CLIL: Preparing for Central Asian Students to Study Animal Husbandry in English

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Content and Language Integrated Learning stands for a pedagogical and curricular paradigm that higher educational institutions across Europe and North America are implementing, in order to, e.g. attract a more diverse, international student body. While the underlying principle of CLIL has a history going back several decades, its manifestations are aimed at remaining innovative. In examining the reasoning behind introducing CLIL, we explore how my home faculty, dealing with agricultural sciences, can better prepare itself to receive students from Central Asia, as is planned in the near future. CLIL present teachers with continuous challenges, one of the most daunting of these is achieving proper basis through intercultural communication for furthering a course's set aims.

Introduction

The idea that any language is best learned in context, through meaningful content, is not new to those of us who research and teach foreign languages, but putting this idea into practice poses quite a challenge when preparing to teach a four semester M.Sc. course in animal husbandry using CLIL to international students with heterogeneous cultural and L2 learning backgrounds.

Only fairly recently has there appeared any real interest in language and content learning on any level at our faculty, and most unfortunately, the term integration is still missing from that interest. The curricular and pedagogical paradigm that has come to be called CLIL – Content and Language Integrated Learning – is a generic term referring to the teaching of a subject through a foreign language. It encompasses any dual-focused educational context in which an additional language is used as a medium in the teaching and learning of non-language content (Marsh 2002, 15). CLIL does not imply a preference for either the language or the non-language content, placing both on a continuum (Marsh 2002, 63). The essential criterion, distinguishing it from simply the teaching of substantive material in a foreign language, is its dual-focal nature.

Currently, higher education studies in agriculture in the European Union (EU) show a decline in interest and enrollment. In order to be able to maintain and preserve the intellectual capacity of their institutions, i.e. to prevent mass lay-offs due to dropping student numbers, agricultural science faculties are having to break with long traditions of domestically-focused education and to open their M.Sc. educational programs to international students coming from outside the EU.

The M.Sc. course devised by our faculty seeks to meet just this goal: self-preservation through diversification. Finances are not the sole focus of this decision, but the recognized need to lend Hungarian education, and especially research, in agricultural studies an international breadth which it has lacked since the fall of the communist dictatorships, and with them, the vast majority of sound international cooperative research, teaching and faculty and student exchanges. This deficit has given higher education in agricultural studies an 'island' mentality, through which the relevance of Hungary to European agricultural has lost a great deal of prestige. In other words, over-focusing on the training of Hungarian students without working towards diversification by creating programs taught e.g. in English has meant that much meaningful international transfer of research findings to colleagues and institutes abroad has gone lost.

To illustrate our point, we provide an excerpt from the welcoming homepage in English of an agricultural institution of higher education here:

> Hungary is a country with a long history of having a national economy in which agriculture plays a focal role, especially in maintaining rural communities. In addition to traditional farm products, important sectors such as a chemical industrial items (including pharmaceuticals), machine and vehicle production, and electronics and software development

> are currently major exports. However, it has been recognized that the growth in industrial production also represents a hazard to agriculture, particularly in the export of quality products. The large arable territory of Hungary, its fertile soil, favorable climate, wildlife unique in Europe, and the several centuries-long tradition of agricultural education have all stimulated efforts to preserve the traditional values of Hungarian agriculture and its environment. (*Introductory*)

There is no attempt made to place Hungarian education in agricultural sciences into a larger context, or to demonstrate how it might specifically benefit our economy by contributing to exports or international research. Regardless of which of our nation's university homepages one visits, the focus is inward-looking, which is not necessarily a problem in and of itself, except for the issue of how this self-focus works on curriculum development.

The Local Culture of Education

The Lisbon Strategy set the objective of making the European Union the most competitive and dynamic knowledge-based economy in the world by 2010. Although we have already passed that date, the goal has not changed. The 2005 supervision of the Lisbon Strategy focuses on growth and employment and it defines knowledge and innovation as the key drivers of European growth. Success lies in quick access to knowledge and effective adaptation. Solid grounds for the knowledge-based economy and society ought to be ensured by the education institutions. One of the four pillars in the EU's first guideline on employment policy (1998) − the improvement of employability and the adaptability of workers and enterprises − emphasizes the role of vocational education and training (net 1). Further (2005-2008) guidelines for growth and jobs strongly recommend the adaptation of the education and training systems to new competence requirements (net 2). Learning and analyzing the expectations, experience and recommendations of the employers are indispensable for the formation of up-to-date curricula. Higher education institutions can absorb demands of the user side through

further training institutes, entrepreneurial centers, consultation services or joint development applications.

One of the crucial skills expected of professionals is foreign language command which provides competitive advantage for the individuals in the labor market and also for organizations in their international activities. According to research commissioned by the European Union European enterprises lose business opportunities and thus sales because of the lack of foreign language or cross-cultural skills (Hassid, 2002). In another survey on the ten attractive properties of company premises the representatives of large companies ranked the category of labor force as second after regional accessibility; in this case labor force category included language skills besides qualifications and willingness for adaptation (Koltai, 2006). When selecting target languages and language skills, foreign language education should be adapted to the expectations of the economy.

How does the change instigated on the EU level affect (language) education locally? Education, of course, is one of the most important conduits of culture. Literacy levels and the choices behind which set(s) of skills one should support the acquisition of determine not only the degree of success of an educational culture, but that of a nation's economy, as well. Ideally, educational policy should reflect and form the society of which it is a part. The teaching of foreign languages in turn both reflects and forms the educational policy and practice of which it is a part. In devising CLIL courses for foreign students from very diverse cultures, curricula development should imply a necessity to select those elements of educational focus which would ensure successful transmission of specialist knowledge to a recipient audience of learners. This selection might even mean an alteration of the traditional basis upon which an educational institution builds its CLIL educational offerings. Understanding the nature of this basis and its consequences, in the case of agricultural education in Hungary, for the success of CLIL programs here, requires a brief examination of local educational culture.

In Europe and North America, CLIL is grounded in the language teaching theories which developed in Western civilization and is made up of a myriad of individually-tailored programs designed to meet local educational needs. The classical humanist approach to education stresses abstract, but generalized, intellectual thinking. Capacities such as analysis, classification and reconstruction of elements of knowledge are developed through a sequencing of elements of knowledge from what is held to be simple to what is held to be complex. This approach aims to linearly and cumulatively sustain and convey knowledge and culture from generation to generation. (See and compare Bloom, 1976; Breen, 1984; Clark, 1987; Freire, 1970; Rodgers, 1989; Prabhu, 1983; Stenhouse, 1975; and White, 1988) Seen from the point of view of L2 teaching, this approach is defined by the teaching of knowledge about the target language. The focus is on a language's structure and grammar rules. The study of literary texts is interpreted as having inherent value, as these texts belong to what is considered to be 'high' culture. Thus, languages are taught with the understanding that their knowledge brings with them a certain cultural prestige. Nonetheless, in post-communist Hungary, L2 learning has not gotten off the ground and more disappointing is the way in which foreign language education is being mishandled at universities. (See detailed discussion in Wiwczaroski, 2009)

More problematic for establishing CLIL courses particularly in Hungary is the manner in which courses are accredited and launched, especially at technical faculties. The procedure itself precludes input from L2 teaching colleagues as to how the course should be designed and in what ways L2 teachers and their technical/scientific subject teaching colleagues should work together to design an effective course, on a sound linguistic basis. The Hungarian Accreditation Committee (HAC) is an independent body responsible for the oversight of the quality of the nation's higher education programs. The HAC sets general requirements for launching educational courses in the system and determines how a Bachelor's or a Master's course may be launched, on the basis of the criteria laid down in the Bologna Process. The HAC requirements

for starting any courses are detailed, concerning e.g. the staff, the course content, the research background and the infrastructure that the institution to provide the course must have.

As concerns staff requirements, examined is whether persons selected to teach within the framework of a course are qualified to be responsible for a degree program. Persons responsible for a degree program are senior instructors with scientific degrees and recognized professional references in the area they teach. Such individuals must demonstrate a successful research history and take part in the activities of a doctoral school. Moreover, they have to be primarily employed full time at the institution where the course is to be launched. For at least 2/3 of senior instructors who hold scientific degrees, the institution has to be the primary place of employment. The individuals should be responsible for only one master course and only in one institution. They should also be responsible for one core subject within a Master's program.

From the academic staff, persons may be responsible for required and required elective subjects up to a total of 30 credits in Bachelor's and Master's programs. However, we are required to include in this maximum 30 credits those subjects taught by them in other institutions where they teach as a second place of employment.

As content requirements, the curriculum of the Master's program established by an institution should satisfy the National Qualification and Outcome Requirements. The program should teach general and professional competencies (information, knowledge, skills and proficiencies) and should systematically provide support for gifted students, for conducting R&D and doctoral studies.

The HAC has strict requirements on research work. In the branch of the Master's program, the higher education institution should be involved in at least two R&D projects for which it employs at least one nationally and one internationally recognized research team.

Bachelor course teaching staff should publish in their discipline on a regular basis and present their research results in science, engineering or education development. The higher education institution should conduct research in topics that prepare students for entry to doctoral programs.

As concerns capacity requirements, the higher education institution should ensure the personal and material conditions for the projected number of students in line with the needs of the discipline. The HAC examines courses from different points of view. In Hungary, when a training program is being launched, the higher education institution should consider the needs of companies active in the domestic economy. It is therefore necessary to define specific competencies to be developed in students, which can assist graduates in finding gainful employment in their chosen field.

CLIL

CLIL did not develop from nothing; in fact, it developed over decades from a movement to embed languages into learning in all subject areas. This movement was seen as redefining the borders of subjects within curricula through emphasis on the essential indivisibility of content and language learning in education. This movement was termed Languages across the Curriculum, and can be dated back to a 1975 British government report, which suggested that "first language instruction should cross over all subject matter domains" (Brinton, et al., 1989:5). The idea was that language be taught to native speakers as part of training in other curricular areas. While this movement initially gained influence in the UK and the United States, cross-curricular course offerings also came to be introduced in many countries on the European continent.

The theoretical development which grew out of these developments went on to have great impact on L2 pedagogical methodology and practice, influencing of course the later trends in CLIL, as well.
LSP is clearly one example of this impact. LSP courses accommodate students in study areas which are typically more pragmatic and goal-oriented. Instruction tends to be based on

experience of real world job market needs and seeks to make extensive use of authentic materials. Course content is tailored to the needs of specific groups of homogenous learners. The difference between LSP and CLIL lies in the inclusion of subject specialist staff in co-developing and teaching subject matter in e.g. English to non-native speaking students.

Although Languages across the Curriculum and LSP have had and continue to enjoy degrees of success, it is noteworthy that the guiding principle assumed by actors in education ministries and university administrations remained nevertheless that language skills should be taught in isolation from any substantive course content. CLIL was developed as a response to these kinds of assumption, by firmly placing the role of L2 teaching in reference to the teaching of other subjects within a new curricular paradigm (Mohan, 1979:171). Previously, both the role of the medium of instruction in subject matter learning and the content being communicated in FL learning had largely been overlooked (Mohan, 1986: 1). CLIL recalibrates the traditional view of language teaching as a separate element of tertiary education by actively targeting the dual-focused integration of content and language instruction. In higher education, the implications for teachers of implementing CLIL are manifold, and must be taken seriously and with forethought.

What CLIL brings higher education

With careful planning and execution, CLIL brings many benefits to educational programs. However, research shows that failure to handle the issue of language on an equal footing with subject material can actually do more harm than good. (van Leeuwen & Wilkinson,2003: 66ff.) Language should be taught through a focus on authentic use in context (as opposed to utilizing mere fragments of correct usage used to learn a language). Substantive content lends itself to this and also provides suitable 'comprehensible input'. (65) This is because CLIL takes the eventual uses the learner will make of the target language into account and allows learning by doing, rather than sequencing study to precede use. The specificity of language use being indeed the key to effective CLIL, the

informational content provided to students should be presented interactively from instructor to learner, while providing increasingly meaningful activities and intrinsic motivation to stimulate comprehension through real life L2 expression. This is a point where CLIL demonstrates best practice, as by its very nature, prepared instructors should be able to facilitate just these kinds of learning settings in their everyday classrooms. In order to solve problems and cope with the demands of content learning in a foreign language, the learners have to expand their linguistic resources and activate a range of cognitive processes.

As research has shown, in CLIL, these kinds of cognitive expansion must be actively supported for successful core knowledge transfer to be facilitated. (Hellekjær & Wilkinson, 2003: 81ff.) CLIL purposely builds on a learner's existing knowledge, not only of his/her own language, but of subject matter and a given academic environment, so that one's cognitive academic skills, learned in one's L1, can be transferred into one's L2. This is possible because CLIL provides ideal opportunities for the use of both content-obligatory and content-compatible language, while also facilitating chances for learners to experience incidental language learning. In essence, L2 is developed further through focus on subject matter which is not explicitly L2, but core subject matter. (Wiwczaroski)

CLIL can be implemented in a wide variety of situations and in a wide variety of ways. Local needs and limitations can be accommodated. Research has shown the neither the L1 nor academic skills are negatively affected by learning through the medium of a FL, but that progress in learning the FL is excellent. In this way, CLIL provides one way out of the dilemma of the need for more opportunities for language learning in school while the time available for language learning can only be increased at the cost of decreasing time available for content subjects, and vice versa. (Hellekjær & Wilkinson, 2003: 93)

The discussion of CLIL above is of course incomplete. However, it does show how CLIL is supposed to work in theory. Appropriately

implemented, CLIL is an excellent weapon in the arsenal of academic programs any institution of higher education can offer its own students, as well as international guest learners. Below, we will address the question of the challenges presented by CLIL to the teachers and the example of an intended course of study.

CLIL: The Problem of Competencies

Below, we focus on the specific example of the M.Sc. course in Animal Husbandry to be offered here to students from Central Asia, to see what competencies are targeted and where the problems lie in achieving their development in the learners. Here is the course:

The distribution of contact hours by semester and course (Animal Science M.Sc. in English)

Courses	Contact Hours															
	Semester I				Semester II				Semester III				Semester IV			
	lec.	pr	ex.	cr	lec	pr.	ex.	cr	lec.	pr.	ex.	cr	lec.	pr	ex.	cr
Foundation: Primary Courses																
Applied Biochemistry	2	1	T	3												
Applied Genetics	2	1	T	3												
Physiology of Production Traits	2	1	T	3												
Informatics and Computing	0	2	P	2												
Fodder and Food Chemistry					2	1	T	3								
Microbiology	2	0	T	3												
Reproductive Biology					2	1	T	3								
Total:	**8**	**5**		**11**	**4**	**2**		**6**								
Prime Courses																
World Animal Husbandry	2	1	T	3												
Aquatic Ecology and Hydrobiology	2	1	T	3												
Biometry					2	1	P	3								
Cytogenetics					2	1	T	3								
Molecular Genetics in Animal Breeding I					2	0	T	3								

Quality Management									2	0	T	2				
Management									2	0	T	2				
Animal Nutrition					2	1	T	3								
Feed preparation, processing, mixing and trading					2	2	T	5								
Meat and Milk Processing													2	1	T	3
Nutrition Therapy													2	0	T	2
Organization of Breeding													2	0	T	2
Sectoral Economics and Planning													2	2	T	4
Total:	**4**	**2**		**6**	**9**	**6**		**17**	**4**	**0**		**4**	**6**	**3**		**9**
Disciplinary Courses																
Livestock Judging	1	2	P	3												
Management of Local Genetic Resources													2	1	T	3
Ecological Management of Animals					2	1	T	3								
Molecular Genetics in Animal Breeding II									0	3	P	3				
Application of Biotechnology in Animal Breeding									1	1	T	2				
Inland fisheries management					1	2	T	3								
Pond fish culture									1	2	T	3				
Recording and Breeding Programs					1	2	T	3								
Feed Analysis									1	2	P	3				
Food Safety, Quality and Auditing									2	1	T	3				
Scientific Writing									1	1	P	3				
Total:	**1**	**2**		**3**	**5**	**4**		**9**	**6**	**10**		**17**	**2**	**1**		**3**

Communication, Rhetoric	1	0	T	2												
Human Resource Management	1	0	T	2												
Environmental Impact Assessment and Auditing									1	1	T	3				
Fish Farm Business Management													1	1	T	2
Breeding of Laboratory Animals and Nutrition													1	0	T	2
Feed Safety, Auditing													2	0	P	2
Total:	**2**	**0**		**4**					**1**	**1**		**3**	**4**	**1**		**6**

Abbreviations:
cr.: credit, ex.: exam, lec.: lecture, pr.: practical , T: assessed by final exam, P: assessed by semester performance

As evident from the table, the M.Sc. involves 38 subjects, with only one regarding language skills, as indicated in red - and this only appearing in the third semester. The faculty has provided for no classes, optional or compulsory, to handle L2 problems which may arise in their foreign students over the span of the course. Twenty-five participants from countries as linguistically and educationally diverse as Mongolia, Kazakhstan, Afghanistan and Vietnam have been enrolled for the coming fall semester. The faculty has in its possession no information as to the participants' L2 competency levels or English language writing samples. The instructors cannot be sure that the students will even be able to understand the course material, which, as the table of courses illustrates, encompasses a wide range of subjects, each with their own special vocabulary and jargon.

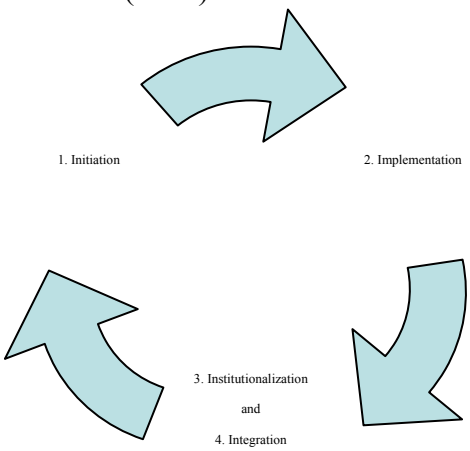
Other concerns, equally grave, are the uncertain L2 preparedness of the subject instructors, as well the methods chosen to teach these students. Excepting the native English speaker teaching the Scientific Writing course, all the remaining 32 instructors are Hungarian speakers, and only 5 of these individuals are proficient in

English in all four basic skills. The remainder claims to be able to understand spoken English, and to read it well. The Faculty has decided to run a non-compulsory English course for the instructors, which would be taught by paid, contracted teachers, not necessarily affiliated with the university. This decision should have been made prior to the advertising of the M.Sc. itself, and should have involved all the course instructors. Each instructor should have had to reach a proficiency level of English knowledge, especially as concerns the vocabulary of his/her subject matter. There should have been training in giving English language presentations, lecture and seminars in English to students, and especially in handling questions and providing descriptive answers through English to other non-native speakers. Again, only 5 of 32 the Hungarian instructors have such experience. What about the remaining 27 instructors? What can one possibly expect these individuals to do, when faced with difficult, scientific questions from non-native English speaking learners, who may themselves be unable to properly or intelligibly convey what they want to ask their instructors?

Of course, CLIL research has demonstrated that proficiency in the foreign language used for teaching in CLIL classrooms is not enough to ensure a successful educational program. The dual focus of CLIL means that it is more than just teaching a content subject in a foreign language. (Tella *et al.*, 1999, Hellekjær & Wilkinson, 2003) For this reason, proficiency in the medium of instruction, in our case, English, is also insufficient. Tella *et al*. reveal in their research how the implementation of CLIL that teacher preparation in cross-cultural skills are required before meeting groups of students from other cultures, in order to achieving teaching/course aims.

What is most misunderstood here is that the knowledge of one's content subject does not presuppose an ability to successfully teach any material in a foreign language. Every teacher active in CLIL simply must possess competency in the specific pedagogical and methodological instruments of a language teacher. It is inadequate to simply offer training in L2 to subject teachers in CLIL programs; formal training of all colleagues in CLIL programs in FL teaching

pedagogy is needed. Here, we would mention additionally the four stages of educational innovation developed by Fullan (1991) and van de Wende (1996):



According to this model, initiation presupposes that an institution or colleagues are willing to facilitate change through new innovations, which will be prepared, introduced and implemented in the following stage. The ability of these changes to become common practice denotes their institutionalization, while their integration refers to their formal incorporation into curricula and budgets.

The problem facing the M.Sc. in Animal Husbandry turns this model on its head: A new degree course has been institutionalized while leaving out the first 2 – key – stages, which also excludes the faculty's ability to secure the institutionalization of any beneficial novelty, whether to staff or students. The key term driving the model presented above is willingness. Willingness is wholly lacking in colleagues in other departments to adapt to the necessities for successful CLIL programs; namely (and the list is only partial, covering the most important elements), 1) to study how CLIL is effective elsewhere in Europe any similar faculties, 2) to coordinate and counsel with L2 teachers in the Faculty about facilitating the language component of CLIL in their courses and materials, 3) to bolster and ensure continuous subject instructor L2 competency, 4) to incorporate L2 teaching pedagogical and methodological

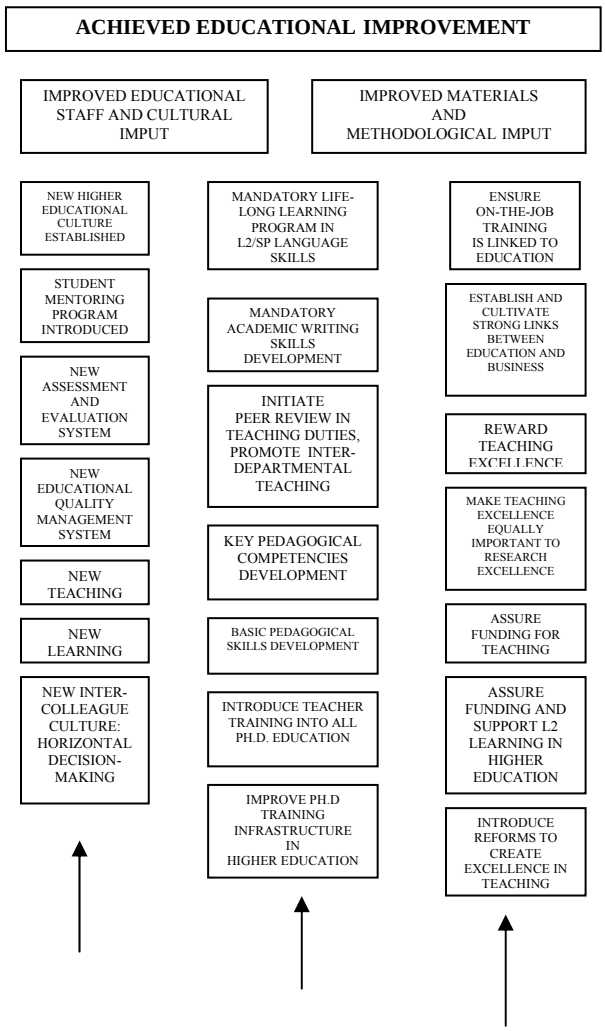
competencies in designing and teaching subject courses, 5) to gauge, augment and improve student L2 language competencies.

Traditional teacher training is of course not enough. The dual focus required to run CLIL programs also implies an increased risk – weaknesses in preparation are more likely to lead to the institutionalization of 'bad practice'. Research shows that specialized training, pre-course *and* during the run of a course itself, is necessary. (Hellekjær & Wilkinson, 2003) Studies of CLIL programs in Scandinavia and The Netherlands resulted in the finding that the higher the level of education a course using CLIL seeks to provide, the more advanced the language and academic skills are required – the result of which means that the more complex and challenging the subject matter, the higher the level of L2 proficiency will be needed to teach and sustain a course's quality. More extensive knowledge and training is required than what is traditionally provided. (See Wiwczaroski & Silye, 2003)

At best, the problems outlined above could possibly be addressed through the collaboration of subject and L2 teachers. Content teachers teaching in CLIL classrooms should be able to access the help of language professionals. Financial and administrative concerns aside, modern higher education requires interdisciplinary approaches, and any faculty's teaching staff should be compelled to learn and use team-teaching, especially in any CLIL setting.

It appears that the M.Sc. in Animal Husbandry to be launched in our faculty, in order to have any degree of success, would first require a new paradigm in institutional thinking. This is because a teacher of CLIL must not only be fluent in the language used for instruction, but work together with a trained L2 teacher with experience in language testing and Languages for Special Purposes teaching in the related subject areas to be offered in a course. Any specialist in the subject being taught must not only be trained in the methodology of teaching that subject, but also immersed in L2 teaching methodology, in order to be able to expertly and properly teach their courses. Equally vital is introduction to and experience in

collaborative teaching. All these requirements entail a rethinking and retooling of the role of the teachers used in the Faculty to teach in CLIL – whether specialist subject teachers or L2 teachers. This reality is that which most challenges the Hungarian educational system. Below, I present a bottom to top model for facilitating this change:



As can be seen, the changes are manifold and intertwined. The relationships between colleagues, i.e. the culture of how colleagues see, respect and work with each other must evolve into a more receptive, cooperative, collaborative style. This change will necessitate adapting or, in Hungary's case, the actual introduction of educational quality management in the institution. Improved quality requires staff-student dialogue and especially mentoring programs be introduced, for which the staff will require training to implement properly. The outdated and harmful 'Prussian'-approach to professional and pedagogical interaction with students must cease to exist, in which students are passive 'recipients' of knowledge. Indeed, the Hungarian term for student is *hallgató*, meaning *listener*, reflecting how deeply this approach has penetrated and nested in the educational culture to date. Perhaps the term for student should undergo a change. Teacher and Ph.D. training must also be reevaluated, to ensure proper standards and rigor in pedagogical and methodological practices, communicative competencies, writing skills and peer-to-peer evaluative and constructive developmental cultural adaptation. Simultaneously, the L2 knowledge required of all staff must be ensured with life-long updating possibilities, available at the home institution. Most importantly, 1) excellence in teaching must be placed on an equal footing with the requirement of excellence in research, and this must be rewarded, just as researchers are, with promotion to full teaching professorships, and 2) a cessation of the discrimination against L2 teachers and the dismantling of L2 teaching departments in Hungarian higher education must come to pass.

In closing, understanding how change in each of these areas can transform faculties into dynamic, creative and successful future higher educational program providers may serve as the linchpin to creating successful international programs in the near future. Moreover, the outcomes of such understanding may serve to elevate the position of L2 teachers as colleagues and departments in the university community.

We have attempted to point to those areas of educational cultural which are absolutely necessary to ensure the success of any CLIL program: the graduation of students possessing highly marketable skills for the international job market. Whether our Faculty will rise to the challenges such a goal poses remains open.

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