Solution

The input of information was reduced to focus on the necessary facts and relations from each discipline concerning the problem of cyanobacteria; lectures were reduced and replaced by interactive exercises practising the discipline-specific language.

Specialist teams and mixed teams

Expectations

We wanted the students to work in field specific teams, in which they would investigate the issues in more depth and then share their knowledge with the others.

Problems

We expected the students to be confident in presentation skills, since this forms a part of their standard language training, however, they were not able to communicate the message to the other scientists in a simple and comprehensible way.

Solution

Most of the work was moved from expert to mixed teams, which at the same time enhanced interactivity. If students do not realise that they are failing to communicate with their audience, it is the teachers' responsibility to provide them with strategies for doing so. It is not enough to practice and rehearse presentations. Once the students have the linguistic strategies, they can be given more practice in talking about the topic in a simplified way, relevant to the target audience. In any environment, teacher input and student practice is essential. Without both, little progress can be expected.

Blogs

Expectations

As far as the blogs were concerned, students were expected to share their ideas on the course, their personal opinions, comments and experiences without too much teacher involvement. We wanted this to be a venue for an unstructured reflection on the content of the course, materials, and teaching methods.

Problems

Students were not used to reflecting on their own work, and they were not willing to participate on their own without supervision. Perhaps it's a culture-specific skill, and the Czech education system is not one that encourages reflective thinking.

Solution

For this to work properly, it is important to induct students into reflection. This requires the motivation for doing so, and its potential benefits. Students also need the linguistic structures in which they can embed their views. Only then can they feel some degree of confidence in posting to a blog. It is then necessary to monitor and control the blog regularly, respond to students' contributions. It is enough for one teacher to be responsible for this section.

Homework

Expectations

Part of this project involved having students work partly online. The e-learning resources were used mainly for pre-reading tasks, (reading about a specific topic before it would be tackled in class) and for follow-up activities.

Problems

In the first run of the course, there were too many of these online assignments and they were not equally distributed throughout. The instructions were not always clear enough, which meant that the students were not sure what to do and when. Consequently some students failed to meet the deadlines. The open-ended tasks often required detailed feedback, but the students did not reflect on it.

Solution

We decided to minimize open-ended questions in e-learning. Teachers became more organized, gave clearer instructions, set firm deadlines, and each teacher was given specific responsibilities and duties. Allocating one group of teachers to this makes it more coherent

and structured.

Timing

Expectations

The weekly sessions were timetabled to last 100 minutes. Students were also required to spend several hours completing assignments outside of class.

Problems

Timing appeared to be one of the most serious problems. Due to the large amount of activities and information provided to the students, it was difficult for the teachers to keep to their time limit, especially in the first run of the course, which was frustrating and looked unprofessional.

Solution

It was necessary for us to reduce the amount of content, and each lesson segment was rehearsed with the other teachers acting as students and giving feedback to the lecturer: timing was one of the important criteria. These demo sessions were very helpful.

Syllabus content

Expectations

Given the vast potential of this project, we wanted to include as much as possible in the courses: presentations by science teachers, language work prepared by language teachers, abstract writing, presentation practice, videoconferencing, etc. In fact, the students experienced videoconferencing with some Finnish colleagues, discussing cyanobacteria as a world-wide global problem.

Problems

The problems with overcrowding the syllabus have been alluded to above.

Solution

The simplest solution is often the best. After the first run of the course, we reduced the variety and range of activities, including the videoconference, in attempt to provide more quality and less quantity.

Our motto today is

LESS IS MORE

V.

EVALUATION

First run of the course (spring 2013) – SWOT analysis

A) Based on students feedback

	Strengths	Weaknesses	Strategies
Topic: Brno Reservoir and cyanobacteria	Some students liked the topic, it was new, they learnt new things	Some argued that it was too narrow, especially for some disciplines (maths, physics)	The concept of the course has been changed – introduction to the topic based on more general background info (biological, mathematical, chemical, physical, geographical, geological)
Balance of language and science	Some students were satisfied	Some expected more science, some expected more language	Repeat what the aim and objectives of the course are
Work in mixed teams	Students liked this kind of work. They learnt about the other disciplines. Students recommend spending more time on mini projects in mixed teams. Most answers positive.	Biology and chemistry were dominant	More work will be done in mixed teams – collaboration
Work in expert teams	The opinions differed depending on the science teachers who were in charge of the teams. Some were excellent	Depending on the science teachers who were in charge of the teams. Some were monotonous, some chaotic	More work in mixed teams - in the first half of the course, then project work – small teams – cooperation within a team, regular tutorials with the science teacher /coordinator
Teaching materials, handouts	Very good, both science and language practice	Some topics were not covered satisfactorily	Teachers guiding the mini projects will provide students with a reasonable amount of sources
Presentation skills	Students appreciated the opportunity to practice presentations	Most students failed to effectively transfer the information from their expert teams. It was difficult to follow some of the presentations – too specific topics, lack of simplification, bad presentation skills	More time will be spent on the input (theory of presentations – examples) and on practicing (one obligatory tutorial at least will be required)
Video-conference with Helsinki University	Very interesting experience, new technology	Too many students participated, the Finnish students were biologists only, no other discipline was involved, a bit too restricting	Videoconferencing will not be incorporated into the course especially due to the lack of time and specialization of the Finnish students
Abstracts + using corpus searching tool	Very useful for future career, corpora very interesting and helpful Professional proof reading from the native speaker was highly appreciated	It needs more time to practice	Timing will be changed
Conference organization	Good experience	Chaotic, hectic	Change of timing, meeting deadlines (strictly)
Final conference	Success, although some problems occurred during the preparation	Organized in the last week of the semester – students work on the final assessments, sit for exams, geographers could not take part due to the field work	The conference will be organized one week before the end of the semester

B) Impact team feedback

Problems	Change
In the first run of the course it was sometimes impossible to come to consensus due to a dominant colleague, the less dominant people drew back › very little progress in planning. No sustainability of the course	Change in the team, now communication without problems, the atmosphere is friendly and fruitful. The team meets regularly – demonstrating demo-sessions. Each demo-session is prepared by one scientist and one language teacher (discipline-based), or by teachers responsible for particular topics, the other colleagues act as students. After each session, a detailed feedback is provided More feedback in all areas
In some disciplines coordination content/language was difficult (F,M, C)	Negotiating, MF ok, C sometimes hard
Coordination of the preparation	Delegate more responsibilities, specific individual tasks, coordinator must require meeting deadlines Foster less dominant colleagues to express their opinions Give clear and more specific instructions
Too many activities to make the course attractive to Ss	Fewer activities No videoconference More focus on collaboration in teams
Lessons overtime – regularly	Strictly keep to time limit, fewer activities
Idea of advanced presentations skills failed – Ss were supposed to transfer the info from the expert teams to the other teams	Detailed feedback, time limit, presentation background before (Ss were expected to know)
Ideas of mixed teams	The potential of the course is interdisciplinarity
Ss missed more info on the syllabus	Syllabus published before
Topic cyanobacteria in expert teams too detailed – Ss were more interested in interaction	Global view – discipline-based, more work in mixed teams
Communication in the team (dominant x submissive – even good ideas)	Relaxed, cooperative spirit after the controversial colleague has left
Science teachers will understand why correct language structures are important when formulating different ideas/opinions, learn some new teaching methods	
Science teachers will improve their English Language teachers will better understand interrelations among disciplines	

Second run of the course (spring 2014) – SWOT analysis

A) Based on students feedback from the questionnaire (anonymous) + blog

	Strengths	Weaknesses	Strategies
Topic: Brno Reservoir and cyanobacteria	OK	Some students argued that it was too much for one course, one student suggested a different topic – diseases	The topic will not be changed, the preparation of that particular topic was very time consuming
Balance of language and science	Some students were satisfied	In general students would expect more: language, presentation practice, more pronunciation practice, more advanced language exercises and less science	Repeat to students what the aim and objectives of the course are – it is a language course based on interdisciplinary approach. The fact that there are so many scientists involved affected the content of the course. In the third run, however, language will be fostered. Language exercises will be modified – avoiding simple ones (gap-fils) and focusing more on the functional language"
Work in mixed teams	Students liked this kind of work. They learnt about the other disciplines. Students found the experience enriching	Biology and chemistry were dominant again. Some Students would prefer more sharing in expert teams X last year experience showed it was too restricting – also due to the fact that the teams were not equally represented (majority of biologists and chemists)	
Materials, handouts	Very good (eg. abstract writing very useful)	Some disciplines better than the others, too many grammatical exercises (eg. gap-fil)	Modification of grammar exercises, focus on the functional language, science teachers will adapt their materials a bit
Presentation skills	Students appreciated the opportunity to practise presentations	Students need more time to prepare, practise and rehearse their presentations, improve their presentation skills	More time will be spent on the input (theory of presentations – examples.). Students were expected to have participated in the standard courses of English where presentations are dealt with in detail. In addition, two obligatory tutorials will be required-with science and language teachers).
Abstract writing	Very useful, highly appreciated (input and professional proof reading and video feedback from the native speaker)	Students would prefer more time spent on abstracts, more feedback	More practice will be added, however, students will be required to work further with the feedback – some of them failed to do it
Using corpus searching tool (Sketch engine)	Corpora very interesting and helpful	It needs more time to practise	Timing will be changed, more homework to make students use the tool
Conference organization	Good experience	Need more time for organization, start sooner, more publicity, no awards for the best presentations	Change of timing, meeting deadlines (strictly), start in the first third of the course

	Strengths	Weaknesses	Strategies
Final conference	Excellent experience, friendly atmosphere	Organized in the last week of the semester – students work on the final assessments, sit for exams , geographers could not take part due to the field work – they designed posters	The third course run and the conference will take place in the autumn semester, which is more convenient for students
Overall evaluation of the course	Very useful, non-standard, friendly atmosphere, supportive teachers, active speaking during the whole course, new and creative teaching methods, interesting topic, new friends	Too much science, too many home assignments, no balance of discipline-based input, more team projects, clear instructions	Make students think about the target audience of their presentations, home assignments – fewer, clearly defined, preferably automatic evaluation of elearning tasks
Recommendations		More language, more presentations, fewer scientific presentations, more abstract, more soft skills	

B) Impact team feedback

Problems	Change
At the beginning of the course students will be informed about	› aim of the course: to improve students´ language skills, interdisciplinary communication, to make students think critically (emphasize that it is not a scientific seminar) › syllabus – meeting deadlines › course requirements – (presentations, abstracts, blog, conference preparation, need to follow the instructions in the course interactive syllabus...) › info on the conference – what will students be expected to do and when (! time pressure before Christmas and exam period)
Syllabus	fewer activities, more sharing in teams
Affinity map	it worked – organizing and reorganizing items during the course (critical thinking)
Home assignments	› not so many, equally distributed during the course › strongly require homework deadlines (home reading for the following session) › e-learning – if open answers, then give feedback and check whether students corrected all their mistakes; preferably automatic evaluation of tasks › clear instructions
Language exercises	avoid mechanical gap-filling, focus on the functional language, more advanced activities
Topics for the conference	› 5 fixed sections – titles created by science teachers, topics in the sections fixed // students themselves can take the initiative, students sign up for the topics › topics in sections must be thematically connected – based on interdisciplinary collaboration,avoid overlapping
Presentations	› provide more theoretical input and practice even though some students may have attended the standard courses focusing on presentations › more rehearsing › more consultations with science and language teachers – strictly require re-editing if necessary › compulsory rehearsal in "sections" with detailed feedback
Abstracts	start with the abstract lesson immediately after all the topics will be assigned
Blog	it did not work – Robin will be responsible for blogging
Teachers	be responsible, organized and timetabled, meet deadlines

VI.

CZECH VERSION

A.

O **NÁS**

Úvod

Publikace kolaborativního učení Centra jazykového vzdělávání Masarykovy univerzity nabízí zkušenosti autorů při tvorbě jazykového kurzu zaměřeného na mezioborovou spolupráci, řešení problému a kritické myšlení.

Mezioborový jazykový kurz kolaborativního učení pro studenty přírodních věd

Cíl

Kurz byl vytvořen a realizován jako součást rozsáhlého tříletého projektu s podporou operačního programu EU Vzdělávání pro konkurenceschopnost, pod záštitou Centra jazykového vzdělávání MU. Byl vyvinut pro studenty přírodovědných oborů a zároveň ve vzájemné spolupráci s nimi. Tento kurz je ale zároveň možné použít i jako návod pro kolaborativní učení jazyka s odborným zaměřením obecně.

Tým

Autoři kurzu se domnívají, že mezioborová spolupráce je jedním z trendů 21. století. Opakující se postupy v přípravě a v průběhu učení byly významnou zkušeností nejen pro všechny vyučující, ale i pro studenty. Dobrat se shody s lidmi z různých oblastí bylo sice občas složité, ale na druhou stranu velice podnětné.

Sdílení

Autoři kurzu věří, že zkušenosti, které získali, budou užitečné pro každého, kdo se o vývoj podobného kurzu zajímá. V duchu kolaborativního učení se rádi podělí nejen o pozitivní aspekty celého procesu, ale upozorní i na nezdary, se kterými se potýkali.

Vyučující & obory

Hana Němcová
Koordinátorka,
vyučující angličtiny

James Thomas
Vyučující angličtiny

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B.

METODICKÉ PŘÍSTUPY

Collaborative learning in tertiary studies

Graciela Sbertoli

Kolaborativní učení je výuková metoda, která na základě skupinové práce vede studenty k dosažení společného akademického cíle. Tato metoda vychází z pojetí vědění jako sociálního konstruktu, v němž kontextově relevantní vzdělávací zkušenosti zahrnující interakci a sociální výměnu se zaměřením na studenta přispívají k hlubšímu osvojení učiva.

ESP and task/problem-based approach in English for science

Eva Čoupková

Text pojednává o metodologiích ESP a Task/Problem-Based a ukazuje, jak se je podařilo začlenit do kurzu English for Science. Jelikož hlavním cílem kurzu, který využívá ESP metodologii, je připravit studenty na jejich budoucí profesionální dráhu, tedy rozvinout jejich schopnost používat angličtinu v rámci dané specializace, zaměřil se tým vědců a jazykářů na odborná témata a materiály. Abychom studentům umožnili zabývat se otázkami skutečného života a řešit je v rámci mezioborové komunikace, vybrali jsme jeden konkrétní lokální problém, na který studenti pohlíželi z perspektivy svého vědního oboru a také se pokusili spolupracovat při hledání způsobů a metod jeho řešení.

Theory of CLIL

Robert Helán

Článek sumarizuje hlavní pedagogické principy integrované výuky předmětu a cizího jazyka (v angličtině zkratka CLIL). Zaměřuje se na cíle výuky v takových hodinách a důvody, proč je tento přístup k výuce efektivní. Kromě prezentace některých teoretických konceptů používaných v daném přístupu, jako jsou „4Cs framework“ a „language of/for/through learning”, je zde demonstrováno, jak byly tyto koncepty aplikovány v kurzu CLIL na Masarykově univerzitě.

The role of authenticity and authentic materials in content-based courses

Markéta Kovaříková

Tento článek zkoumá téma autenticity a jejího využití v jazykové výuce. Zkušenosti s vývojem autentických materiálů a prací s nimi jsou společně s výsledky přetrvávající diskuse nad jejich využitím ilustrovány na pozadí tříletého kurzu kolaborativního učení založeného na obsahu v rámci projektu IMPACT. Práce nejprve definuje pojmy autenticita i autentické materiály. Následně nabízí přehled důvodů a účelů pro jejich využití a to společně s popisem veškerých jejich typů a možností jejich využití. Závěrem jsou popsány odlišné názory na výběr a zpracování materiálů v rámci daného realizovaného kurzu. Článek nabízí i řadu praktických rad důležitých při plánování kurzu podobné povahy v univerzitním prostředí.

Introducing corpus software and data as a resource for academic writing

James Thomas

Tento článek popisuje pouze jednu složku jazykové části kolaborativního kurzu v projektu Impact. Experimentální stránkou kurzu byly některé z metodických postupů a jazykových aktivit, které do té doby nebyly vyzkoušeny na studentech, jejichž hlavním oborem není studium jazyků. Vzhledem k mnohostranné povaze kurzu, včetně různorodých výukových jednotek, byla časová dotace na práci s korpusy omezená.

C.

MEZIOBOROVÝ JAZYKOVÝ KURZ **KOLABORATIVNÍHO UČENÍ** PRO STUDENTY PŘÍRODNÍCH VĚD

Cílová skupina

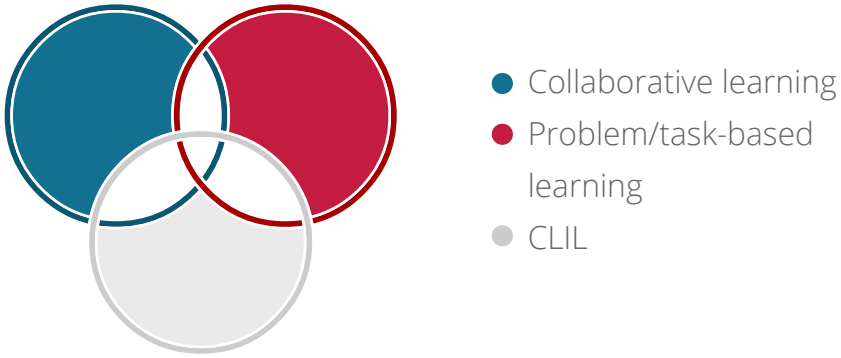
Účastníci našeho kurzu jsou studenty přírodovědných oborů - biologie, chemie, geografie, geologie, fyziky a matematiky. Kurz byl původně určen pouze pro posluchače magisterského programu se znalostí angličtiny na úrovni minimálně B2. Nakonec se vytvořila heterogenní skupina složená z bakalářů, magistrů a dokonce i několika doktorandů. Tato různorodost s sebou přinášela velké rozdíly v úrovni jazykových znalostí od B1 do C1, na druhé straně napomohla sdílení a vzájemné součinnosti.

Cíl kurzu

Cílem kurzu bylo propojit studenty různých přírodovědných oborů s jejich oborovými učiteli a s lektory odborného jazyka. Společný zájem se pak soustředil na řešení skutečného problému za využití poznatků jednotlivých disciplín. Angličtina sloužila jako prostředek komunikace.

Vzdělávací přístupy

Náš kurz je ve skutečnosti hybrid. Sdílí prvky tří vzdělávacích přístupů: kolaborativního učení, učení zaměřeného na řešení problému a CLIL (integrované výuky předmětu a cizího jazyka). Součástí našeho profesního rozvoje bylo ověřit, zda kombinace těchto tří přístupů je možná. Zjistili jsme, že to možné je. Bylo však třeba vypořádat se s mnoha problémy.



Dílčí cíle kurzu

Po absolvování kurzu budou studenti schopni lépe

- spolupracovat a komunikovat v oborových i mezioborových vědeckých týmech (diskutovat, získávat informace, plnit zadané úkoly, dodržovat termíny)
- komunikovat napříč obory a chápat mezioborové souvislosti
- myslet kriticky
- zkoumat autentický problém určité oblasti
- užívat angličtinu jako komunikační prostředek
- psát vědecké abstrakty s pomocí nástroje pro vyhledávání v jazykových korpusech (Sketch Engine)
- presentovat své výsledky s využitím pokročilých prezentačních dovedností
- prezentovat své výsledky vědcům jiných oborů srozumitelnou formou
- prezentovat na konferencích
- uspořádat studentskou konferenci (plnit přidělené úkoly a povinnosti, dodržovat termíny, sestavit program a sborník abstraktů)

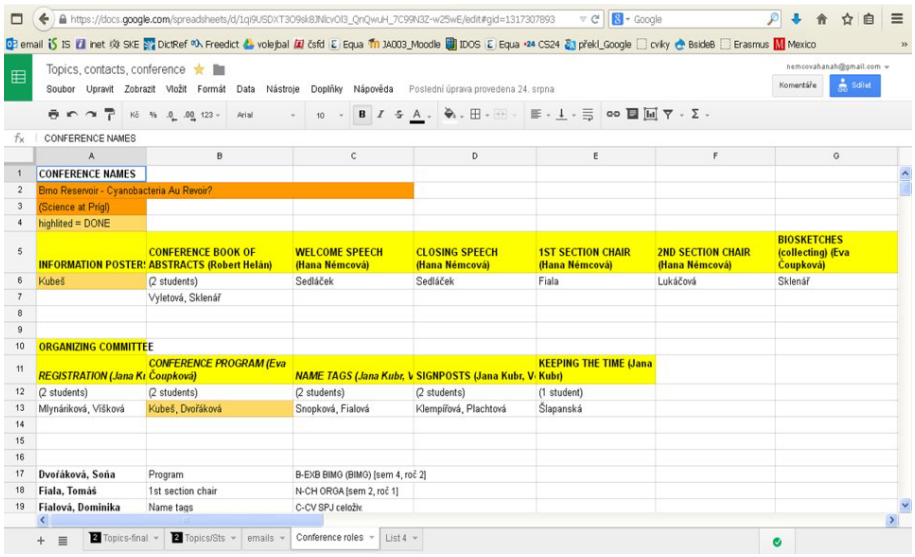
Příprava a organizace kurzu

Sestavení týmu

K vytvoření mezioborového jazykového kurzu je nutné sestavit tým učitelů odborného cizího jazyka a specialistů z různých vědních disciplín a společně směřovat k dosažení stanovených cílů.

Výukové prostředí

K tomu, aby byl kurz přehledně strukturovaný a výukové materiály snadno přístupné, je dobré využívat vhodného systému pro řízení výuky (LMS). Náš tým si pro první běh kurzu vybral Moodle. Protože však byli studenti navyklí na informační systém Masarykovy univerzity, se kterým pravidelně pracují, dali jsme v dalších kurzech tomuto domovskému systému přednost a začali využívat i jeho výukovou platformu. Zapojili jsme také některé externí nástroje, pro interaktivní online sdílení to byl například Google.docs. Studenti se do něj zapisovali na vybraná témata nebo se hlásili na jednotlivé úkoly při přípravě závěrečné konference.



Téma

Pro udržení jednoty a soudržnosti kurzu bylo třeba vybrat autentický problém, kterému se budou studenti a učitelé věnovat po celý semestr. Najít vhodné téma nebylo jednoduché. Po dlouhém zvažování jsme nakonec zvolili eutrofizaci místní přehradní nádrže. Na toto téma pak mohli vědci aplikovat metodické přístupy a znalosti typické pro daný obor.

K pochopení vzájemných vztahů mezi jednotlivými jevy studentům pomáhala práce s mapou příbuzných vztahů (affinity map).

Víceoborový přístup

K problému *Sinice v Brněnské přehradě* jsme přistupovali z pohledu šesti vědeckých oborů – biologie, chemie, fyziky, matematiky, geologie a geografie.

Požadavky na studenty

- pravidelná účast ve výuce, moduly v délce 100 minut, 13 týdnů semestru
- 2–3 hodiny samostudia za týden
- domácí úkoly včetně vyplňování online cvičení a studium vybraných textů
- aktivní účast na závěrečné konferenci včetně vytvoření abstraktu k prezentaci
- konzultace s odborníky k tématům prezentací a s učiteli jazyků k podobě a jazykové stránce prezentace – nejméně dvě konzultace během kurzu
- blog – sebehodnocení a vzájemné hodnocení, nejméně čtyři vstupy během kurzu
- dodržování termínů, práce měly být odevzdány do 17 hodin v úterý v týdnu po semináři (semináře se konaly vždy v pátek)

Jazyk

- obecná angličtina v neformální komunikaci
- angličtina pro akademické účely – funkční jazyk (srovnávání/kontrasty, příčina/důsledek, popisování procesu, interpretace dat, definování)
- angličtina pro odborné účely – odborný jazyk jednotlivých vědeckých oborů

Organizace konference

Studenti se obeznámili s některými základními aspekty organizování konferencí (logistika, konferenční program, sborník abstraktů, dodržování termínů). Jsou to záležitosti a dovednosti, se kterými většina začátečníků nemá zkušenosti, ale které jistě v budoucnu ocení.

D.

OČEKÁVÁNÍ A **REALITA**

V této části se s vámi chceme podělit o zkušenost při přípravě a realizaci kurzu. Chceme ukázat, jak často se realita liší od očekávání. Nabídneme také možná řešení aplikovatelná i na jiné kontexty.

Sestavení týmu

Očekávání

K vytvoření víceoborového jazykového kurzu je třeba kvalitního týmu učitelů ochotných spolupracovat na dosažení stanovených cílů. V našem případě se jednalo o lektory odborného cizího jazyka a oborové specialisty v oblasti matematiky, fyziky, chemie, biologie, geologie a geografie.

Problémy

Většina vědců, které jsme oslovili, byla zapojena do vlastních výzkumných projektů a pro spolupráci s námi neměli volnou kapacitu. A to i přesto, že byli o přínosu takového kurzu přesvědčeni. Tento přirozený výběr nabídku povážlivě zúžil.

Tým se skládal ze čtrnácti učitelů, což bylo poměrně náročné na koordinaci a vzájemnou komunikaci. Kromě velkého počtu lidí mohly být problémy v komunikaci způsobeny skutečností, že jsme se zpočátku příliš dobře neznali. Navíc někteří z členů týmu byli silné individuality a jejich dominance a neústupnost vzájemnou komunikaci silně ovlivňovaly.

Řešení

Mít základní jádro týmu a ostatní zaměstnat jako hostující odborníky nebo konzultanty. Vytvořit prostředí, ve kterém bude mít každý možnost uplatnit své schopnosti a jeho názory budou respektovány. Podporovat různorodost názorů. Získávat pravidelnou zpětnou vazbu od učitelů a tvůrců kurzu. Nespolupracovat s těmi, kteří jsou pasivní. V případě nutnosti zajistit potřebná školení.

Způsob uvažování

Očekávání

Chtěli jsme, aby náš kurz byl založen na víceoborovém přístupu (šest vědních disciplín) a rozmanitosti (pohlaví, věk, profesní zkušenosti učitelů). Také nás zajímaly různé přístupy k řešení daného problému. Spolupráce mezi učiteli jazyků a přírodních věd měla vést k tvorbě komunikativních a interaktivních materiálů.

Problémy

Ukázalo se, že přístupy k výuce u vědeckých pracovníků a lingvistů se propastně liší. Někteří přírodovědci nechápali, proč je důležité používat správné jazykové struktury. Vědci se většinou soustředí na vlastní výzkumné problémy a předmět, který chtějí zkoumat, zatímco učitelé jazyků se více zaměřují na formu.

Navíc někteří vědci nejsou zvyklí se svými studenty o problémech diskutovat. Svou roli vidí hlavně v poskytnutí informací formou přednášky.

Řešení

Učitelům přírodních věd bylo zapotřebí stále připomínat, že jedním z hlavních cílů tohoto kurzu je zdokonalení v cizím jazyce a že důležitost správných jazykových struktur nelze opomíjet. Nakonec se podařilo určité rovnováhy mezi formou a obsahem dosáhnout. A bylo to přínosné pro obě strany.

Vyváženost vědy a jazyka

Očekávání

Naším cílem bylo dosáhnout vyváženosti mezi vědeckou stránkou kurzu, která zahrnovala analýzu tématu z pohledu jednotlivých vědních disciplín, a jazykovou stránkou, zaměřenou na užívání vhodného odborného a akademického jazyka.

Problémy

Zpočátku se někteří vědci domnívali, že studenti by ke správnému pochopení problému měli dostat podrobné základní informace. Tím zbylo méně času na procvičování jazyka. Studenti si také stěžovali na chybějící vyváženost vědních oborů, jelikož téma eutrofizace se podle nich více týkalo biologie a chemie než ostatních oborů.

Řešení

Při řešení problému sinic jsme vstupní informace omezili na nezbytná fakta a souvislosti jednotlivých vědních oborů. Většina přednášek byla nahrazena interaktivními cvičeními, ve kterých se zároveň procvičoval odborný jazyk konkrétních vědních oborů.

Týmy oborové a smíšené

Očekávání

Představovali jsme si, že studenti budou pracovat v oborových týmech, kde se budou tématu věnovat do větší hloubky a své poznatky pak srozumitelnou formou zprostředkují studentům ostatních oborů.

Problémy

Ukázalo se, že prezentační dovednosti studentů nejsou na takové úrovni, jak jsme předpokládali, i když jejich nácvik je součástí standardních jazykových seminářů. Většina studentů nebyla schopna informaci jednoduchým a srozumitelným způsobem předat.

Řešení

Větší díl práce byl proto z oborových týmů přesunut do týmů smíšených, což zároveň vedlo k lepší výměně informací. Pokud studenti nedokáží sdělení srozumitelně předat, je třeba s nimi tyto strategie důkladně procvičovat. Nejprve musí zvládnout jazykové strategie a teprve potom se mohou zaměřit na cílového posluchače.

Blogy

Očekávání

Očekávali jsme, že v blogu budou studenti sdílet své názory, nápady, komentáře a zážitky bez intervence učitele. Chtěli jsme, aby se blog stal místem reflexe na obsah kurzu, materiály a výukové metody.

Problémy

Studenti nebyli zvyklí o své práci přemýšlet, aniž by je k tomu někdo vedl a dohlížel na ně. Myšlení založené na reflexi je zřejmě kulturní dovednost, kterou český vzdělávací systém příliš nepodporuje.

Řešení

Právě pro tuto práci je důležité studenty k reflexi motivovat. Studenti také potřebují jazykové struktury, do kterých by své myšlenky formulovali. Upevní to jejich sebedůvěru a nebudou se bát své názory zveřejňovat. Blog je nutné pravidelně monitorovat a na příspěvky studentů reagovat. Stačí, když za tento úsek odpovídá jeden vyučující.

Domácí úkoly

Očekávání

Část projektu zahrnovala práci studentů online. Elearningové zdroje se používaly zejména pro načtení určité části odborné tématiky předtím, než se o ní bude mluvit ve výuce. Interaktivní cvičení zase sloužila k upevnění různých jazykových jevů.

Problémy

V prvním běhu kurzu bylo online úkolů příliš mnoho a nebyly rovnoměrně rozloženy. Pokyny nebyly vždy dostatečně jasné, což znamenalo, že si studenti nebyli jisti, co a kdy mají dělat. V důsledku toho někteří posluchači úkoly neplnili včas. Otevřená zadání úkolů často vyžadovala podrobnou zpětnou vazbu, ale když ji studenti dostali, většinou se jí už nezabývali.

Řešení

Rozhodli jsme se otevřené otázky v elearningu snížit na minimum. Vyučující si lépe plánovali úkoly, za které byly odpovědní, dávali jasnější pokyny, stanovili pevné termíny splnění.

Časové rozvržení

Očekávání

Délka semináře byla podle rozvrhu 100 minut. Po studentech jsme také požadovali, aby strávili několik hodin samostudiem.

Problémy

Časové rozložení hodin se ukázalo jako jeden z nejvážnějších problémů. Pro velké množství aktivit a informací bylo pro učitele obtížné a frustrující dodržet časový limit, a to obzvláště v prvním běhu kurzu. Navíc to působilo neprofesionálně.

Řešení

Bylo třeba snížit objem látky. Každá výuková jednotka byla procvičována formou demo lekcí, kdy ostatní učitelé vystupovali v roli studentů. Poté dostal každý přednášející podrobnou zpětnou vazbu. A časové rozložení bylo jedním z velmi důležitých kritérií. Tato forma hodnocení byla pro zdárný průběh celého kurzu neocenitelná.

Sylabus

Očekávání

Kurz nabízel velký potenciál a snažili jsme se jej maximálně využít – odborná témata, jazyková cvičení, psaní abstraktů, nácvik prezentací, videokonference s finskými kolegy, organizace konference.

Problémy

Problémy s přemírou informací a aktivit už byly zmíněny dříve.

Řešení

Nejjednodušší řešení bývá často nejlepší. Po prvním běhu kurzu jsme různorodost a rozsah činností zredukovali, včetně vynechání videokonference. Snažili jsme se poskytnout vyšší kvalitu a nižší kvantitu.

Naše současné motto zní:

MÉNĚ JE VÍCE

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