

English for Specific  
Purposes in Higher  
Education through  
Content and Language  
Integrated Learning



# English for Specific Purposes in Higher Education through Content and Language Integrated Learning

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and Language Integrated Learning

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## PREFACE

Over the last few decades, the methodological term CLIL (Content and Language Integrated Learning) has been widely used within the conceptions of language education and professional education. The use of CLIL provides the potential for time saving in terms of language and content integration. Aside from this, it also offers a new dimension of thinking and deepening foreign language competences within non-linguistic subjects. These aspects contribute towards English Language Teaching (ELT) modernization with the aim to develop the learner's autonomy and acquisition of knowledge achieved beyond the schooling institution. The objective of English for Specific Purposes (ESP) courses in higher education are to prepare students for their real professional life by developing communicative language skills. This work focuses on CLIL methodology within the context of ESP classes at the Slovak University of Agriculture (SUA) in Nitra, Slovakia. The aim of the work is to find out whether project work, one of the recommended techniques within CLIL methodology, contributes towards the development of communicative language skills and an increase in professional vocabulary. In the model of *design-based research* the triangulation of three methods – comparative analysis, content analysis, and focus group – provides the holistic view of project work implementation into ESP classes. Two groups of students are compared, one where the CLIL group (81 students) uses project work in ESP classes, whereas the non-CLIL group (23 students) follows the “traditional” approach, i.e. the use of tailor-made textbooks consisting of adapted texts with specific vocabulary and various exercises aiming to develop language competences. *Comparative analysis* compares the results of the tests in both groups, testing the acquired professional vocabulary, comprehension of professional texts, writing skills and acquisition of chosen grammar structures, within the B1 level of proficiency, recommended by the Common European Framework of Reference for Languages CEFR (2001). *Content Analysis* as a qualitative technique in this research classifies the specific vocabulary used in student projects in the CLIL group and then compares this with the wordlist offered in the textbook used in the non-CLIL group. The “specificity” of the vocabulary is classified according to Coxhead's Academic Wordlist (Gillet 2011), where the words are defined according to chosen

professional specializations. The *focus group*, as a qualitative technique of the research, and evaluated by SWOT analysis, looks at the attitudes and critical comments of the students in the CLIL group, on the implementation of the project work within ESP classes at the non-philological universities.

**Keywords:** CLIL, project work, ESP, higher education, non-philological universities

## INTRODUCTION

Ideas related to teaching and learning with the aim to make the educational process of a higher quality, and the focus on views of education in the third millennium, show the direction of modernization in education as such: That it should serve as a means of cross-connection of subjects with the problems of the world around us and the life of students, with the aim to develop knowledge mainly through skills and abilities needed for solving life's situations. That education and upbringing in life are priorities, together with the development of learners' autonomy, adaptability, creativity, and ability to solve problems. The comparison in the ways of thinking in the second and third millennium clearly shows new tendencies and changes in education that are reflected in English Language Teaching (Table 1).

**Table 1** *Learning in the second and third millennium* (Townsend, Clarke, Ainscow 1999, p. 366)

<b>2<sup>nd</sup> Millennium Thinking</b>	<b>3<sup>rd</sup> Millennium Thinking</b>
Important learning can only occur in formal institutions.	People can learn from many sources.
Everyone must learn a common 'core' of content.	Everyone must understand the learning process and have basic skills in learning.
The educational process is controlled by the teacher. What is to be taught, when it should be taught, and how it should be taught, should all be determined by a professional person.	The educational process is controlled by the teacher. What is to be taught, when it should be taught, and how it should be taught, will all be determined by the learner.
Education and learning are individual activities.	Success is based on how well learners learn as individuals.
Education and learning are highly interactive activities.	Success is based on how well learners work together as a team.

Formal education prepares people for life.	Formal education is the basis for lifelong learning.
The terms 'education' and 'school' mean almost the same thing.	School is only one of a multitude of steps in the educational journey.
Once you leave formal education you enter the 'real world'.	Formal education provides a range of interaction between learners and the world of business, commerce, and politics.
The more formal qualifications you have, the more successful you will be.	The more capability and adaptability you have, the more successful you will be.

The way of thinking in the third millennium defines the term 'modernization' in teaching and learning as such. The aim of our work is to find out the contribution of CLIL methodology towards the modernization of English language teaching within the context of English for Specific Purposes.

Thus, the vision of a learner nowadays is to be autonomous, to be able to think critically, to be competent enough to evaluate the source and nature of received information, and to be skilled in both macro- and micro-skills. Therefore, even the learning process should facilitate and enable such learners' development at all levels of education. English language education has been an inseparable part of the curriculum in the Slovak Republic since 2011. Under this view, learners of English start the foreign language route at the age of ten and finish it in secondary school education with B1, B2, or C1 level in English according to the CEFR, depending on the type of school, whether it is a vocational, a secondary grammar, or a bilingual school (source: [minedu.sk](http://minedu.sk)). Universities usually continue in language education however, but only within their specific fields and specializations, thus providing specific curriculum covering academic or technical English throughout their courses.

This work is divided into two parts: theoretical and research. The theoretical part comprises the key concepts of the work, namely new trends in English Language Teaching (ELT), modernization of ELT, and related terms such as learners' autonomy.

Then the second chapter being the theoretical part approaches the Content and Language Integrated Learning (CLIL) methodology with its aims, concepts, and uses in different European countries. CLIL as an umbrella term covers a lot of advised techniques and this work focuses mainly on project work as one of them.

The third chapter focuses on one context of English language teaching and learning and that is English for Specific Purposes (ESP). There are various definitions and approaches however, and this part of the work attempts to define the relationship between ESP, CLIL, and project work. The theoretical part finishes with the mapping of research carried out in higher education within CLIL methodology in the context of ESP.

The research part describes the study carried out within ESP classes at the Slovak University of Agriculture in Nitra, Slovakia. The objectives of the design-based research were to learn about the impact of CLIL implementation in ESP classes in higher education at non-philological universities. *Design-based research* comprises of a triangulation of qualitative and quantitative methods, particularly comparative and content analyses and focus group meetings. The three techniques were applied on two groups of students, specifically the one where CLIL was implemented and the second one without the impact of CLIL (from now on called the *non-CLIL* group). The results showed that at the B1 level, according to the CEFR, the students in the CLIL group developed their language communicative competences through their project work comparably to the non-CLIL group; however, with the added value of the extra amount of specific vocabulary within the chosen topics. The focus group meetings revealed that the students' opinion of CLIL in ESP classes was positive and they accepted the challenge of taking responsibility for their learning in terms of building learner autonomy as one of the key concepts of the modern way of teaching and learning languages.





## MAIN CONCEPTS

### 1.1 Trends in English Language Teaching

The orientation and choice of a foreign language is influenced by the needs of markets, economies, cultures, and traditions etc. These needs feed back into newer forms of effective and modern forms of language teaching procedures and methods. On that account, a re-evaluation of the procedures for language teaching has appeared. Foreign language acquisition is not only seen as a prestigious matter in the eyes of the public anymore, so much as it has become essential and inevitable. Approaches and methods in language teaching have changed throughout history. Historical trends are to react and respond to one another with totally opposing views on the same issue, and English language teaching is not an exception. In the direction of behaviorism, English language teaching developed methods such as Audio-lingual, Total Physical Response, and Silent Way, etc. (Cf. Kováčiková, Veselá; 2016). Later on, as a response to behaviorism, cognitive theories appeared, diverting from imitation highlighted in behaviouristic approaches, focusing instead on mental processes in the human brain. Bloom's taxonomy and its revised version by Anderson and Krathwohl (2001) reflected this notion in education with a double-layered learning design. The first layer names and describes the types of knowledge we learn and the second describes the processes through which we obtain knowledge. Language education has profited from this taxonomy, currently in widely used language communicative textbooks where tasks follow the principles of the aforementioned taxonomy. The main aim is to develop the language user as a critical thinker, as at the top of Bloom's pyramid is critical thinking and creativity. Furthermore, constructivism introduced the theory that every person constructs his or her knowledge based on critical consideration.

According to Karn (2007), language teaching in the twentieth century principally underwent numerous changes and innovations. He claims that the history of consideration in language teaching goes back to the teaching and learning of Greek and Latin in the Middle Ages, however, it became

an independent profession only in the twentieth century. When Latin became a dead language, modern languages like English, French, and Italian started to be taught using the same method of teaching as used for Greek and Latin, commonly known as the Grammar Translation Method. This method was ultimately opposed and rejected as it ignored the development of the oral proficiency of learners.

Ever since then language teaching seems to be in search of better and more effective methods of teaching. Realizing the need for communication and oral proficiency in learners, some individual language teaching specialists (C. Marcel, T. Prendergast, F. Gouin) promoted alternative approaches to language teaching. None of these approaches were scientifically proven. In the 1880s, linguists (H. Sweet, W. Viëtor, P. Passy) stressed that speech was the primary form of language communication and methods should be based on scientific analysis of language and the study of psychology. It was realized that speech patterns were more significant than grammar structures. This led to the development of what is called the Natural Approach and also to the development of the Direct Method. However, they both lacked a methodological background. The most active period in the history of approaches and methods in English language teaching (ELT) was from the 1950s to the 1980s.

Richards et al. (2002, p.2) says that “*language teaching in the twentieth century was characterized by the frequent change and innovation and by the development of sometimes competing language teaching ideologies.*”

It is here when we see the adoption of a grammar based method, which came to be known in the United Kingdom as the structural approach, and then came the Audio-lingual Method in the 1950s and the 1960s, which itself was later surpassed by the Communicative Approach. McDonough (2003) put to the centre the concept of Hyme’s ‘communicative competence’ and his criticism of Chomsky’s attention to correctness at the expense of appropriacy of use in specific contexts.

During the same period other methods attracted enthusiastic followers including the Silent Way, the Natural Approach, and Total Physical Response, etc. In the 1990s, Content-Based Instruction and Task-Based Language Teaching emerged. Other approaches, such as Cooperative Learning, the Whole Language Approach, and Multiple Intelligences also developed (Cf. Gardner 1993; Karn 2007).

According to Larsen-Freeman (2004, p.186) “*language learning and teaching are dynamic, fluid, mutable processes. There is nothing fixed about them.*” Unlike the teaching of other subjects which by and large remain the same, the ELT tradition has been subject to constant change

especially throughout the twentieth century.

Crossovers from general educational trends such as Cooperative Learning, Neurolinguistic Programming, and Multiple Intelligence theory have influenced language teaching and learning considerably. Content-based and task-based approaches emphasized teaching language *through* communication rather than *for* it. They aim for students to use English to learn it. Further developments in foreign language teaching and learning show an increasing significance of non-formal education in terms of global tendencies shifting from formal education into self-education, otherwise known as autonomous and lifelong learning. The autonomous approach shifts the responsibility for learning onto the learners. It does not mean that when applying such an approach a teacher is side-lined. As Holúbeková (2004) points out, it is necessary to realize that there is a very low percentage of learners who are completely independent. The role of teachers is thus to help their students on their own journey towards autonomy, meaning to teach them how to learn and fully respect their rights for self-regulation. The author then states that it is necessary to draw the attention of students from the content part of learning toward the process of learning. This means that the main focus is not put on *what* to learn, rather *how* to learn. Opposing traditionally oriented classes where teaching how to learn was neglected, the autonomy of a learner and other learner-oriented approaches require the students to get to know the rules of acquiring the language. Pokrivčáková et al. (2010, p.7) says that “*the common denominator of all the innovative and reforming approaches are learner-centred approaches.*” Learner centeredness as one of the modern trends in ELT is the demand of its time. English teachers stopped delivering lectures to passive students in the classroom. They play the roles of facilitators, motivators, and supervisors, not authorities, and learners are the active co-operators who take responsibility for their learning.

Out of all the modern approaches in ELT, our work mainly focuses on two approaches: Content-Based Language Learning and Task-Based Learning, as these are closely connected to our further study.

*Content-Based Language Learning* (CBLL) is based on the view that language is best learned when it is used as a medium of instruction to acquire knowledge about a subject matter presented in a meaningful context (Brinton et al. 1989). Subject matters may include themes or topics governed by students’ needs, purposes, and interests, or any subject in their curriculum. Students also determine the context of vocabulary and grammar teaching and skill improvement (Snow 2011). In this approach, language learning is carried out through several learner-centred tasks in

which the students read, write, listen to, and speak about selected content in an organized way. For example, there may be authentic reading materials that require students to interpret and evaluate a text in oral or written form (Brinton et al. 1989). In CBLL, academic writing is seen as an extension of reading and listening, and students are asked to synthesize facts and opinions from multiple sources in their academic writing process. Research in educational and cognitive psychology provides support for CBLL. According to Alexander et al. (1994) there is a relationship between student interest in the subject matter and their ability to process it, recall information and elaborate on it. Project work being a part of CBLL is according to Stoller (2001):

*“a natural extension of CBLL and a versatile vehicle for fully integrated and content learning making it a viable option for language educators working in a number of instructional settings, including General English, English for Academic purposes and English for Specific Purposes.”*

*Task-Based Language Learning* (TBLL) is an approach based on the use of tasks as the core unit of planning and instruction in language teaching. As an extension of Communicative Language Teaching, TBLL is based on the rationale that learners learn a language by interacting meaningfully and purposefully while engaged in tasks. Language is seen primarily as a means of making meaning, and it involves three dimensions: structural, functional, and interactional (Nunan 1991). The theoretical foundations of TBLL can be drawn from second language acquisition theories highlighting the importance of meaningful interaction. In order to develop communicative competence learners must have extended opportunities to use the language productively. In TBLL, the belief is that the tasks can provide such opportunities (Ellis 2003). According to Bygate et al. (2001, p.11): *“tasks are activities where the target language is used by the learner for the communicative purpose in order to achieve an outcome.”*

Ellis (2003) describes a task with the following criteria:

- A task is a means to develop language proficiency through communicating. In order to do this, a task should involve real-world processes of language use. These may appear in the form of simulated activities found in the real world such as having an interview or completing a form, or functions that are involved in the communicative behaviours of the real world.

- To achieve these ends, a task should involve a gap in information, opinion or reasoning. This gap creates a potential to challenge the learner to close it.
- The linguistic resources of the learner are activated by making use of any of the four skills (receptive – reading, listening, or productive – speaking, writing).
- The non-linguistic resources are the cognitive processes that affect the linguistic form that the learners choose and use. Some examples are selecting, classifying, ordering, reasoning, and evaluating the information.
- All these are best done by setting work plans with clearly defined communicative outcomes.

Both approaches are implied in CLIL methodology (discussed further in this work) and their common objective is to develop communicative competence as one of the main aims of English Language Teaching.

## 1.2 Communicative Competence

In the following chapter the main concepts, fields, and terms connected with this area of research are discussed. Firstly, language communicative competence as the objective of language education, as well as outcomes of TBLL and CBLL (discussed in the previous chapter), are defined. Then, CLIL as a way of modernization of the learning process is approached. Eventually, ESP as a branch of ELT, and our main area of research, is introduced.

All human competences in a certain way contribute to the development of communicative ability of a language user and they can be considered as aspects of communicative competence. Communicative competence related to language teaching and learning was used for the first time in 1972 by Hymes. In his study he argued with Chomsky on concepts of competence and performance which belong to Chomsky's theory of generative grammar. Chomsky understood competence as "systems of rules which can be called the grammar of language" (Chomsky 1969 p.9), i.e. as a competence of the language system on the side of the speaker and performance as a real speaking action with the use of that competence. According to Hymes, it is necessary to think of competence in a broader sense by implementing cognition of how to act based on competences in real speaking activities. As a sociolinguist he also emphasized the socio-cultural dimension – what a speaker needs to know in order to comprehend and use the language. This broader sense of Chomsky's

competence conception Hymes called ‘communicative competence’.

Since Hymes, other authors have further tried to define communicative competence.

One is Widdowson (2003), who states that:

*“a basic problem of different modes of communicative competence lies in a fact that in those modes a complex process is divided into a static file of parts and in such a file the particular models cannot cope with mutual dynamic relations which are active in communication itself. Thus, when trying to make those models operational in a language learning, basic mutual relations which make the whole, are absent.”* (Widdowson, pp.169-170).

The Common European Framework of Reference for Languages (CEFR) includes the description of key terms, such as communicative competences, skills, and knowledge, within various contexts under various conditions, involving language processes. *Communicative language competences* are described as the sum of knowledge, skills, and characteristics that allow a person to act by using specifically linguistic means (CEFR 2001, p.9). In a narrower sense they have the following components:

- linguistic competences (consisting of lexical, grammatical, phonological competences, orthographic, and orthoepic competence),
- sociolinguistic competences,
- pragmatic competences.

Communicative competence is thus an ability to use a language in different situations where a language user comes out with a basic knowledge of a language system. It is the ability to purposefully choose the most suitable language material from a language system. In other words, communicative competence is the level of language acquisition and the ability to use it in communication. It is important to acquire not only verbal behaviour but also non-verbal expressional components, i.e. to draw attention to paralinguistic as well as extra linguistic parts of speech (Findra 2004).

Communicative competence also covers other knowledge which helps a speaker to communicate on a certain linguistic and social level, so that their linguistic and communicative behaviour is in accordance with social manners.

It is thought to be one of the main objectives of ELT classes at all levels of schooling. This study is set in the context of ESP courses in higher education and thus the development of communicative competence

in ESP becomes compelling. The competences defined at B1 level according to and described in detail in the CEFR within ESP context are discussed in the following chapter as they are also the subjects of the research.

### 1.3 Learner Autonomy

New trends and approaches in education explicitly and implicitly mention the term *Learner Autonomy*. As Tandlichová (2010, p.164-165) says, autonomous learning is one type of learning, i.e. the human possibility to actively and creatively broaden the ability to adapt to a changing situation. In foreign language teaching it means never to be satisfied with the level of gained knowledge in a language but improve constantly. It is a never-ending story in which we still should develop accuracy and fluency through different courses, authentic devices like TV and radio etc.

Schools and educational institutions are supposed to teach us how to satisfy our hunger for knowledge, how to find and work with information, as well as use it in the most appropriate way.

Choděra (2006) on the other hand, states that autonomous learning is learning without a teacher. Students set their educational aims and also the means in which to follow them. Humanization attempts which called for learners' independence in a learning process, introduced autonomous learning as a process which is managed by the learners in terms of when, what, and how they want to learn. However, learners in some way must have an "authority" figure that serves as their help and support, and thus avoid making mistakes and errors.

Success in autonomous learning of foreign languages depends on many circumstances such as:

- typological differences between the target language and mother tongue;
- possibilities to use the target language;
- age, level, and language competences;
- previous experience in language learning;
- creativity and independence of the learner;
- motivation;
- typological characteristics of a learner (if a learner is communicative or not).

However, Little (2011) mentions that despite the ever-expanding literature, learner autonomy remains a minority pursuit, perhaps because all forms of ‘autonomisation’ threaten the power structures of educational culture. Later on, he states that in the particular case of second and foreign languages, effective communication depends on a complex of procedural skills that develop only through use; and if language learning depends crucially on language use, learners who enjoy a high degree of social autonomy in their learning environment should find it easier to master the full range of discourse roles on which effective spontaneous communication depends. According to the model in which the teacher’s role is to create and maintain a learning environment in which learners can be autonomous in order to become more autonomous, the development of their learning skills is never entirely separable from the content of their learning. Learning how to learn a second or foreign language is in some important respects different from learning how to learn maths or history or biology.

Nevertheless, in our work *learner autonomy* is understood as a **process** more than a **product** of a modern educational approach. It is an important and necessary objective in further mentioned concepts of the research, namely CLIL methodology, English for Specific Purposes, and Project-work.



## CLIL METHODOLOGY

Content and Language Integrated Learning is a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. It can be viewed as one example of curricular integration. CLIL as an educational approach was developed in Europe and is, therefore, very strongly European-oriented. It is based on the assumption that foreign languages are best learnt by focusing in the classroom not so much on language but on the content which is transmitted (Marsh 2007).

According to Pokrivčáková et al. (2008, p.7), CLIL does not represent “*a revolutionary change*” in education as it actively flows from the way of schooling in some European bordering regions. She also states that it is derived from methodologies such as ESP as one of the most widely spread methodologies of bilingual education which is discussed in the following paragraph. However, it does not only cover the immersion and subject learning through another language (Mehisto et al. 2008). Its typical context would be European classrooms taught in English by non-native content teachers, classified as ‘strong’ or ‘hard’ CLIL by Ball (2009) and Bentley (2009).

The term CLIL has been used since the nineties in the 20<sup>th</sup> century, however the integrated teaching of language and subject (as a methodology of bilingual education) was realized earlier. Each country has its own terminology concerning integrated learning, for example *cross-curricular language learning*, *content-based learning*, or *dual education*. Martín de Lama, M.A. (2015), in her case study on university students’ opinions towards CLIL tries to find the link between content and foreign language. After applying CLIL scaffolding techniques in her research she recommends the CLIL application in a higher educational context.

Thus, CLIL offers an interdisciplinary approach in teaching content through the language and by introducing scaffolding techniques it brings its fruits through language acquisition within content topics at the same time.

## 2.1 From Integration towards CLIL

As we would like to introduce CLIL (Content and Language Integrated Learning) methodology we are unlikely to avoid the basic term “Integrated Teaching” (also known as “cross-curricular teaching”). The word *integration* creates a fusion of sectors that used to be isolated in the past.

Škodová (2010) mentions that integrated teaching is a modern teaching form which is very useful for a learner living in an “integrated world”. Learners of today naturally have practical experience with integrated information and communication technologies and they want to use their knowledge immediately as well as learn within their practical experience. This trend should be unavoidably reflected in the educational process.

According to the National Assessment of Educational Progress (NAEP 2010), although students are learning the basic information in core subject areas, they are not learning to apply their knowledge effectively in thinking and reasoning. Interdisciplinary/cross-curricular teaching provides a meaningful way in which students can use knowledge learned in one context as a knowledge base in other contexts, in and out of school. Many of the important concepts, strategies, and skills taught in the language arts are “portable” (Perkins 1986). They transfer readily to other content areas. The concept of perseverance, for example, may be found in literature and science. Strategies for monitoring comprehension can be directed to reading material in any content area. Cause-and-effect relationships exist in literature, science, and social studies. Interdisciplinary/cross-curricular teaching supports and promotes this transfer. Critical thinking can be applied in any discipline (Houghton Mifflin 1997). Considering the fact that the aim of education is to prepare a learner for living in a modern society, with critical thinking and the ability to choose from information “floods”, integrated teaching has been increasing in its value and should be considered in any type of schooling, whether it is primary, secondary or higher education.

Hánková (2007) in her paper mentions a few terms related to CLIL; CLIL – Content and Language Integrated Learning means education of non-linguistic subjects through a foreign language whereby the attention is paid also to the development of the target language. CLIL belongs to the stream of language education which is labelled as Content-Based and Task-Based Language Learning which we have discussed in Chapter 1. Marsh (2008) states that compared to other content-based approaches, the specific novelty of the CLIL approach is that classroom content is not so much taken from everyday life or the general content of the target language culture but rather from content subjects, from academic or

scientific disciplines or from the professions. The author outlines three points which are essential in the context of CLIL.

- CLIL must not be regarded simply as an approach to language teaching and learning, however, it is concerned both with content and language. Thus, learners are more motivated than in non-CLIL context and they look at content from a different and broader perspective.
- Within a CLIL framework content and language are learnt in integration. The two subjects – a language and a content subject – are related to each other and dealt with as a whole. In non-CLIL surroundings the learners have difficulties in establishing relationships between subjects.
- In CLIL another language is used to teach and learn content subject, i.e. it is the medium of instruction. Language is both content and medium in the CLIL classroom. (Ibid.)

Learning languages and other subjects in an isolated way is not very effective. If it was, then learners would not be able to use gained knowledge in cross-curricular relations. CLIL creates a fusion between content and language, between subjects, and challenges independent and cooperative learning, and creates the base for lifelong development. Interdisciplinary education can increase a student's motivation for learning, as well as the level of their engagement. As opposed to isolated learning, students within a cross-curricular project are able to see a practical use for what they have been learning (Houghton Mifflin 1997).

Language and content are mutually connected, dependant, and inseparable. The CLIL potential is to use language as an instrument naturally. It can be realized in various ways and situations and has a lot of advantages concerning the quality of learning, as it increases opportunities for communication, increases gained knowledge from other subjects, supports interdisciplinarity, prepares students for lifelong learning, and strengthens learner's autonomy and decision making in learning (Pokrivčáková et al. 2008).

## 2.2 Types of CLIL

As Pokrivčáková (2008) states, in the majority of European countries, preschool institutions and elementary schools implement *immersion CLIL* programmes. The first language of education is the pupils' mother tongue, while a foreign language is only used in some lessons, for teaching some

topics or some subjects.

Johnson and Swain (1997) define immersion programmes as follows:

- A foreign language is the medium of instruction.
- The immersion curriculum parallels the local mother language curriculum.
- Overt support exists for the mother language.
- The programme aims for additive bilingualism (see 2.3).
- Exposure to the foreign language is largely confined to the classroom.
- Students enter the programme with similar (and limited) levels of proficiency in the foreign language.
- The teachers are bilingual.
- The classroom culture is that of the local mother language community.

A *Subtractive CLIL programme* is a programme in which a foreign language is used at the expense of the mother tongue. It does not pay attention to the national cultural values, however they are not suppressed. An example is a course for immigrants with the aim to adapt very quickly (Pokrivčáková 2008).

Distinguished authors writing about CLIL, Ball (2009) and Bentley (2009), differentiate between ‘hard’ or ‘strong’ CLIL and ‘weak’ or ‘soft’ CLIL. A typical context of hard CLIL would be teaching and learning academic subjects in a foreign language mainly instructed by subject teachers. On the other hand, weak CLIL is more focused on language rather than content. As Ikeda (2013) states, CLIL has been introduced as an alternative language teaching methodology already mentioned in the ELT methodology textbooks by Scrivener (2011), Harmer (2011), or Ur (2012). Other evidence of bringing CLIL into the practical world of ELT are the numerous published CLIL textbooks launched by MacMillan publishing house, Oxford University Publishing, or Cambridge University Press (Cf. [macmillanenglish.com](http://macmillanenglish.com), [elt.oup.com](http://elt.oup.com), [cambridge.org](http://cambridge.org)). Therefore, CLIL methodology is expected to grow in its importance implemented in various age and learners’ groups.

Ikeda (2013) shows the comparison of CLIL authors Ball, Bentley, Dale, and Tanner, in the CLIL continuum as follows:

Ball (2009) recognizes total immersion, partial immersion, subject courses, language classes based on thematic units and language classes with greater use of content.

Bentley (2009) differentiates partial immersion, subject-led (modular) courses, and language led courses, whereby Dale and Tanner (2012) talk about subject lessons taught by CLIL subject teachers and language lessons taught by CLIL language teachers. All in all, that is a great shift from the simple division of strong/hard CLIL (content oriented) to weak/soft CLIL language oriented lessons.

In our research, under the term CLIL implementation, the type of *immersion* of *weak CLIL* refers to the fact that CLIL techniques were applied in the lessons devoted to language within the contents of specific areas of the specialisations (ESP) of the learners in the higher education.

### **2.3 Benefits and Drawbacks of CLIL**

According to the European Commission (2011) the benefits of CLIL methodology are as follows:

- builds intercultural knowledge and understanding;
- develops intercultural communication skills;
- improves language competence and oral communication skills;
- develops multilingual interests and attitudes;
- provides opportunities to study content through different perspectives;
- allows learners more contact with the target language;
- does not require extra teaching hours;
- complements other subjects rather than competes with them;
- diversifies methods and forms of classroom practice;
- increases learners' motivation and confidence in both the language and the subject being taught.

Our attention is paid especially to the point which says that CLIL complements other subjects rather than competes with them, which is in concordance with our initial comments on “integrated teaching/learning”. The same is approved in the last point where it positively influences motivation as well as the content of the subject.

As for drawbacks, CLIL should be perceived in objective reality and its implementation brings with it some challenges and problems. Primarily, its ‘global’ perception brings several misunderstandings and problems mainly in applying its principles in particular contexts. For example, in Slovakia, as stated by Naštická et al. (2018), when defining the key term CLIL it can sometimes be interchanged with bilingual education, which is wrongly misunderstood as teaching and learning in

another language instead of the mother tongue and excluding instruction in the mother tongue completely. Therefore, instruction during CLIL lessons is basically led in one language only (foreign language in this case) as is not always the case with bilingualism. Thus, it is somewhat difficult to state what CLIL really is or is not.

Another unclear definition might be the balance between integrating content with language. It is partially explained by dividing ‘soft’ and ‘hard’ CLIL. As Naštická et al. (2018) claim, there is still not enough scientific evidence to prove that CLIL is more effective than ‘traditional’ approaches. Moreover, there are several functional models for evaluation and assessment in CLIL (Otto 2018) so it is difficult to choose and apply some of them in particular educational contexts. Then there is still the lack of relevant CLIL materials. Last but not least, CLIL efficacy is quite hard due to the above-mentioned reasons. Paran (2013) introduces ten significant conditions that should be fulfilled for CLIL to be effective.

- CLIL can be successful in the case that it is implemented selectively. That covers two levels – the individual level of the learner and the institutional level.
- CLIL brings the highest achievements to those students who have already been “good”. This indicates that CLIL lessons are usually given to a group of ‘selected’ students, as although CLIL methodology is highly recommended by state authorities, it is still not compulsory and thus only a selected group of students can attend CLIL lessons.
- CLIL is successful if CLIL teachers are highly competent in L2. The recommended level of language competence is B2 (Bentley 2009), but in reality content subject teachers do not often achieve this level and they struggle with language instruction in their lessons.
- CLIL lessons are successful in cases where, apart from the content of the lesson, students have extra language support in L2. This speaks about the benefit to the students, provided that they feel confident enough to grasp the basics of the language of instruction during CLIL lessons. Thus, as suggested by Naštická (2018), CLIL lessons at elementary and secondary schools should be supported by language lessons as well.
- CLIL is more of a success the higher the teacher’s education level. This means that in cases where the language competence of a teacher is accompanied by the methodology of teaching languages

plus a degree in teaching a non-linguistic subject, a more successful implementation of CLIL methodology is presumed.

- CLIL is a success in cases where teachers are updated and instructed in the integration of language and content. Not every lesson that is taught in L2 is a CLIL lesson, and teachers should be aware of CLIL practices and techniques that are core or crucial in CLIL lessons.
- CLIL is a success in countries with higher literacy and education rates. The best example is Finland, with its prior focus on teacher education and therefore excellent results in PISA testing in comparison with other countries. Finland was also the pioneer in the implementation of the CLIL method and in the research of its effects (Cf. Jäppinen 2005).
- CLIL is a success in the countries where L2 is widely approachable.
- CLIL works better in private schools. This point is connected to selective implementation.
- Numerous factors influence CLIL success. As for Paran (2013), each of these aforementioned items can be discussed from another point of view. Teachers and students at a certain level of L2 language competence, coupled with selective implementation, seem to be the essential prerequisites for a positive outcome of CLIL methodology.

## 2.4 CLIL in Europe

CLIL found its place in European education very quickly. Before 1980 there were few countries which had integrated content and language education, and in those that did it happened to be in more prestigious schools, but today CLIL methodology is known throughout the whole of Europe. The Eurydice Report (2006) provides a detailed overview of the countries and target languages. Marsh (2008) claims that CLIL methodology is applicable within all educational levels – elementary, secondary, and tertiary.

The main reason for introducing CLIL methodology into school practices in Europe is because of the practical need for the essential development of language education: on one hand a competence in the field of languages, while on the other exists the limited resources for the foreign language education (time limit, human resource, financial reasons).

According to Pokrivčáková et al. (2008, pp.8-10), the most successful countries with CLIL application are Holland and Finland. Looking at

Bulgaria, the authors think that its way could be inspiring for Slovakia. Considering the fact that we share a similar political background and both of our implementations of language education started later than in other European countries. In Bulgaria CLIL has been implemented in 125 schools at the common elementary school level. After reaching B1/B2, students can choose at least three subjects taught by CLIL such as history, biology, geography, chemistry, physics, mathematics, or philosophy. The main problem is considered to be the lack of professional teachers who would be competent enough to teach via CLIL. The same problem seems to be encountered in our country.

In Hanková's paper (2007) we can find information on CLIL in the Czech Republic. The "National Plan of Language Education" from 2006 considers CLIL to be one possible way of making education more effective in the Czech Republic. CLIL has mostly been implemented in elementary schools so far; there are few examples of it at the secondary level. Again, the problem is the lack of competent teachers. However, in that very paper, the author introduces a project on the improvement of teachers and enhancing the methodological knowledge of qualified teachers. This could help to face, as well as solve, the aforementioned problem. The output of the project should be the methodological handbook for teachers which could be very helpful in their teaching career.

## 2.5 CLIL in Slovakia

Pokrivčáková (2013) summarizes CLIL implementation and research in the Slovak Republic. Preschool institutions, primary schools, as well as lower secondary schools which have applied CLIL as a foreign language teaching method, use the *immersion CLIL programmes*.<sup>1</sup>

In Slovakia, CLIL has been applied in primary and secondary education and mainly business academies (the Business Academy in Hlohovec, Trnava, and Topoľčany, two in the Bratislava region, and a Private Business Academy in Žiar nad Hronom, etc). However, there are no specific surveys or studies available on applying CLIL in tertiary education. CLIL can offer a lot of improvements even in higher education. Thus, with the integration of content, some other subjects within learning English language cannot only save time but may certainly support the autonomy of students, use of various resources, reasoning, and argumentation in a foreign language (Škodová 2010).

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<sup>1</sup> see 2.2



On the other hand, it puts a bigger burden on the teacher's shoulders. The best alternative is when the language teacher is also an expert in a specific field which they present in the class. However, this would be very optimistic and utopian to think that this can happen at every university or college. Then there is the chance to cooperate with teachers of other specialized subjects and thus preparation for the class demands more time and effort. CLIL application, in terms of comprising CLIL scaffolding techniques in the English lessons for Specific Purposes (ESP) or English for Academic Purposes (EAP), can bear its fruits in terms of interconnecting the content of student specialisation with the language skills and foreign language competences necessary for their field of study.

Coyle (2009) says that CLIL in tertiary level classrooms has commonalities with primary school learning, and that tools for good practice can be adapted from secondary settings to those suited to younger learners. Another essential point is that classroom teachers must have a voice about what works and what does not work in practice.

Pokrivčáková (2008) summarizes features of a successful CLIL programme as follows:

- focus of ELT is on communication,
- the basis for a CLIL class is active listening,
- fluency is stimulated more than accuracy, however accuracy is important in pronunciation,
- teacher prefers open tasks in order to encourage learners,
- the CLIL programme is organized in order to meet all the learning styles and therefore activities are often changed,
- the CLIL programme brings real-life situations to the classroom

As for the methods, she advises that teachers choose such methodological approaches that enable acquiring content through the language (group and team work, use of authentic materials, pictures, games, etc.). Teaching blogs for CLIL teachers and practitioners deal with verified techniques with clear steps of how to involve them in the lesson (Rf. <https://www.fluentu.com/blog/educator/clil-teaching/>). Project work (discussed later in the text) belongs to one of them.

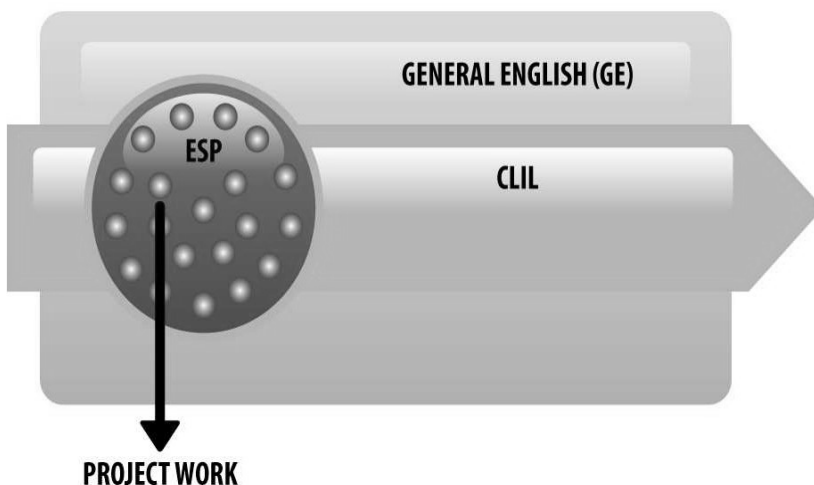
Škodová (2010) mentions that project work also holds a distinguished place in CLIL. Skills acquired through project work help students bridge school with the real world. Projects develop student autonomy, as well as working in groups with mixed ability. Thus they can show their talent and creativity. Project work can be organized from the contents of more subjects (like illustration, English language plus marketing, business

economy, law, ICT, etc.). Cross-curricular topics strengthen mutual cooperation and team work. However, project work should also include the final phase of result presentation.

## 2.6 CLIL and Project work

The previous chapters have proved that CLIL methodology offers opportunities to teach how to learn from many sources, to prepare for real life tasks, and to encourage learners to be adaptable to life's situations. Regarding the educational process, it supports work in groups and teams, melds several learning styles, and uses authentic materials with the aim to prepare learners for the lifelong learning process. It has also been mentioned, that modern trends in education lead to approaches that aim to gain knowledge more effectively, teaching students how to use this knowledge in real situations and how to become more autonomous in learning even beyond the school walls. Project work can be one of the possible ways of applying CLIL principles in ESP classes.

Picture 1 *Applying CLIL in ESP classes through projects*



### 2.6.1 Project work definition

Projects can be understood as a method, form, or strategy of teaching. The roots of the term trace back to the beginning of the 20<sup>th</sup> century, during a time when new innovative methods were introduced into the

teaching and learning process, with the aim to change the tradition of a teacher predominately being the only active element, and students passively acquiring given knowledge with further phases of memorizing, drilling, and reproducing. Projects, a natural outcome of a learner-centred approach, are the result of a learner's active participation in the learning process with the aim to learn, design, and present the project to the world. The focus is put mainly on practical experience and the direct activity of learners. A number of project supporters tried to connect the intellectual activity of a student with the manual one and thus develop the intellectual side of a personality with the emotional one (Ferriere, Kerchensteiner, Dewey, Kilpatrick, etc.).

Coming back to the statement given in the first paragraph on the characteristics of a project, we can see that in the field of pedagogy there have been several categorizations of what it really is. In recent papers, a project is taken as a complex method (Tomková 1998; Maňák 2003; Kratochvílová 2006) or an organizational form of education (Skalková 1995; Solfronk 1995). According to Kubínová (2002) it is a type of educational strategy. In our work, the term "project work" follows the principles of the learner-centred approach and content (CBL) and task-based learning (TBL). Therefore, it is mentioned as one of the instruments used in CLIL methodology in order to follow CLIL principles and beliefs.

Regardless of the project definition, there are three main features which should be followed:

- Learners' responsibility for self-learning;
- Learners' autonomy in gaining knowledge;
- Learners' effort put in goal achievement (product = project).

The basis for project work is a project as a purposefully organized summary of ideas focused on an important centre of practical knowledge aiming at a certain outcome (Žanta 1934). It is a clearly designed task which can be given to students as a task approaching a real activity, which emphasises its practical and utilitarian character of a project (Valenta 1993). Other authors (Skalková, Kožuchová et al. 1997) stressed the empirical side of project work – they are convinced that it will draw a natural interest out of students' cognition through contact with real life situations to which it is similar.

### **2.6.2 Project work in language classes**

As has previously been mentioned, project work comes out of the principles of content-based learning, within which the activities of the language classes are specific to the subject matter being taught and are geared towards stimulating students to think and learn through the use of a foreign language. Interest in project work and its integration into language classes stem from the work of Fird-Booth (1982, 1986), Legutke and Thiel (1983), and Haines (1989). Such an approach according to Stoller (1997) lends itself quite naturally to the integrated teaching of the four language skills. It employs authentic reading materials which require students not only understand information but to interpret and evaluate it as well. It provides a forum in which students can respond orally to reading and lecture materials. It recognizes that writing follows from listening and reading, and thus requires students to synthesize facts and ideas from multiple sources as preparation for writing. In this approach, students are exposed to study skills and develop a variety of language skills which prepare them for the range of academic tasks they will encounter.

Shepard (1995) claims that project work is particularly effective in ESP settings because it easily lends itself to:

- a) authentic language use,
- b) a focus on language at the discourse level rather than the sentence level,
- c) authentic tasks,
- d) learner centeredness.

These are all characteristics, not only in the context of ESP, but also of CLIL. Most importantly, project work leads to purposeful language use because it requires personal involvement on the part of the students: from the choice of project, to the way they will elaborate it, to the final part of presentation and evaluation. Apart from the language requirements, it also needs a certain amount of learner autonomy.

### **2.6.3 Incorporating project work into the classroom**

Project work, whether it is integrated into a content-based thematic unit or introduced as a special sequence of activities, requires multiple stages of development to succeed. Stoller (1997) proposes the following steps when incorporating project work.

- 1) *The students and a teacher agree on a theme for the project.*
- 2) *The students and a teacher determine the final outcome.* They consider the nature of the project, its objectives, and the most appropriate means to culminate the project (written report, poster, display, oral presentation, video, etc.).
- 3) *The students and a teacher structure the project.* They need to gather the proper information, find and select the verified sources of information, organize time management, and in case of team or group work, divide roles.
- 4) *The teacher prepares students for the language demands of information gathering.* According to the plan of information gathering, the teacher provides the students with supporting activities. If the students use the library to gather the materials, the teacher reviews the steps for finding resources and practice skimming and note-taking, etc.
- 5) *The students gather information.*
- 6) *A teacher prepares students for the language demands of compiling and analysing data.*
- 7) *The students compile and analyse information.*
- 8) *A teacher prepares students for the language demands of the culminating activity.* A teacher brings in language improvement activities to help students succeed with the presentation of their final products.
- 9) *The students present final product.*
- 10) *The students evaluate the project.* Students reflect on the experience, the language that they mastered to complete the project, the content that they learned about the topic.

By integrating project work within the CLIL classroom, learners develop language skills while simultaneously becoming more knowledgeable about the particular topic of the project. Teachers distance themselves from teacher-dominated positions and create vibrant learning environments that require active student involvement, stimulate higher level thinking skills, and give students responsibility for their own learning. These steps confirm all the principles of CLIL methodology.

Pokrivčáková (2009) identifies numerous factors in methodology that influence the effectiveness of foreign language learning. Some of them are: *“age, social and economical status, gender, ethnicity, psychological and physiological development, preferred cognitive and learning styles, psychosocial traits, mother language proficiency, existing level of proficiency in a foreign language, learner’s affective characteristic (such*

*as personal experiences, beliefs, opinions, attitudes, motivation to learn, anxiety level, attribution to success, feeling toward authority, tendencies toward cooperation or competition), cultural factors, and many others,” (Modern Teacher of English, p.23).*

In order to follow the objectives of this study, it is necessary to point out the specific features in teaching *adult learners* (i.e. age factor mentioned above) as they are the respondents of the research discussed further. According to Nicholls and Hoadley-Maidment (1988), they are specific in their needs and preferred learning styles and strategies. They usually know their reasons for learning and thus it can be beneficial for teachers in defining learner’s needs after discussing any expectations at the beginning of the course. As for language skills, adults are able to handle abstract rules and concepts about a foreign language (grammar structures, abstract vocabulary). They find real communication in a foreign language more difficult and are usually afraid of any failure. Mistakes block their willingness to speak and communicate in a foreign language. They “*appreciate learning connected with decision making (task-based learning, projects, cooperative learning). Adult learners feel more self-confident if they use their knowledge and experiences form outside the classroom,” (Pokrivčáková 2009, p.25-26).* Project work as one of many techniques within CLIL methodology covers learner-centeredness, decision making processes, and provides possibilities to interconnect knowledge with real-world experiences, and thus it is very suitable within ELT for adult learners.

## ESP (ENGLISH FOR SPECIFIC PURPOSES)

ESP is the term that has traditionally been used for courses which aim at teaching English language needed for specific situations, mainly related to academic or occupational contexts. Several works deal with the developments of this field. There have been different attempts for ESP classification. For example, among the very first one is “the tree of ELT” by Hutchinson & Waters (1993, p.17), depicting ESP as one of the branches of ELT.

The difference among various types of English for Specific Purposes lies in different specializations. Three main branches are created with English for Science and Technology, English for Business and Economics, and English for Social Sciences, however these branches divide further. The idea of picturing English language teaching as a tree enables us to see the relation between General English and ESP which are both represented as different categories of English language teaching as a second or foreign language (ESL, EFL), however with their common roots.

On the other hand, according to Dudley-Evans and St. John (1998, pp.8), the tree brings a problem as it does not show “*a base of different types of ESP*”. Therefore they suggest the whole system of ELT as a continuum which starts with clearly definable courses of General English up to specialized ones.

The main distinction of ESP is that the English taught caters to the needs of learners in specific disciplines other than the arts and languages (Raisanen, Fortanet-Gómez 2008). English for Specific Purposes: the focus of ESP is on terminology used in specific fields such as law, medicine, technology, finance, etc., “*While knowledge of the subject and its terminology is essential, it is important to remember that it is the usage of English language in a specific context which is being taught,*” [TEFL temp dot com] (n.d.).

In higher education, especially at non-philological education, ELT is covered by ESP courses. Hidden within ESP are many specialized branches such as Business English (BE), English for Academic Purposes (EAP), Technical English (TE), etc. English language preparation differs

mainly according to the school specialization, the amount of hours available for languages, as well as teacher and school possibilities (facilities, equipment, etc.).

Under our conditions and in this paper, English for Specific Purposes is used as an umbrella term for English language education offered at non-philological universities. It may take on a lot of forms due to various aims and contents. It plays a significant role at the tertiary level of education where students need to use their English for furthering their academic studies (Carver 1983; Widdowson 1982). According to Dudley (1997), ESP courses may be designed for a very specific discipline, e.g. medicine or mechanical engineering; which may use quite a different methodology than that used for teaching general English, e.g. tailor-made courses for the specific modalities most used within the targeted discipline.

### **3.1 Goals of ESP**

With the spread of the learner-centered approach, much attention has been paid to the design of ESP courses that can prepare students for professional communication. As a result, considerable focus has been given to the needs analysis in making a particular course serving a particular group's interests (Harrison, 1996; Hutchison & Waters, 1987). The aim of the course is to acquire professional vocabulary as well as to develop communicative competence with the focus on all four skills – reading, listening, speaking, and writing. Within communicative language teaching (CLT), as also seen in ESP courses, much attention has been paid to the content-based (CBL) and task-based approaches in learning (TBLL)<sup>2</sup>. Convergence of ESP with other disciplines is discussed in the book written by Stojković, Chmelíková, and Hurajová (2018). According to the authors regarding balancing content, linguistic issues when designing an ESP course are inevitable for ESP teachers undergoing relevant functional pedagogy and methodology. In the context of our study, ESP courses at the Slovak University in Agriculture in Nitra are discussed further.

### **3.2 CLIL and ESP**

This chapter focuses especially on the relation of CLIL with teaching ESP, in terms of principles, attitudes, and approaches. There are different views on the mutual interconnection between these two, but it is necessary

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<sup>2</sup> See 1.1



to say that, as shown in the previous chapters, it has been proved that CLIL methodology has its roots in ESP.

In the previous chapter, we focused on its beginnings and the definition of ESP as a branch of ELT. We came to the conclusion that ESP is not a product but an approach. We can further speak about the mutual relationship of CLIL methodology and ESP. Recent research on CLIL clearly establishes its relationship with ESP. Greere and Räsänen in a report on a LANQUA Sub-project on Content and Language Integrated Learning (2008) states that “*CLIL should be seen as a continuum of various pedagogical approaches which aim to facilitate learning*” (ibid, p.5); they define this continuum as consisting of 6 steps:

1. Non-CLIL: Non-concern for language learning, no pedagogical collaboration;
2. Discipline-based language teaching: language specialists providing discipline specific language teaching to support learning, no systematic collaboration with subject specialists;
3. Pre-CLIL (language): pre-sessional teaching of language to support students’ learning of the content, collaboration language-subject teacher, language learning outcomes specified according to content learning needs;
4. Pre-CLIL (content): language learning expected due to exposure, but outcomes not specified, implicit aims and criteria, rare collaboration of subject specialist with a language teacher;
5. Adjunct-CLIL: language support coordinated with or integrated in subject studies, which takes place simultaneously, joint planning between teachers and specified outcomes for both content and language;
6. CLIL: fully dual approach and full integration of language across subject teaching by a subject specialist or team teaching.

It is obvious that CLIL is a methodology concerning all languages, not only English, and ESP is closely related to English language teaching. It can be understood as a more specific category of language teaching and learning. In our work above the shift from teaching to learning in CLIL has been explained. CLIL and teaching ESP have common objectives, beliefs, principles, and approaches. The aim of both is to work on the communicative competence of learners, and by using the proper means, methods, and techniques, this aim will surely happen even in the most specific contexts. As for the oversimplification of language in CLIL, as is criticised by some teachers, we must add that ESP does not work with advanced learners only. Simplification of scientific language is necessary

in A2 and B1 levels (according to the CEFR) as well, and it does not mean that the content of the subject is poorer. It has been mentioned that ESP prepares students for the real world by developing their language skills with learning how to write, for example, reports, presentations, or proposals; this would not be in contrast with CLIL methodology.

On the contrary, teaching methods motivating students to use the language in the given context are highly recommended by CLIL methodology. Case studies, PowerPoint Presentations, role plays, projects, etc., are all widely used in CLIL classes. They also support learners' autonomy. It is necessary to say that further trends in learning languages suggest the growing tendency to form an autonomous learner out of the learner. As Holúbeková (2004) states, it is necessary to realize that only a small percentage of learners are autonomous. Therefore, the role of the teacher is also to help students on their way to autonomy, i.e. the focus is put on *how* to learn rather than *what*. And these principles are common for ESP as well as CLIL. We may state that the main difference between ESP and CLIL is that the main focus of a CLIL lesson is put on the content whereas an ESP lesson highlights the language. Thus, CLIL lessons are mainly taught by content teachers whereas ESP lessons are instructed by language teachers.

Garrido and Fortanet-Gómez (2009, p.179) characterize the relation between ESP and CLIL as follows:

*'However, the relationship between ESP and CLIL is not something new, since already in 1997 well-known literature supported the link between ESP (or EAP, English for Academic Purposes) and CBI (Content-based Instruction), for many a predecessor (Soetaert and Bonamie, 2008), or a synonym of CLIL (Dalton-Puffer and Smit, 2007): English for Specific Purposes (ESP) and advanced disciplinary English for Academic Purposes (EAP) contexts provide additional support for advanced level CBI (Content Based Instruction) programs (Grabe and Stoller 1997). Some other studies have also pointed out the link between ESP and CLIL (Mahbudi 2000; Huan and Normandia 2007; Fortanet-Gómez and Raisänen, 2008). There are researchers who even state that "content and language integrated learning (CLIL) has greatly influenced the teaching of ESP as it incorporates meaningful authentic language processing".'*

It is seen that many researchers and scientists admit the relationship between CLIL and teaching ESP even though no one claims that one has developed from the other. There are some principles which are common for both and make them overlap in a way. According to Jendrych and Wisniewska (2010) from Kozminski University in Poland, one of the main assumptions of teaching ESP is that the teaching materials should enable

learners to acquire the variety of language and skills they will need in typical situations they meet in their professional life. There are specific vocabulary and language situations which are likely to appear and therefore ESP teachers integrate content with language teaching. They find themselves teaching not only the language skills but also professional skills. That is why teaching ESP is considered to be CLIL.

CLIL potentialities have been summarized as four essential principles: content, communication, cognition, and culture. Their combination makes CLIL a very powerful tool to learn languages and subjects, proposed by European authorities as one of the best strategies to encourage language learning. The interconnection between all these elements demands a focus on methodology, on how subjects are taught and learnt through a foreign language. From this perspective the development of the cognitive dimension in language learning is the real challenge of CLIL (Coyle 2002).

Teaching ESP and CLIL are both based on the Learner-Centred Approach and follow the principles of Content-Based Language Learning (CBLL) and Task-Based Learning (TBL), discussed in Chapter 1.

ESP in this study represents the context in which English and the matters of professional subjects are learnt and taught on B1 level according to the CEFR. The chosen communicative competences (see 2.3) on B1 level are thus transformed into the professional field of the language.

### **3.3 The Current State of Affairs**

In the previous part we discussed the theoretical terms and their relationship to our thesis and research. This chapter introduces some of the studies and surveys published in connection with ESP, CLIL, or project work. All of them are aimed at learning or teaching English.

#### **3.3.1 CLIL implementation in Secondary Vocational Schools**

CLIL relates to any educational situation where content and language are integrated. Today, there is a tendency to integrate the second language with the content with the aim to provide learners with professional/specific language, as well as a more professional character to the language depending on the school specialization which they attend. This approach in language education is effective mainly in professional education. CLIL implementation in primary schools has been discussed in the chapter about CLIL. As has already been mentioned, a few secondary vocational

schools, mainly with economic specializations, experience CLIL as well (namely Business Academy in Hlohovec, Trnava, Topoľčany, two in the Bratislava region, and a Private Business Academy in Žiar nad Hronom).

Škodová (2010) describes the research on implementation of CLIL into the educational process carried out in the years 2006-2008. The aim of the study was to implement integration of a foreign language (in this case it was English) in the content of professional subjects (economic specialization). The research question was: What are the possibilities to apply integrated language education in the professional subjects in secondary vocational schools? The authors of the project used the following methods: experiment, observation, interviews, questionnaires, and discussions. The experiment consisted of an increased number of CLIL classes within the curriculum of the experimental group compared to the control group taught in a traditional way (non-CLIL). Afterwards in 2008, the authors evaluated the expectations of the students of the experimental group. The majority of students provided positive feedback. The research was enriched with questionnaires sent to all the secondary schools with business specialization with the aim to find out whether the educational institutions were interested in CLIL implementation into the curriculum. Again, the hypothesis was proved to be positive. Apart from some problems, mainly the lack of teachers competent in teaching the professional subjects with an adequate foreign language competence, CLIL implementation within secondary vocational schools has proved to be an effective tool to follow new trends and approaches in education.

### **3.3.2 CLIL in Higher Education**

As for CLIL research Pokrivčáková (2012) recognizes five main directions such as:

- a) Learner-based CLIL research,
- b) Teacher-based CLIL research,
- c) Language-based CLIL research,
- d) Content-based CLIL research,
- e) Context-based CLIL research.

As for this study, the research is learner-based and also content-based, and the outcomes can be added to the context-based CLIL research from the Slovak situation in higher education.

In the case of higher education, the current state of affairs is much more heterogeneous, since generally speaking CLIL “has not yet been

widely adopted” (Coleman 2006, p.5). In addition, there is no single comprehensive, centralized, or institutional survey of CLIL at this level (as there is for primary and secondary education, see *Content and Language Integrated Learning at School in Europe*, Eurydice 2006) that summarizes where, how, and who is implementing this approach across Europe. According to Coleman (2006), two lengthy studies throw light on the real situation of English medium teaching in European higher education. One is a quantitative study conducted by the “Academic Cooperation Association Survey in 2001/2002”, which includes data from over 1500 higher education institutions involved in Socrates-Erasmus programmes in 19 countries where English is not a native language. By and large, this study reveals that English-medium teaching in Europe is a recent phenomenon, which dates back to around 1998. These are mainly courses in engineering and business studies, especially at the postgraduate level.

Another pan-European study was conducted in 1999/2000 (Dafouz et al. 2009). This study analysed twenty-two European countries and offered data, such as types and numbers of programmes, and student enrolment, start dates, rationales, etc. The Netherlands and Finland, followed by Germany, ranked the highest in number of higher education institutions with English-taught programmes. Our personal experience from CLIL in higher education in Netherlands is described further.

Over the last decade, there has been an enormous change in the presence of English as the language of instruction in Europe. As Dafouz et al. (ibid.) mentions, in addition to some general questionnaires, a more specific survey which included interviews was conducted among teachers involved in pilot courses with international students. Teachers complained about the lower level of their language competence. They regard speaking as the weakest skill. As regards to the students’ responses (n=85), the situation was more heterogeneous than with teachers, since there were instances of ‘semi-CLIL’ experiences or ESP courses with a considerable amount of subject content presented through English. The students enrolled on these courses believed that they had made substantial improvement in the areas of subject-specific vocabulary, pronunciation, and listening. By contrast, grammatical development was perceived as the least improved area, however, according to CLIL principles, emphasis is placed on fluency and language skills rather than grammatical accuracy. Informally, students responded that a content class taught through English was more useful in the long run, but at the same time, more demanding and stressful, since the level of concentration required is higher.

Dafouz et al. (2009) initiated a pilot study in 2006 which focused on

the different attitudes that teachers and students in the *Universidad Complutense de Madrid* and *Universidad Politécnica* (Spain) have towards the potential implementation of a CLIL approach in their respective settings. The data summarise the responses obtained from two questionnaires distributed among teachers and students from the disciplines of Chemistry, Aeronautical Engineering, and Health Sciences (Pharmacy and Medicine). Regarding teachers' responses (n=70) to methodological adjustments in a CLIL context, three main changes were considered essential: adaptation of material, slowing down of classroom rhythm, and a slight reduction of content. Secondly, most teachers believed that teaching through English would necessarily entail a slowing down of rhythm and, consequently, a slight reduction of content, more repetition of main ideas, and a slower speech rate to facilitate comprehension. Thirdly, the questionnaires disclosed that most teachers did not feel that there should be significant modifications in evaluation style under a CLIL approach. Since the examination format is mostly written and based on problem-solving tests with very little foreign language used, teachers generally manifested their belief that exams would basically imply "translation of specific vocabulary into English". This belief undoubtedly suggests the need for further investigation into the assessment methods used.

As Coyle (2007) observes, there is no cohesion as far as CLIL pedagogies are concerned. In fact, methodologies, materials, and curriculum organisation vary across countries. At the tertiary level, CLIL needs to be different from CLIL models of primary and secondary education. Specifically, teachers' practices and competences should be redefined to the linguistic, academic, and professional demands that university students bring with them.

As for project-based second and foreign language education, we would like to mention the following studies conducted in higher educational institutions.

Gu (2002) reports on a successful 12-week project that teachers organized at Suzhou University in China. Twenty Chinese students were paired with 28 American students at the Southern Polytechnic State University of Georgia. The Chinese students were doing projects about a Chinese clothes exhibition and marketing strategies. The author finds that project-based learning enhanced Chinese EFL learners' motivation, improved their performance in writing and communication, and initiated their active roles in learning.

Fang and Warschauer (2004) report on a 5-year study conducted at the same university. They found that Chinese students interacted far more

often in project-based learning than they would have in other EFL courses, they had more autonomy in their learning, and they perceived that the learning process was more relevant to their lives.

Kemaloğlu (2010) reported the results of his study carried out at a Turkish University. The study was conducted to investigate students' and teachers' assessments on project work in the intensive English classes. One hundred students were involved, fifty from the upper-intermediate level (B2) and fifty from the intermediate level (B1) as well as four teachers who supervised students' projects. Evaluations of the participants' views about project work were explored with respect to the achievement of institutional goals, learning gains, and problems (accompanied with suggested solutions). The following instruments were used: project analysis, questionnaires, and interviews. The findings of the study have revealed that the goals of the project work in the research setting were generally perceived to have been moderately achieved, signalling the existence of some learning gains and problems within the context of project work. It has also highlighted some major aspects for a sample of project work experience in an EFL context, namely goals and problems. The author also admits that there are only a few studies conducted on project work. Therefore, his study may prove useful in guiding other project work practices. This may set the grounds for more effective implementations of project work.

Martín de Lama (2015) carried out a case study on university students and their opinions on CLIL implementation. The students were on their master's degree at a Spanish university with the aim to investigate improvement of content understanding, progressive reasoning, use of cognitive scaffolding techniques, exploitation of effective questioning, opportunities for revision, and consolidation questioning. Thus, the terms basic interpersonal communication skills (BICS) and cognitive academic language proficiency skills (CALPS) were compared and the improvement discussed. The positive outcomes were shown not only in the improvement of the aforementioned language items but also in the use of foreign language scaffolding techniques and increase in students' talking time, and also progress in reasoning and critical thinking strategies enhancement. As for the process in the use of scaffolding techniques the author advises "*visual aids – images, photographs, non-verbal language, language modelling, dialogues, contextualization, graphic organizers or questioning, among others*" (Ibid. p.32). All these aspects were taken into consideration when planning the project work in the study herein.

As discussed previously, project work has been reported to assist students in learning language, content, and skills simultaneously,

increasing student motivation and learner autonomy. However, the same researchers have also pointed out some constraints. Coming out of the findings of the surveys, some students revealed discomfort with learner control and responsibility. Also many teachers and faculty members felt uncomfortable to lose teacher control in student-centered learning.

Unfortunately, no studies and surveys conducted on CLIL implementation through project work in higher education in Slovakia have been published yet. This was one of the reasons for carrying out our research.

### **3.3.3 ESP in higher education in Holland**

As has already been mentioned, Holland is one of the most progressive countries in regard to using CLIL, with the longest tradition also<sup>3</sup>. Due to our research this chapter describes the author's personal experience with the aim to focus on ESP classes in Dronten, Holland, taught through the means of CLIL methodology. The second part follows with ESP classes in the University of Wageningen. Both of them are non-philological universities comparable in specialization to the Slovak University of Agriculture in Nitra, Slovakia, where the research mentioned in the empirical part was conducted. It cannot be omitted that the ESP model in Holland served as an initiative for our research.

Within the Leonardo programme, in March 2010 the author visited Dronten University of Applied Sciences in Holland (CAH), and then in April 2011 attended the University of Wageningen with the aim to monitor English language teaching, especially courses of English for Specific Purposes. Thus, there was an opportunity to compare ESP classes at the Slovak Agricultural University in Nitra with the Dutch ones. First of all, the schooling institution will be characterized, altogether with specializations focusing on the content and procedures of ESP classes.

CAH Dronten University of Applied Sciences (CAH DUAS) is a member of the association of professional agricultural universities. About 1300 students specialize in the programmes of Business Administration and Agribusiness, Rural Development, Management of Animal Breeding, Horticulture, etc., with the focus on international agriculture as well.

International programmes are also very diverse. Approximately 200 students come from European countries, as well as from the USA, Canada, Asia, and Africa. English programmes provide knowledge in the fields of management, agribusiness, European studies, as well as biotechnologies,

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<sup>3</sup> see 3.2 CLIL in Europe



horticulture, and animal production. Study is enriched with the cooperation of business and research universities in Europe and the USA. Practice is one of the main concepts Dronten CAH uses, the educational model being based on competence (Competency Based Education). Students learn how to develop products, for example, developing a plan for tulip export, carry out an audit in food safety, or writing a plan for rural development in the Italian mountains. The basis for cooperation are the contacts within the private as well as the state sectors. Notable professors from external organizations host lectures, participate in student evaluations, or master the modules.

CAH DUAS also helps the students to run their own business while studying. On a school farm they can try management skills where they focus on pig, sheep, or poultry breeding management. The farm also covers the business of milk production and the sale of fruit and vegetables. Greenhouses are placed on the school premises and students are responsible for their complete running, from product selection up to sales and marketing.

As has previously been mentioned, Holland and Finland are the two countries teaching with CLIL implementation. In Holland there is a long tradition of language education. Students of all programmes take English with the aim to work on their communication competence. English teachers use different ways of integrating professional topics with real life practice. To illustrate, on the topic of plant production, students got an assignment to work on a project of annual fruit tree care. The students worked in groups of three to five, with each member being responsible for scheduling and financial planning: from the purchase of trees, through tree care, which not only includes watering, but also pruning, fertilizing, and spraying against bugs, and eventually providing a target group of customers. The project is set in a place known to the students. The whole project is presented in English and thus the students not only improve their communication competence but also apply knowledge from other professional subjects (in this case: management of fruit production, marketing, the fruit industry, etc.).

Such a project has a cross-curricular and interdisciplinary character, and also calls for the cooperation of a language teacher and an expert or teacher of professional subjects. It may be developed into a long-term project which would be enriched with problem solving tasks such as financial crises, decreasing apple price on the market, etc., with the aim to apply theoretical knowledge in real situations.

The task of a teacher in a pre-teaching phase is to present new vocabulary or to warm students up with a text on a similar issue, set the

rules, monitor, and in the occurrence of a problem, they take over in their role of a facilitator and adviser. Students work in groups and manage their work on their own. They use different sources, including the Internet, interviews, or studies. In the presentation phase it is necessary for the whole group to feel responsibility for the result of their work, and feedback is the evaluation of the teacher as well as the discussion led by student peers.

As for the organization of the classes, students have two contact classes per week. The materials they use are provided by the school, and this changes often due to keeping information up-to-date and also the level of the students. Even though the students had been learning English since Elementary School, their communicative competence has reached the levels A2 and B1, which is comparable with the respondents of our research.

Another university with a similar specialization to SUA in Nitra and CAH in Dronten, is Wageningen University in Holland, attended in April 2011 through the LUZK programme<sup>4</sup>. The aim of the field research was to monitor and compare ESP classes, and their use of innovative methods and techniques.

Wageningen University offers scientific education. Students get the opportunity to combine the exact sciences – from plant sciences to food technology and health, with the social sciences – from environmental studies to economics and sociology. It offers a broad range of studies and courses focusing on the domain ‘healthy food and living environment’. Students are stimulated to combine the natural and social sciences; from plant sciences to economics and from food ingredients technology to sociology. This multidisciplinary approach helps students to build bridges and to apply their specialized knowledge to other subjects.

The language centre covers the language education at all three levels – bachelor, master’s and doctoral, as well as language classes for employees and school managers. The university is known for its long-standing tradition of providing international programmes, a lot of them instructed in English. Therefore not only students, but teachers too, are challenged to work on the development of their language competence.

ESP classes in Wageningen were very similar to those in Dronten. Teachers focus on improving presentation techniques, communication skills, writing academic papers, as well as testing language competences. They use different techniques and methods such as brainstorming, mind

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<sup>4</sup> LUZK – is a project realized at SUA in Nitra on the education of employees, co-financed from the operational programme Education: Human Resource Development and Quality Assurance at SAU, Nitra

maps, project work, role-play, and simulation games in order to bridge to the school with the practice. In short, CLIL principles were observed, however the teachers and learners did not realize they had applied CLIL in the educational process.

To sum up, ESP classes at Dronten and Wageningen were very inspiring and further discussions in person or via mails with the teachers of English from Dronten (Prof. T. Medema, Dr. Wieke Hetsen, Dr. Brian Thompson, and Dr. Sophie Rebel, March – July 2010) and Wageningen (Dr. Irene Jansen) served as further stimuli to apply CLIL approaches at the Slovak University of Agriculture Nitra, particularly through project work. Due to the fact that the specializations and fields of study at the universities in Holland are very similar to the Slovak University of Agriculture in Nitra, innovations in ESP classes seemed to be applicable to our situation and educational context.



## RESEARCH PART

Methodology of research distinguishes two basic designs: quantitative and qualitative. They are a dichotomy in which various techniques are involved (Pokrivčáková et al. 2012). As for which type this current research is, the combination of both qualitative and quantitative strategies has crystallized as a perspective. CLIL is a growing field in language teaching which basically means that the focus for courses is simultaneously content and language. The role of the language is to be the medium to convey the content. As Hutchinson and Waters (1987) conclude, the relevance of the English course to the needs of the learners will make learning better and faster. Therefore it is clear that a needs analysis has become one of the basic characteristics of the ESP courses. According to Bloor (1986), teaching any variety of ESP can start at any age level, since a common core of language would not exist. The ‘core’ is an integrated part of any language ‘variety’. Thus, learners acquire language in context. Hutchinson and Waters (1987) called for a “learner-centered approach”. For them, teaching learning-centered ESP courses meant that they had to mainly consider the needs of learners. Hutchinson and Waters (1987) claim that there is nothing specific about the ESP methodology; neither is ESP actually a methodology itself. Of the same opinion was Robinson (1991). On the contrary, Dudley-Evans and St. John’s opinion was that ESP may use, in specific teaching situations, a different methodology from that of general English (1998). These authors were convinced that “ESP makes use of the underlying methodology and the discipline it serves.” Hutchinson and Waters (1987) suggest using a range of skills, which will greatly increase the range of activities possible in the classroom, increasing reinforcement, and maintain the learner’s interest. Moreover they state that “*it is impossible to deal adequately with methodology in a book. It has to be experienced in the classroom,*” (p.142). Content and language integrated learning introduces a broader view on ESP methodology by not focusing mainly on language analysis (e.g. text, genre, and discourse analysis), needs analysis, course design, material design, and the teacher’s role, etc. The relationship of ESP and CLIL has

been discussed in the theoretical part where CLIL represents a pragmatic solution, offering the benefit of learning both the language and the non-language subject matter (Marsh 2003). However, according to Veselá (2012) the approval of CLIL as a methodology for foreign language teaching and learning is not satisfactory as further research is needed. Thus, the results of the following research may contribute towards answering these questions on the implementation of CLIL methodology within English language teaching and learning at the higher level of education.

## **4.1 Research objectives, questions and hypotheses**

The research conducted as part of this thesis studied using projects in ESP classes. In order to succeed the following primary and secondary (complementary) research aims were defined:

### **The main research aim:**

The main research objective is to observe how implementation of CLIL methodology through project work affects ESP classes in the Slovak University of Agriculture in Nitra, Slovakia.

### **The secondary research aims:**

1. To find out how application of CLIL in ESP classes affects learner's knowledge of professional vocabulary (CALP),
2. To find out how application of CLIL in ESP influences the acquisition of chosen grammar structures referring to B1 level according to the CEFR (BICS),
3. To find out how application of CLIL in ESP influences learners' writing skills, particularly used vocabulary, style and structure of writing,
4. To find out how application of CLIL in ESP affects students' reading comprehension of specific texts,
5. To find out students' opinions and attitudes to CLIL implementation in ESP classes.

### **Research questions**

1. How does professional vocabulary within chosen specific topics of CLIL students differ from that of non-CLIL students in its quantity

- and quality (referring to Coxhead classification of specific vocabulary)?
2. How does CLIL influence acquired chosen grammar structures referring to the B1 level according to the CEFR in CLIL compared to non-CLIL classes?
  3. How does CLIL influence reading comprehension (particularly comprehension of specific texts within the chosen topics regarding B1 level according to the CEFR) in CLIL classes compared to non-CLIL classes?
  4. How does CLIL influence writing skills referring to B1 level according to the CEFR in CLIL classes compared to non-CLIL classes?

## **Hypotheses**

The following hypotheses have been formulated:

1. CLIL students will demonstrate better knowledge of professional vocabulary, both in its quantity and quality, compared to students of non-CLIL classes.
2. No significant difference is expected in the increase of acquired grammar structures in CLIL and non-CLIL classes.
3. The use of CLIL influences the reading comprehension of specific texts within chosen topics.
4. CLIL students will demonstrate better usage of writing skills (referring to B1 level according to the CEFR), compared to students of non-CLIL classes.

## **4.2 Setting and Respondents**

As for the setting of our design-based research, the courses of ESP classes provided at the Slovak University of Agriculture in Nitra (SUA), Slovakia, were chosen. The reason for choosing this university was its long-standing tradition in ESP classes, its international cooperation with the universities in Slovakia and abroad, and its great variety of specializations and programmes in the area of applied sciences. The research was conducted after agreement with higher authorities at the university who allowed the research. The research followed the principles of ethics. Participants were informed prior to the research, agreed on their participation on a voluntary basis with the right to withdraw at any time. A copy of the report was available to all participants. The researcher declares to withhold the names or other identifying characteristic.

ESP at SUA focuses on the development of communicative competence and it is guided by the Department of Professional Language Education<sup>6</sup>. Among other activities, it covers all the ESP classes of the following faculties: Faculty of Horticulture and Landscape Engineering, Faculty of Agrobiology and Food Resources, Faculty of Biotechnology, and Faculty of Engineering at SAU. Business English has been taught at the Faculty of Economics and Management and at the Faculty of European Studies and Regional Development. The aim of our research was to find out the answers to the research questions in ESP courses, but apart from those where Business English is taught. The current situation of the language classes is as follows:

- the level of the classes varies from A2 to B1 (according to the CEFR),
- the material used in the class is a textbook (Holúbeková et al. 2008) with adjusted professional texts on various topics chosen by the team of author teachers of the Department of Foreign Languages. The textbook is updated once every two- to three-year time span,
- a grammar section, writing and speaking activities are included in the textbook,
- there are two contact classes per week, i.e. approximately 28 per term,
- at the time when the research was carried out, no additional computer-based materials or Moodle courses were included in the syllabus,
- ESP teachers use different methods with the aim to enhance communicative competence and acquisition of professional vocabulary,
- students are tested at the end of the term (the test covers both professional vocabulary and grammar exercises from the textbook),
- final evaluation depends on the test results.

The groups of students in the ESP classes at SUA voluntarily became the respondents in the research. ESP classes at SUA are not compulsory; however, the students are obliged to take two terms of language classes of their own choice within their three-year bachelor study. Every year, three to five ESP groups are formed with around 25 students involved. In our research all the ESP classes were included and therefore, a *convenient sampling* was formed (Maňák et al. 2005). This means that our research was conducted with all the students attending ESP classes in the academic



year 2010/2011 (the winter term). The respondents' voluntary participation, the nature and purpose of the study, the nature of participation in the study, the right to withdraw at any stage during the study, participant anonymity, and confidentiality of data were all explained in the introductory class. The students were active in the following specializations:

**Technical Faculty:** Agricultural Technologies and Commerce Activities, Operation of Transport and Manipulation Machinery, Management of Quality Production, Technologies for Renewable Sources of Energy, Hippology, Security of Operational Technology.

**Horticulture and Landscape Engineering Faculty:** Horticulture, Garden Architecture, Biotechnologies of Parks, Urban Agriculture.

**The Faculty of Biotechnology and Food Sciences:** Agro-Food Science, Applied Biology, Food Technology, Biotechnologies, Food of Plant Origin, Food of Animal Origin.

**The Faculty of Agrobiology and Food Resources:** Management of Plant Production, Management of Animal Production, Nutrition, Special Breeding, Hippology, General Agriculture, Sustainable Agriculture and Country Development.

In this research the respondents were divided into the CLIL and non-CLIL groups. As a convenient sample they were grouped according to their schedule. The non-CLIL group with 23 students in ESP classes followed the textbook written and published for the purposes of ESP classes at SUA in Nitra. The CLIL groups with 81 students, covered the same topics as those offered by the textbook, however, they used the principles of project-based education within CLIL methodology.

The students in the CLIL groups were advised to choose the topic for their project based on their study branch. The aim was to work in a foreign language within their specializations and fields of interests and thus deepen their professional and specific vocabulary and development of autonomous learning.

### 4.3 Methodology of Research

With respect to the aims of the study a **design-based research** method was chosen consisting of qualitative and quantitative methods. The reasons to do so are as follows:

- Design-based research is grounded in both theory and real-world context,
- the goals of design-based research solve current real-world problems by designing and enacting interventions as well as

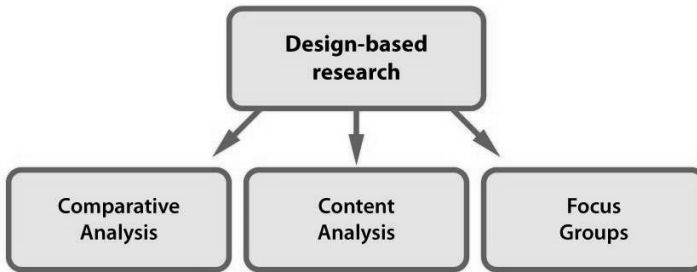
- extending theories and refining design principles,
- design-based research is interactive, integrative, and flexible;
- design-based research is integrative because researchers need to integrate a variety of research methods and approaches from both qualitative and quantitative research paradigms, depending on the needs of the research (Wang & Hannafin 2005).

In the case of this study the design-based research consists of the three techniques. The **comparative analysis** was carried out in order to set the common initial level of proficiency in the language at the beginning of the term, before the ESP course started. For this purpose, a standardized test was used and the results provided the basis for the language proficiency level. After the course, all students involved in the study were tested in order to evaluate and compare the outcomes of CLIL and non-CLIL groups. The **content analysis** as a qualitative research method examined students' projects from the point of view of the used professional vocabulary based on the Coxhead classification. The **focus group meetings** as a qualitative method provided the findings of the students' opinions and attitudes towards the application of CLIL methodology within ESP classes.

### 4.3.1 Triangulation

According to Flick (2009) triangulation as a keyword is used to name the combination of different methods and different theoretical perspectives in dealing with a phenomenon. It can be used to describe and formulate the relationship between qualitative and quantitative research. Triangulation of several methods may lead to three types of results: convergent, complementary, or contradictory results. It becomes fruitful as a strategy for a more comprehensive understanding and represents a challenge to look for greater and better explanations. In this case, the phenomenon is teaching and learning ESP with the help of CLIL methodology. Three techniques were involved within our design-based research (see Picture 2) with the aim to find out and prove the effectiveness of the use of CLIL in ESP classes. Thus, linking different qualitative, or qualitative and quantitative methods (Kelle and Erzberger 2004), becomes essential. Triangulation goes beyond the limitations of a single method by combining several methods and giving them equal relevance, providing complementary results and explanations.

*Picture 2 Triangulation of research methods*



The triangulation of the three techniques gives the holistic view on the use of CLIL in ESP classes in higher education. The results of the diagnostic tests within the comparative analyses show the differences in the chosen language competences reached in CLIL and non-CLIL groups. The content analyses focus on the quality and amount of the specific vocabulary within the chosen topics used in the student projects in the CLIL group. In the focus group meetings students expressed their attitudes and opinions on project work used on the ESP course. The interpretation of the results contributes towards the answer of the main question of the study of whether CLIL methodology contributes towards the modernization of ELT.

#### **4.3.2 Comparative analysis of communicative competences of CLIL and non-CLIL groups**

With respect to the aims of our study it was necessary to compare achievements of CLIL and non-CLIL groups. The techniques of two diagnostic tests were used, results of which were compared afterwards. For Cohen et al. (2010), in tests, researchers have at their disposal a powerful method of data collection, an impressive array of tests for gathering data of a numerical rather than verbal kind. In considering testing for gathering research data, several issues need to be borne in mind,

- what is tested,
- whether dealing with parametric or non-parametric tests,
- whether tests are available commercially or they are home-produced tests,
- whether the test scores are derived from a pre-test and post-test.

As for the test preparation and evaluation, a lot of criteria must be considered, therefore the following part will describe the test qualities.

## **Test Qualities**

For Cohen, tests must be valid and reliable. Reliability covers the degree of confidence that can be placed in the results and the data, which is often a matter of statistical calculation and subsequent test redesigning. Validity, on the other hand, concerns the extent to which the test tests what it is supposed to test. This revolves around content, construct, face, and criterion-related validity (Cohen p.433).

Ethical issues in preparing for tests must not be forgotten. According to Cronbach (1970), Hanna (1993) and Cunningham (1998) the following views should be followed:

- tests must be valid and reliable,
- the administration, marking, and use of the test should be undertaken only by competent and qualified people,
- tests should be released only to suitably qualified professionals in connection with specific professionally acceptable projects,
- tests should benefit the testee,
- clear marking and grading protocols should exist,
- tests results are reported only in a way that cannot be misinterpreted,
- the privacy and dignity of individuals should be respected (e.g. confidentiality, anonymity, non-traceability),
- individuals should not be harmed by the test or its results,
- informed consent to participate in the test should be sought.

One should consider also the fact that test preparation can take many forms. Mehrens and Kaminski (1989) summarize them as follows. Some researchers and teachers try:

- to ensure coverage, among other programme contents and objectives, of the objectives and programme that will be tested,
- to restrict the coverage of the programme content and objectives to only those that will be tested,
- to prepare students with 'exam techniques',
- to practise with past or similar papers,
- directly match the teaching to specific test items,
- to practise on an exactly parallel form of the test,
- to tell students in advance what will appear on the test.

However, it is questionable whether these are not in risk of correlation between what is at stake and the degree of unethical practice, i.e. giving some students an unfair advantage over others. To overcome such problems Cunningham (1994) suggests that it is ethical and legitimate for teachers to teach to a broader domain than the test, that teachers should not teach directly to the test, and the situation should only be that better instruction rather than test preparation is acceptable.

With the aim to get both CLIL and non-CLIL groups coherent it was necessary to diagnose the initial level of the groups involved. Therefore, the objective of diagnostic test 1 was to find out whether the students achieved A2 level according to the CEFR. From the point of view of the subject of testing, our focus was put on communicative competences in CLIL and non-CLIL groups. As for the accuracy of the research, it was obvious that we, first of all, find out the initial level of the language proficiency. Therefore, the commercially produced parametric test developed by UCLES and published by Oxford University Press (2001) was used (see Appendices). The aim was to set the ground for the approximate level of the language knowledge.

Due to the fact that there was no available standardized test designed for the measurements of achievements in ESP classes at SUA in Nitra, diagnostic test 2, alternatively, was a ‘research-produced test’ (Cohen et al. 2007) designed for the purpose of testing the achievements of the students in non-CLIL groups as it covered the vocabulary, grammar, and writing from the used textbook. Diagnostic test 2 was designed based on the principles provided in the electronic textbook of pedagogical research (Gavora et al. 2010). The format of the test was identical to diagnostic test 1, with the testing competences such as reading, writing, vocabulary, and grammar, as well as the number of questions. At the stage of scoring and evaluation, the number of points was also the same as in test 1. In an effort to enhance reliability, diagnostic test 2 was piloted on two groups prior to the commencement of the research; and it was found that it was necessary to improve the instruction of two questions. The validity of the test, called “expert validity” (Cohen et al. 2010), was proven by a group of experts, it being one measurement validity type of testing instrument. In this case, it was a team of English teachers at the Department of Professional Language Development who undertake teaching ESP classes at SUA in Nitra, and moreover they are the authors of the textbook at the same time (Holúbeková et al. 2010).

Due to the fact that the same topics were covered in both the CLIL and non-CLIL groups, with the only difference being the use of the textbook or not, diagnostic test 2 was also distributed in the CLIL groups with the aim

to find out the achievements in the chosen language skills. The results of diagnostic test 1 at the beginning of the research showed that all the respondents but three created a coherent group referring to their English language proficiency as they all reached A2 level according to the CEFR. After the test assessment three students were asked to leave the group (specifically the non-CLIL group) due to their lower level of proficiency in English (A1). The results of diagnostic test 2 showed that the score of the CLIL group was lower in the chosen language skills, however not significantly in comparison with the non-CLIL group.

### 4.3.3 Content Analysis

As stated by Maňák et al. (2005), a content analysis is used in educational research in order to explore the written or visual materials (curricular documents, educational programmes, documentation, written projects, etc.). According to Strauss and Corbinová (1999) the obtained data can be analysed quantitatively (for example by number of words or topics per document) as well as qualitatively (comprehensiveness, value orientations, emotional charge). Flick (2009) states that content analysis is one of the standard procedures used for analysing textual material by using categories which are often derived from theoretical models: categories are brought to the empirical material and they are repeatedly assessed against it and modified if necessary. In our research the projects were analyzed (in written forms) with respect to the topic and content within the specific language. The vocabulary in the students' projects was examined from the point of view of the *specificity* (how specific the word is), and *purposefulness* (whether it is in the proper context of the particular topic).

Content analysis was used to compare the quality and quantity of the gained specific vocabulary in CLIL groups compared with the non-CLIL groups. By analyzing the projects presented by the students we were able to find and evaluate the vocabulary within different topics. Afterwards, the vocabulary was compared with the vocabulary used in a textbook (used in non-CLIL groups). First of all, it was necessary to outline the term "specific vocabulary". With the help of the research carried out by Coxhead (Gillet 2013), where words are ranked into word families in their specific fields, such as *Criminal Law*, *Environmental Science*, *Business*, *Health Science*, *Computer Science*, *Technology*, or *Music*. The words from the projects were classified according to Coxhead classification. Coxhead studied over 3.5 million words of academic text from 28 subject areas and identified another 570 word families that were commonly used in academic texts from all subjects. In this study, academic vocabulary is

recognized as a more general field of specific vocabulary within a chosen topic, and therefore it was possible to use this classification system for the purpose of the research.

In the second stage, all specific words defined within certain topics were recorded. In some cases students themselves prepared the list of words they had considered as new vocabulary for their peers. The list of all the specific words from the projects was then compared with the list of vocabulary given in the book *English for Specific Purposes in Agriculture (Pre-Intermediate level)* (Holúbeková et al. 2010) used in the non-CLIL groups under the same topics. Thus, the answer for the question whether and how CLIL methodology influences the increase in the specific vocabulary could be reached.

The students were offered help from the side of the teacher, either with the choice of the topic or the project preparation, and in terms of some difficulties with pronunciation or vocabulary. Only four students sought this help with the the teacher regarding the project. This fact can be connected to the results of the focus group meeting where the students confessed that as Slovak students, even in higher education, they are not used to viewing teachers as advisors, helpers, or partners.

After the performance of their project, the presenter discussed the topic with their peers. The presenting student handed in an evaluation sheet with their answers regarding the time and effort put into the project's preparation, also with the confession of the attractiveness of project-based education in the language classes in the higher education.

Regarding the format of the projects, all but one was performed as a PowerPoint presentation. The other presentation was a hand-drawn poster with a garden design orally presented by a pair of students. The results of the project analyses are discussed further.

#### **4.3.4 Focus Group**

The main purpose of employing the focus group technique in our study was to find out students' opinions and attitudes on CLIL implementation in ESP classes. Cohen et al. (2007) consider focus groups to be a form of group interview, though not in the sense of a "back-and-forth" between an interviewer and a group, rather as an interaction within the group who discuss a topic supplied by the researcher, yielding a collective rather than an individual view. The participants interact with each other instead of the interviewer and the data emerge from the interaction of the group. It is an explorative technique, connecting a smaller number of people together and led by a moderator who facilitates the group. The moderator uses the

prepared frame of the group interview method so that the group remains focused on the topic and the participants speak freely and spontaneously about topics which they were told about beforehand, and which are interesting for them (Jarrell 2000; Cozma 2007). Focus group research has gained “increased acceptability within academic institutions” (Krueger 1995 p.525) due to its increased use and the insights it provides into the participants’ experiences (Jarrell 2000).

### **Procedure of a focus group**

According to Jarrell (2000), once the group is formed and a moderator chosen, the moderator is in charge. The focus group should begin with an introduction by the moderator. During the introduction they greet the participants and explain the purpose of the focus group. The moderator also establishes the ground rules for the group: briefly describing their role, disclosing how the group discussion will be recorded, explaining the confidentiality of participants’ comments, indicating that participants’ opinions are neither right nor wrong, and requesting that participants speak one at a time.

After that, the moderator introduces the focus group concept. Once this is completed, the moderator begins to elicit information from the participants by presenting them with the stimuli to be used or the questions to be addressed following the guide.

In the end, the moderator summarizes the information obtained and allows the participants the opportunity to revise the recorded input if necessary. Then they close the group (ibid).

### **Duration of Focus Group**

As Jarrell (2000) suggests, the length of time for which the groups meet may vary according to the type of participants. If the meeting is for a marketing focus group, the time usually ranges from one-and-a-half to two hours. In a school setting, the time frame is generally somewhat shorter in order to allow students and teachers to meet during their classes. However, the shorter meeting reinforces the need for a well-planned session.

### **Analysis of Focus Group Data**

As mentioned by Cohen (2000), it might be useful to triangulate focus group data with more traditional forms of interviewing, questionnaires, and observations, etc. According to Jarrell (2000), the researchers must



summarize and analyze the data and draw their conclusions as soon as possible after the focus group meeting. The “process of analysis is the least agreed on and the least well developed” (Carey 1995 p.487) of all aspects of focus group research. In our case we decided to carry out a SWOT analysis of our findings. SWOT analysis is an instrument of strategic planning used for the evaluation of S (strengths), W (weaknesses), O (opportunities), and T (threats). This evaluation technique was first used by Humphrey who conducted his research project at Stanford University in the 1960s.

**Table 2** *SWOT analysis (a basic diagram) (Veselá 2009, p.41)*

	<b>Positive aspect</b>	<b>Negative aspect</b>
<b>Internal factors</b>	Strengths	Weaknesses
<b>External factors</b>	Opportunities	Threats

SWOT analysis is used for the evaluation of sales methods, products, investments, or human resources, as well as for teaching programmes and teaching aids. This tool is mainly used during the careful evaluation of programmes. SWOT analysis describes positive and negative aspects and identifies the factors in the environment which may positively or negatively influence projects. By doing so, this analysis reduces uncertainties and supports the strategy’s improvement or its general assessment. SWOT analysis belongs to the group of tools studying the relevance and possible coherence of specific programmes or entire strategies.

#### **4.4 Design-Based Research at SUA Nitra**

The principles of the **design-based research** carried out in the winter term of 2010 were applied. The *CLIL group* (81 students) was divided into three separate groups. They were each given an introductory class that included a detailed description of the principles and rules of the project work. The students had a chance to work on their projects in a team of two to three people. They also chose the dates of their presentations in front of their peers and the teacher, whose role it was to evaluate the project, its format and content, and the presentation techniques. The dates were arranged within the teaching schedule. The level of English of the CLIL group was B1. This level was intentionally tested and proven by diagnostic test 1. The non-CLIL group (23 students), divided into two

groups, worked within the principles and methods of more traditional ESP classes. They used the textbook *ESP in Agriculture*, followed the topics, and worked on the texts, the pre-reading and post-reading exercises, and grammar, writing, and speaking tasks.

In order to define the understanding of the traditional way of ESP classes, it is necessary to quote the introduction of the textbook used in ESP classes at SAU:

*The textbook English for Specific Purposes in Agriculture (Pre-Intermediate) was written for the students of SAU faculties in Nitra, whose communicative competence is at A2 level. Its aim is to improve student language knowledge, improve communicative competences, as well as the reading techniques of general and specific texts. The textbook is designed so that it can cover English language classes within two terms at A2 level. It consists of the following parts:*

*PART 1: TEXTS with Exercises:*

- *Pre-reading exercises to Text 1, which aim is to motivate the students,*
- *Specific or a general text 1,*
- *List of vocabulary to the text 1,*
- *Post-reading exercises to the text 1,*
- *Pre-reading exercises to the text 2,*
- *Specific text 2,*
- *List of vocabulary to the text 2,*
- *Post-reading activities to the text 2,*
- *Creative activities.*

*PART 2: GRAMMAR*

- *Grammar presentation*
- *Grammar exercises<sup>5</sup>*

The authors believe that the textbook will help students acquire specific vocabulary, work with specific texts, and last but not least, learn the grammar structures necessary for adequate communication in English.

The following topics were offered:

1. Travelling and transport (a topic recommended mainly to the students of the Faculty of Engineering)
2. City Greenery (for the students of the Faculty of Horticulture and Landscape Engineering)

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<sup>5</sup> translated by the author, retrieved from the textbook Holúbeková et al., 2010

3. Nutrition (for the students of the Faculty of Biotechnology and Food Production)
4. Natural Environment (for the students of the Faculty of Agrobiological and Food Resources)
5. Jobs and Careers (a topic applicable to all the study fields)

In this study, both the CLIL and non-CLIL student groups, worked on the above topics with the aim to improve their communicative competences. The CLIL groups' *working instrument* was the project work, whereby the non-CLIL groups followed the textbook. The CLIL groups covered the same topics as those offered in the textbook but their task was to work out the project within the topic related to their study specialization. In the introductory class they were exposed to an example of such a project, along with the rules and criteria agreed on together between the teacher and the students.

The authors of each project were asked to fill in an evaluation form, where they answered six questions: how much time they spent working on the projects, which sources they chose, whether the work in the team was fairly divided, what they had learned from the project, how they found it to work on the project (ranked from 'very interesting' up to 'totally uninteresting'), and their personal opinion on using project work in language classes.

This "informal questionnaire" technique was used only for the teacher's needs and as a helpful tool for the comparison of data analysis of focus group meetings, as they were aimed to question the similar issues of the project work within ESP classes. Analysis of the focus groups is discussed further in the work. The evaluation forms filled in by the peers of each presenting students may be processed in future work as they were not the subject for this thesis.

## 4.5 Data Analysis

In this chapter the process of gathering data and its evaluation are interpreted. Detailed analyses of all three techniques will be described in great detail based on the phases of the research.

As it was mentioned before, three research techniques were employed in order to fulfil the research aims. The triangulation of the techniques contributed towards the complementary results seen later in this chapter. In the first phase, diagnostic test 1 was applied in order to get the students of both CLIL and non-CLIL groups to approximately the same level of English proficiency. The standardized test includes 60 multiple-question

types or gap fillings, with the aim to test grammar structures, vocabulary, reading, and writing competences, referring to the B1 level according to the CEFR.

In order to find out the development of communicative competences in English within ESP classes via CLIL methodology in the design-based research, a comparative analysis of the tests was undertaken, as the sole quantitative approach in the research. It was carried out with the help of two tests. The test evaluation was provided through descriptive statistics. T-tests were also used in order to confirm the results derived from the statistical calculations. Test 1 was used as the placement test with the intention to unify the level of language proficiency of the students in both CLIL and non-CLIL groups. It is the standard test *Quick Placement Test* (OUP 2001) available on PDF format on the Internet site together with the results. Students' results were known and evaluated in the first class so that the initial level of the students was approximate, that is, B1 level according to the CEFR. *Quick Placement Test* (OUP 2001) was used in the introductory class of both the CLIL and non-CLIL groups.

Due to the fact that there are no standardized tests used for measuring communicative competences in ESP at SUA in Nitra, Diagnostic Test 2 was a non-standardized test, constructed by a group of experts, that is, six ESP teachers from the Department of Professional Language Education, SUA in Nitra. They are also the co-authors of the textbook used in the ESP classes at the same institution of higher education (Holúbeková et al. 2010). The test is described in detail further on. The test was originally developed in order to measure the achievements of the non-CLIL students as its content was chosen from the subject matter offered in the textbook. For the purpose of this study it was distributed also to the CLIL groups and the results were statistically analyzed with the help of the basic statistical calculations and subsequently compared.

Content analysis as a qualitative technique was used in order to find out the qualitative and quantitative increase in the specific vocabulary within the CLIL and non-CLIL groups in the chosen topics. Coxhead classification was used as a framework for the specific vocabulary. The aim was to find out whether the CLIL methodology enables exposure to a richer register of specific vocabulary compared to the non-CLIL approach. The process and the evaluation are described further on.

The last technique was the focus group meeting. The objective of this method was to find out the students' attitudes and approaches towards the use of CLIL methodology within ESP classes. The respondents of this research were the students involved in the higher education, and thus they

are considered to be able to compare the different approaches within teaching and learning languages. They had the time and space for expressing their critical-thinking ideas in order to help their teachers make their work in ESP classes more effective.

#### 4.5.1 Diagnostic Test 1

*Quick Placement Test* (OUP 2001) consists of a grammar, a vocabulary, and a reading part. Students were given 30 minutes to fill in the multiple-choice question types, of which the total number was 60. This testing instrument is a reliable and valid method used as a standardized test for finding the level of proficiency in English. The vocabulary is tested in the context of meaningful sentences and texts. Grammar is similarly tested within the context of sentences and short texts. All the questions in the test are arranged from the simplest to the most difficult. The students were instructed to work out the questions and answers systematically and to finish at the point in which they feel most comfortable with, as the idea of testing is to find out the level of English according to the CEFR. Therefore, the students were asked not to guess the correct answers for the questions they were not familiar with. In total, it was possible to gain 60 points from the whole test and the suggested placements of the points were as follows:

**Table 3 Test points**

Placement Test Total Score	Score relation to the CEFR levels
0-17	A1
18-29	A2
30-39	B1
40-47	B2
48-54	C1
55-60	C2

After evaluating the results of the initial levels of English in both groups, two students were kindly asked to take the course of English for Specific Purposes in the following semester as their results reached B2 level which was not suitable for our research. The mean values of the placement tests in both groups were very close; therefore we can state that

CLIL and non-CLIL groups were homogenous from the point of view of the initial level of English at the beginning of the ESP courses according to the CEFR.

The mean value of the placement test scores for both groups was:

**Table 4 Groups**

Non-CLIL groups	34.62
CLIL groups	36.45

It is evident that there was a two-point difference between the group score and that the initial level of English proficiency was comparable. The CLIL group's mean value was two points higher than the non-CLIL one.

Due to the fact that the primary concern of our study is communicative competence, we decided to also add a writing part to diagnostic test 1, as it also consisted from vocabulary, grammar, and reading parts. The focus on writing skills is also part of ESP courses. After finishing diagnostic test 1, the students were asked to write down ten sentences, particularly on their year, field of study, their specialization and the reason why they had chosen it, their previous secondary school education, as well as their English language learning history. That part was evaluated by ten points in maximum and the syntactical, lexical, and grammatical functions of the sentences were taken into consideration. The results of the tests are commented on in the following chapter.

#### **4.5.2 Diagnostic Test 2**

Contrarily, the second testing instrument was constructed by the researcher with the help and advice of the experts teaching ESP at the Department of Languages, SUA in Nitra. The test was primarily constructed for non-CLIL groups in order to measure the communicative competences covered in the textbook used in ESP classes at SUA in Nitra. In the study it was also distributed to the CLIL groups in order to compare the achievements between both groups.

The construction of the test was identical to test 1, consisting of 60 questions from two parts, vocabulary and grammar, and a reading part. A writing part worth up to ten points was the final to be evaluated. Thus, the total score was out of 70 points. The content of vocabulary and grammar structures in the test was intentionally chosen from the five chapters of the

textbook used in the non-CLIL groups. According to the criteria on the correct testing that Cunningham (1998) in his work suggests, diagnostic test 2 followed all of them. The results were statistically calculated. Diagnostic test 2 proved to be reliable and valid for the purposes of testing. Cohen (2009) says that reliability of the testing instrument consists of three attributes, these being extent, homogeneity, and difficulty. The shorter the instrument, the less reliable it is. The same is true with the other two attributes. After cooperation and discussion with the qualified and experienced ESP teachers at the department, it was agreed that test 2 definitely tests the knowledge covered in the textbook and thus the reliability of the test was confirmed. However, it must be mentioned that the test was produced especially for the needs of this research and therefore the instrument is not suitable for other similar types of research, nor can the results be generalized and interpreted for all ESP courses or studies regarding CLIL methodology. As for the preparation of the students for the test in the ESP classes, the non-CLIL groups were not purposefully prepared for test 2, however, all the vocabulary and grammar structures were covered in the textbook. The composition of the test was identical to diagnostic test 1 due to the fact that it might have been stressful for some of the students to be exposed to the different forms of question types. Wishing to eliminate any stress factors, it was agreed to keep the structure and the form of test 2 identical to test 1. The questions testing grammar and vocabulary were multiple choice questions and in the writing part the students could choose from three options. They were also asked to write a short paragraph, either on transport in Nitra, the possibilities of how to make this planet greener, or a description of the student's future job and career.

The use of test 2 was planned for the last meeting of the ESP course and it was decided to be distributed to both groups. CLIL and non-CLIL groups covered the same topics within their ESP courses; however, the students of the CLIL groups did not use the textbooks in the classes. Thus, they were not directly exposed to the vocabulary and the grammar structures used in test 2. The objective of using test 2 in the CLIL group was to compare the increase of the specific vocabulary, grammar structures, and writing skills to the non-CLIL group. The results will be discussed further in the following chapters.

#### **4.5.3 Descriptive Statistics in CLIL and non-CLIL Groups**

The statistical data described in this chapter were achieved with the help of Ing. Renáta Prokeinová, PhD working at the Department of

Statistics, Faculty of Economics and Management, Slovak University of Agriculture, Nitra. In this chapter the results of diagnostic test 1 and diagnostic test 2 in the CLIL and non-CLIL groups will be described, analyzed, and interpreted.

The test consisted of four parts, grammar, vocabulary, and reading, and also a writing part. The results are calculated separately and a total score is calculated of all the parts. Then, the scores are compared between the CLIL and non-CLIL groups with the aim to see the partial and total differences.

**Table 5 Test 1 non-CLIL group**

	<b>Grammar and Vocabulary</b>	<b>Reading</b>	<b>Writing</b>	<b>Total Score</b>
<b>Mean</b>	28.31	6.31	5.93	40.55
<b>Minimum</b>	12.00	1.00	1.00	15.00
<b>Maximum</b>	38.00	10.00	10.00	56.00
<b>Standard Deviation</b>	6.44	2.17	2.15	10.07
<b>Median</b>	30.00	6.00	6.00	40.00

**Table 6 Test 1 CLIL group**

	<b>Grammar and Vocabulary</b>	<b>Reading</b>	<b>Writing</b>	<b>Total Score</b>
<b>Mean</b>	30.07	6.25	5.84	42.16
<b>Minimum</b>	15.00	2.00	3.00	25.00
<b>Maximum</b>	43.00	10.00	9.00	61.00
<b>Standard Deviation</b>	7.40	1.98	1.78	9.94
<b>Median</b>	30.00	7.00	5.50	40.00

The total score was 70 points. The mean value in the non-CLIL group was 40.55 points, where the minimum was 15 and the maximum 56. Standard deviation represents the variability of the analysed value, i.e. the score, and indicates varying the score in the range of 10 points. The highest score in the grammar and vocabulary part was 50, while the reading and writing parts were both evaluated with 10 points maximum (20 in total). As we indicated before, the writing part was added.



The objective of diagnostic test 1 was to place the students of both groups on a comparable level according to the CEFR, therefore it was not necessary to evaluate every part of the test separately. However, we decided to calculate it in order to see the strengths and weaknesses in both groups and compare them.

As it is evident from the comparison of all the values in both groups (see Tables 13 and 14), all the parts of the test in both groups were approximately the same and therefore comparable. The testing instrument served well for making the groups in our study convergent. Important to our research was to discuss and interpret the partial results from test 2, as this test analysed the results reached within both groups and the competences developed through different methodological approaches.

**Table 7 Test 2 non-CLIL group**

	<b>Grammar and Vocabulary</b>	<b>Reading</b>	<b>Writing</b>	<b>Score</b>
<b>Mean</b>	37.48	8.48	7.41	53.31
<b>Minimum</b>	26.00	5.00	1.00	38.00
<b>Maximum</b>	47.00	10.00	10.00	65.00
<b>Standard Deviation</b>	6.00	1.70	2.43	7.68
<b>Median</b>	37.00	9.00	8.00	52.00

Source: Own research

**Table 8 Test 2 CLIL group**

	<b>Grammar and Vocabulary</b>	<b>Reading</b>	<b>Writing</b>	<b>Score</b>
<b>Mean</b>	33.77	9.05	7.52	50.23
<b>Minimum</b>	17.00	4.00	5.00	28.00
<b>Maximum</b>	48.00	10.00	10.00	67.00
<b>Standard Deviation</b>	7.75	1.38	1.61	9.83
<b>Median</b>	33.50	9.50	8.00	50.00

Source: Own research

The maximum score was 70 points. For the grammar and vocabulary part it was possible to reach 50 points. The reading and writing part were evaluated with 10 points each maximum.

As for the mean value of the test, we can state that the non-CLIL group reached a higher score which happened due to the fact that the questions in test 2 were intentionally formulated from the textbook used on the ESP course for the non-CLIL group. Especially, the focus of our study was on specific vocabulary. From the results of that part of the test we can state that the non-CLIL group reached a significantly higher score than the CLIL group in the part grammar and vocabulary. It was expected, as the non-CLIL group was exposed to a definite number of vocabulary within the five topic areas. As it is evident from content analysis (see 10.1), within the same five topics, the students of the CLIL group encountered not only more words but the specific vocabulary that covered the subtopics was of a greater variety.

The reading and writing parts were higher in the CLIL group in the mean values. The students of the CLIL group developed their reading and writing skills through the preparation of their projects by using authentic materials, and this therefore might be an explanation for their better results in those two parts. However, the difference was not very significant.

#### 4.5.4 T-tests

T-tests used in our comparative analysis served as an additional tool to confirm the results interpreted from the descriptive statistics. In this chapter we will briefly describe the test results as it is not the essential focus of this study. A *t-test* is a test of agreement of two middle values for independent groups. There are two of them due to the fact that we compared non-CLIL and CLIL groups within diagnostic test 1 and diagnostic test 2. They are independent because we talk about the different students tested with all the parts of test 1 and test 2 with a formulated hypothesis:

$H_0$ : non CLIL=CLIL,  $H_1$ : non CLIL≠CLIL

If p-test value >0.05,  $H_0$  we accept it

If p-test value is <0.05, we refuse it

We analyzed diagnostic test 1

Non-CLIL group versus CLIL group

T-test of the two middle values agreement for independent groups

**Table 9 T-test for Diagnostic Test 1**

<b>Grammar and vocabulary</b>	T-test value		-1,04
	p-value		0,2999
<b>Reading</b>	T-test value		0,12
	p-value		0,9027
<b>Writing</b>	T-test value		0,17
	p-value		0,8691
<b>Score</b>	T-test value		-0,67
	p-value		0,5032

It is evident that in each part of the test the results of the CLIL and non-CLIL group are approximate with the number of points. It means that the results of the descriptive statistics were confirmed. The initial level of English of both groups in our research was comparable.

**Table 10 T-test for Diagnostic Test 2**

Non-CLIL versus CLIL group

<b>Grammar and vocabulary</b>	T-test value		2,18
	p-value		0,0325
<b>Reading</b>	T-test value		-1,55
	p-value		0,1251
<b>Writing</b>	T-test value		-0,21
	p-value		0,8324
<b>Score</b>	T-test value		1,43
	p-value		0,1585

The interpretation of the results is that the total score of the non-CLIL and CLIL groups are similar. The same was proven with the results of the writing and reading parts. However, the part of grammar and vocabulary is different as has been explained in the descriptive statistics of Test 2. The probable reason has also been interpreted in the previous chapter. At this point it is essential to state that the results of the t-tests proved the results stated in the descriptive statistics.

### 4.5.5 Conclusion

For the sole quantitative technique of our design-based research, we used the comparative analysis of the CLIL and non-CLIL groups with the help of the testing instruments. Diagnostic test 1 was chosen with the aim to place both groups at the same level of proficiency according to the CEFR. Therefore, the standardized test was distributed to the students in the first meeting of the ESP course. Consequently, two students were asked to take the ESP course the following semester as they reached a higher level of proficiency of English than the rest of the group.

In order to evaluate test 1 we used the values typical in descriptive statistics: the mean, maximum, minimum, standard deviation, and median. These values were calculated for all parts of the tests from both groups. The same procedure was carried out for diagnostic test 2, distributed in the last session of the ESP course. The formalities of test 2 were identical to test 1, regarding the organization and number of the questions. The content of the test was formed by the ESP teachers at the Department of Languages at SUA and the questions were intentionally chosen from the textbook used for the ESP course in the non-CLIL group. However, according to the plan of design-based research, it was agreed to also distribute the test to the CLIL group with the aim to compare the partial and total results of all the parts of test 2. In the comparative analysis of test 2, the calculation of descriptive statistics was applied. The t-test values were added in order to prove and confirm the conclusions reached by the descriptive statistics. As for the results, we can state that both groups reached similar and comparable results in the reading and writing parts of diagnostic test 2. The grammar and vocabulary values were significantly higher in the non-CLIL group as this group was intentionally prepared for this with the textbook used on their ESP course.

### 4.6 Content Analysis

Content analysis provided the answer to the question regarding the increase in gained specific vocabulary in the CLIL groups compared to the non-CLIL ones. By analyzing the projects presented by the students, vocabulary usage was ranked into specific groupings according to its purpose of use. The words were identified within the list prepared by Coxhead under the following topics: Technology, Environmental Sciences, and Health Science. Afterwards, the vocabulary was compared with the vocabulary used in the textbook (used in non-CLIL groups). With the help of the wordlist of academic vocabulary written in *A Guide for*

*Students in Higher Education* (Gillet 2011) who broadened the research carried out by Coxhead in 2000<sup>6</sup> where English words were ranked into general or specific word families in fields such as *Criminal Law*, *Environmental Science*, *Business*, *Health Science*, *Computer Science*, *Technology*, and *Music*. The vocabulary from the projects was classified as being specific.

Coxhead studied over 3.5 million words of academic text from 28 subject areas and identified another 570 word families that were commonly used in academic texts from all subjects. She called these words the Academic Word List (AWL). It was later enriched with specific words related to specific professional subjects. This tool helped us distinguish the vocabulary in the projects and it was used as a framework for this vocabulary which was then divided into the general or specific one. We worked with the list of academic vocabulary, especially the specific fields of Environmental Science and Science and Technology. However it must be said, especially within the part of Environmental Science, that some of the words used in the presentations were not found in the AWL. Due to their rare use they were ranked among the list of specific words as they were mainly family names of plants and animals and are therefore found only in very specific contexts. Within each topic, a table was created listing the words offered in the textbook and the wordlists from the performed projects. The students in CLIL groups were asked to prepare a list of vocabulary for their peers, but this was not done by all of them. The words from the projects were recorded, and afterwards compared with the vocabulary offered by the textbook within the same topic. Then the lists were compared and common words identified. This clearly showed the amount of vocabulary that the students in the both the CLIL and non-CLIL groups were exposed to within each topic. The wordlists in the textbook were chosen from the texts. There are two texts in each topic adjusted for B1 level according to the CEFR. On one hand, the biggest advantage of the given texts in the textbook was the proper use of it in context, i.e. students are exposed to the chosen specific vocabulary used correctly in context. Within the projects there was a danger of misusing words, as the level of language proficiency of students was not high enough to self-evaluate this. However on the other hand, when the students followed the instructions on how to make an effective presentation in English given in the introductory class, they knew how to judge the sources they worked with or, in case of some uncertainties, they

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<sup>6</sup> Averil Coxhead from the School of Linguistics and Applied Studies, University of Wellington, developed and evaluated the Academic Word List (AWL)

were advised to discuss any problems with the teacher. The advantage of the wordlists made by the students in the CLIL group was that they worked on it by themselves and, as they admitted afterwards (as shown in the focus group meetings recordings), they remembered it more as it arose in their own professional needs. Provided that the students worked with the authentic materials written in English they eliminated such a disadvantage. Our research concentrated on the increase of specific vocabulary, however there are more added values aiming to develop language competences apart from just reading skill and gaining new vocabulary, such as written preparation of the project and the eventual oral performance in the foreign language, even though the level of English proficiency of the students ranges from A2 to B1.

The students of CLIL groups covered the topics by preparing projects on their own. Their projects, with one exception, were presented in PowerPoint. Students were advised to choose the topic according to their specialization. They worked in teams or in groups. In total, there were 75 students presenting 25 projects, however two were not possible due to technical problems arising from technical errors with the equipment. One project was a poster by the students of the Faculty of Horticulture and Landscape Engineering. The poster was a design of a garden with the positions of trees and plants with specific names. The authors of the poster also used their project for another professional subject.

In the following parts there are qualitative analyses of the projects within each topic describing the content and form. The tables comparing the specific vocabulary from the textbook (in the non-CLIL group) with the new words used in the projects (in the CLIL group) are included, with the aim to see the amount of new vocabulary students are exposed to in both groups. As was mentioned, content analysis is a subjective qualitative feature of design-based research and therefore it cannot be generally applied to all cases.

#### **4.6.1 Unit 1 – JOBS AND CAREER**

This topic was chosen by six people from the Technical Faculty resulting in two projects in PowerPoint. When we compared the vocabulary offered in the textbook with the projects prepared by the students we came to the conclusion that there were 19 common words categorized as general, according to Coxhead (2000). Those categorized as specific were counted to be a total of 27 in the textbook used by non-CLIL group. In the CLIL projects, Project 1 used 21 specific words and Project 2 used 13.

**Table 11**

<b>Textbook Vocabulary</b>	<b>Project 1</b>	<b>Project 2</b>
<p>ability, achieve, accomplish, award, back up, be proud, brag, career development specialist, cause, claim, chance, college degree, cover letter, counsel, chronological, decide, discover, earn, enhance, experience, extracurricular, fellowship, format, glimpse, go after, high school, honor, impressive, library, list, major, membership, minor, particular, postgraduate, resume, reveal, reverse, sample, search for, scholarship, title, suggestion, till, use, widely, assist, backbone, broad, corporation, courtesy, decisiveness, delegate, desirable, develop, directing, endless, evaluate, exercise, expertise, field, follow, generalist, government agency, guideline, high-paying position, key-function, non-profit organization, operate, opportunity, oversee, performance, policy, procedure, property, seek, specialty area, status, supervise, supervisor, within</p>	<p>advertisement, job vacancy, job centre, employment agency, apply for, CV, potential, job interview, contract, to sign, cover, living costs, working conditions, salary, boss, intolerant, unpleasant, working time, to be made redundant, job offers, lawyer, economist, computer analyst, well-paid, get on with, under pressure, stressful, fisherman, fatalities, logger, rancher, construction worker, sanitation worker, airplane pilot, roofer, miller, coal miner, merchant mariner, fatal accident rate, consequence of, work related, accident, building industry, average</p>	<p>accomplish, CV, go after, chance, personal information, professional qualification, award, professional membership, references, cover letter, conclude, skills, targets, crisis, competitions, responsibility, avoid, requirements, self-confidence, benefits, loans, maternity leave, sick leave, day off, vacancy</p>

Project 1 deals with the most dangerous occupations and the problems of young people to find a job. From the point of view of form and content, the project followed the rules given in the introductory class. Specific vocabulary was used in its proper context. The only drawback from a language point of view was poor pronunciation, which was additionally commented on by the teacher. The second project was of a more general character. It described the steps needed to be taken when looking for a job. It gave a general overview of the contemporary situation on unemployment. The project was eventually followed by a heated discussion after the presentation. The students in this case were provided with more general vocabulary, although there are some specific words used in the project. The following table compares the specific vocabulary used in the textbook and in the projects within the mentioned topic. The framework for the specificity of the work was the list of academic vocabulary developed by Coxhead (Gillet 2011).

#### **4.6.2 Unit 2 and Unit 4 – CITY GREENERY and NATURAL WORLD**

The topics in the textbook City Greenery and Natural World are very similar in content and due to the fact that the students were free to adjust the topic according to their needs it turned out that these two topics overlapped. Therefore, they are presented together in this chapter. Both relate to the natural and ecological point of view of the world around us. The projects were created by the students of the Faculty of Horticulture and Landscape Engineering. All but one was presented in PowerPoint. The only exception was one presented as a poster where drawings of the garden design were described. It was evident that the students used knowledge from other subjects, for example Botany, Architecture, Drawing and Design, etc., in order to complete the task. The projects were of a wide range. Project 1, *Arboretum Mlýňany* was a very detailed description of the flora within different expositions. The presentation was very rich in information and dynamic with its pictures used. Project 2, *Protected Landscape Area in Štiavnica Hills* was a description of a protected area in the central part of Slovakia. It was actually part of a bachelor thesis from the students, who also bridged their knowledge from their professional subjects in English classes. The interdisciplinary nature of their work multiplied the outcome and threw a professional light on their presentation. In the discussion, it was chiefly apparent that the students of the Faculty of Horticulture and Landscape Engineering were involved in the wild professional talks. The student discussion after the



presentation was led almost in fluent English, and freely too without students being drawn back with their grammar mistakes. Project 3, *Chamois* was quite simple, presented by a group of three students. It described rare species of animals and plants living and growing in our country, Slovakia. Even though they used some of the specialized vocabulary, their presentations contained lots of Slovak terms that they had not translated into English.

Projects 4 and 5 were focused on garden architecture. Project 4 profiled the most distinguished architects in the world with descriptions of their originality and it pictured existing examples presented throughout the world. It must be said that this project was the most professional in terms of both content and form. The students admitted that they asked one of the fluent English speaking students to check their English in the presentation and the result was that there were hardly any mistakes in grammar and spelling. There were a few inaccuracies in their pronunciation when presenting but this was acceptable in regard to the desired level of English.

Project 5 presented the most beautiful gardens in the world. There were pictures only and it did not include any text, thus the presenters put a lot of effort in preparing the oral presentation. At the end of their presentation the list of the professional vocabulary was included. Again, the power of the visual element in PowerPoint was fully exploited. In the following table the specific vocabulary used in the textbook and the projects is compared.

To sum up, the vocabulary from the projects varied from the very general to the very specific. There were family names of the plants, trees, and animals, as well as words learnt at the secondary school levels. The aim of finding and processing the authentic materials as well as using specific vocabulary for students' professional needs was fulfilled though. Out of 73 words from the wordlists offered in the textbook the projects used 15. On the other hand, the students in their projects proposed altogether 171 new words in four different contexts. However, the topics of the projects varied a lot from the text in the textbook and therefore not a lot of words overlapped.

**Table 12**

<b>Textbook vocabulary</b>	<b>Project 1</b>	<b>Project 2</b>	<b>Project 3</b>	<b>Project 4</b>
<p>according to, contribute, covered, decrease, deflect, electric bill, generate, grid, in the long run, install, living space, metric ton, to mount, offset, overall, physicist, power plant, save money, to hook, to plant, to settle for, to waste, TV antenna, alike, competition, encourage, examine, fungi, habitats, hazel doormouse, in decline, opportunity, species, stag beetle, take a closer look, take a walk, accurate, archipelago, capture, collection, diminish, eliminate, endemic, equator, explain, extinction, extract, finch, fur, hunting, observation,</p>	<p>evergreen, cultivate, valuable, latitude, longitude, Turkey Oak, Penduculate Oak, Hornbeam Eastern Redcedar, Lawson's cypress, European Black Pine, taxons, rare, Himalayan Birch, bark, according to, Rhododendrons, Azaleas, coniferous, Blue Spruce, White fir, cedar, Rocky Mountain Bristlecone Pine, Silver maple, Giant</p>	<p>protected, contribute, landscape area, hills, mountains volcanic, interface, climate, reflect, horizontal, vertical, flora, fauna, element, reservoir, ditch, tree species, forestry, eliminate, botanical garden, proportion arboretum exotic plants, thermophilic, andesitic rock, metric ton, xero-thermic flora, rare, carnivorous, mammals, insects, aban-</p>	<p>chamois, covered, decrease, native to, subspecies European habitats directive, taxonomy, genus, goat-antelope subfamily, living space, Tatra chamois, Balkan Chamois, Carpathian, The Pindus Mountain, origin, habitat, capture, altitude, steep, rugged terrain, hooked, distinct characteristics, herd, solitarily, rut, impregnated, female,</p>	<p>intense, landscape, jungle, environmental design, set up, urban, rural, fascinated, contemporary, natural materials, fusion, outside spaces, specify, source, hybrid, blending, sensuality, imperfection, reveal, power plant, unique, earthquake, volcano, waste, inherent, defy, handmade feel, embrace, fine arts, waterfront projects, urban master planning</p>

origin, remarkable, reserve, responsible, seal, selection, species, specimen, survive, tortoise, unique, whaler, acre, altitude, caldera, earthquake, intact, outstanding, petrified, temperate, tribe, volcano	sequoia, log hut, disposed, Japanese Red Pine, Sargent's Viburnum	doned mines, bats, mineral springs, hiking trails, thermal bath, spa, willow, oak, domestic flora, endangered dendro-taxons, autochthonous dendro-flora	gestation, game, traits, exploited by, tuft of hair	
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### 4.6.3 Unit 3 – TRAVELLING

Travelling was primarily aimed at the students of the Technical Faculty. Even though the topic might seem very general, suitable for secondary students, it approached specific subthemes such as “London Transport” and “the *Shinkansen* bullet train”. Students were provided with the vocabulary necessary for discussing modes of transport or methods of travel in different parts of the world. Within the role-plays coming out of the real-life situations, students got the chance to acquire and practice the necessary vocabulary. Comparatively, in eight projects from groups of CLIL students, there was again a wide range of contexts under the topic. One project dealt with traffic jams in big cities throughout the world, Projects 2 and 3 presented holidays, interesting destinations, and how visitors could travel to them as well as travel around them. Projects 4, 5, 6, and 7 were simply a general overview of ways of travelling, modes of transport, and the pros and cons of said travel. Project 8 discussed via PowerPoint, the R1 expressway in Slovakia, a particularly controversial topic discussed in Slovakia at the time. It was prepared by the students doing their master’s degree at the Technical Faculty. Their presentation

was highly original, up-to-date, and well-organized in regards to form, style, and language. A lot of words from the presentations were repeated, so we therefore decided to make two groups of words. One is a set of words from the textbook and the second chosen from all the projects within the same topic.

**Table 13**

Textbook vocabulary	Project 1- 2- 3- 4- 5- 6- 7- 8
Buses-only congestion, destination, dispose, fare, pay-as-you-enter buses, permit-only parking area, request stop, restrictions, single-or double-decker buses, bus terminal, aircraft, disembark, quay, liner, trip, depart, corridor, aisle, commuter, conventional, enable, freight train, metropolis, obstacle, operate, outlying	Distant, destination, goals, insurance, efficient, spending, half-board, full-board, provide, safe, expressway, public-private partnership, launch, bypass, improvements, freight transport, double-decker buses, interconnection, accessibility, steel construction, commencement, traffic congestions, restrictions, requests, landslide, ski slopes, enable, comprise, propulsion, infrastructure, warehouse, legalities, mode, tracks, rail line, electric trams, hot air balloons, recreation, graziers, phenomenon, acquainted with, affect, operate, space shuttle, ocean liner, external tank, ferry, consumption, payload, dump, get stuck, watercraft, military, reasonable, commerce, carriage, voyage, delayed, iceberg, dependent, weighed, pump, tanker, costs, depart, estimation, conductor, loss, liquid hydrogen, bomber, take off, nose-up move, aviation, eject, off-shore, spew, essential, prevent, clean-up, gallons, B-2 stall, investigator, distorted, oil spill, obstacle, costly, toll, split in half, recovery, debris, socio-economic, contaminated, resettlement, nuclear plant, attribute, safety requirements, residential, tobacco field, yurt, pass, streambed

When comparing the textbook vocabulary (28 new words) and the project (85 new words) there were 15 words appearing under both contexts. There is no doubt that the presentations offered a higher number of specific vocabularies, however, due to the level of language some of the words were wrongly used. Then, when discussing the form and structure of the projects, three out of eight were not very well organized. There was too much text in the slides which made a chaotic impression. The students in the introductory class were asked to prepare their projects according to the rules of effective presentations which were not followed in some of the cases. As was mentioned, four projects were very similar in content, however not identical, giving the advantage that peers were repeatedly exposed to new vocabulary within more language classes.

#### 4.6.4 Unit 5 – FOOD

The majority of ESP courses during the academic year of the research were those of the Faculty of Biotechnology and Food Technology. “Food” as a topic for an English project has a very general context for all the areas and concerns in the students’ field of study. The textbook offered two texts where the first “Food, glorious food” (Holúbeková et al. 2010, p.35) is a very general overview of healthy food. The second text, “In eating habits, East is better than West,” is about different cuisines throughout the world. The CLIL students were asked to adjust the topic to fall in line with the overall specific topics, or to prepare the project as part of their final theses. The students eventually presented eight projects. Similar to the previous topic, three out of eight (Projects 6, 7, and 8) included a very general description of the food pyramid, text mostly taken from Internet sites, and without a formal academic approach applicable to a student in higher education. On the other hand, five projects were quite distinguished in their topics, both appealing for the students and rich on information and specific vocabulary. The students really proved their critical thinking and orientation in their field of study, as well as using English as a tool for finding professional information for their own needs. Project 1, *Eating habits in different countries* and Project 2, *Eight tips to healthy eating* mentioned various tastes and differences in ingredients in the cuisines in the world. Project 3, *Bio products*, dealt with the controversial issue of healthy ways of life in terms of providing bio products from authorized sellers and trustful markets. This project was really well performed with a minimum of mistakes in language and form. The authors confirmed that they had spent almost three weeks in the search for materials and processing any texts found. They got their presentation proofed by the

more competent students, and checked their pronunciation by practising the presentation several times before the real performance in the class. Students actively participated in a heated discussion after the presentation. Projects 4 and 5 were quite similar in content as they talked about civilizational diseases stemming from unhealthy ways of life, especially eating habits. These two projects were again well performed and overworked in their form, style, and language. Projects 6, 7, and 8 discussed very general eating habits and the nutritional content of foods and the like. They mentioned junk food and wrong eating habits, however, as mentioned, according to the teacher, the content, form, and style were not to a suitable academic level. The following table shows the specific vocabulary where the wordlists of the similar projects are put together.

**Table 14**

<b>Textbook</b>	<b>Project 1</b>	<b>Project 2</b>	<b>Project 3</b>	<b>Project 4, 5</b>	<b>Project 6, 7, 8</b>
amount, beef, beans, beneficial, building block, carbo-hydrates, corn, damaged, disagree, eating right, entirely, fat, grow, habit, iodine, iron, lobster, made up, mutton, nutrition, nutrient, pork, protein, rice, taste, seafood, shrimp, shellfish, vegetable, wheat, although, animal product, bowl, cereal, colon cancer, Chinese, diet, eating habits, fibre, grain,	avoidance, poultry, raw, rennet, dairy products, infrequent harming, nutrient, protein, rice, exclude, scallions, leek, shallot, bowel, purging, fasting, compul-sive, response, self-esteem, Chinese, eating habit, excessive adolescent refusing, brittle, obsessive-ness, enamel, exposure, ulcer, extent	deprive from, include, low-fat, whole-bread, main course, dessert, balance protein, carbo-hydrate, fat, vitamins minerals pastry, amino-acids, blood pressure cancer, chole-sterol	depend on, nutrition, heat-treated, matters, amyloid, heap, afford, phyto-genetics, dis-solvable, corn products, dried, parsley, chives, dill, water cress, saccha-rides, irrep-la-ceable, sparingly, fair trade, vary, suspect, digest, phenolic com-pounds, seeds, fertilizers, compost, root sti-mulators, pest control, GMO, nutritious,	replacementtissue, supply, obtain, water soluble, fibre, synthesize, origin, ingested, refuse, gain, purge, corn, crumb, kidney, water supply, slice, truffles, tissue, pro-gesterone, diosgenin, scallions, shallot, life expectancy, enemas, iron, zinc, copper, calcium, diabetes, occasion, pasta, whole grain,	Sparingly, bio products, beef, pork meat, beans, carbo-hydrate organic food, vegetables, wheat, animal products, cereals, processed, whole grain, whole milk, stroke, high blood pressure, pesticides, fertilizers, differentiate livestock, chives, interference

<p>healthy, heart disease, include, joint, lots, occasion, meat, pasta, plant-based diet, poor diet, prime suspect, rate, stay away from, scientist, sparingly, stroke, suspect, vary, whole grain, whole milk</p>			<p>topsoil, authorized</p>	<p>whole milk, renal disease, dementias, diuretics, dental cavities, enamel, stomach ulcers, BMI (Body Mass Index), heart disease</p>	
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Overall, there were 29 common words out of 58 offered in the textbook and 149 words included in the projects within the topic.

#### 4.6.5 Interpretation

In total, the non-CLIL group was exposed to 186 new words offered under all five topics. The projects of the students in the CLIL groups used 78 words in common with the textbook under the same topics. However, in total there were 473 new specific terms within 23 CLIL student presentations, which means that the amount of specific vocabulary to which the students of the CLIL group were exposed had almost tripled. It certainly does not mean that all the terms and words were acquired by all the students and reviewed afterwards; however, as was later seen in the result of the focus group meetings, the students admitted that the words they remembered best were the ones involved in their own projects and presentations.

Regarding the specificity of the words, we used the Academic Vocabulary List (Gillet 2011) which served as the framework, however not all of them were found on the list. This list is divided into different fields of English words for Specific Purposes, and the words from the presentations of CLIL groups fit into the categories of the following fields: *Environmental Science*, *Health Science*, and *Science and Technology*. Specialist words denoting types of herbs, plants, and animals were definitely ranked into the list of specific vocabulary even if they were not found on the Academic Vocabulary List.

As was evident from the list of words within each topic, the presentations in the CLIL groups covered a wider range of specific terms related to the professional specializations of the students. The words were used in context, however in some of them they were not used correctly. For example, the meaning of the word *ambulance* in one project was confused with *emergency*, as the meanings are similar in the Slovak mother tongue and therefore misapplied in English. Students mostly used English sources, most of them available from the Internet, however not all of them were reliable and proofread. Therefore, some semantic mistakes occurred in their presentations. In contrast, the positives of such phenomena are that while the presentations were being performed, the teacher was able to draw the students' attention to the mistakes and thus eliminate their repetition in any further works. The same applies to pronunciation. In the introductory class the students were advised to check their pronunciation, however the majority of them had difficulties in pronouncing some of the specific terms correctly. That was again the

teacher's role to check and correct the pronunciation.

Intercultural diversity was discussed mostly in the presentations on the topic of *Nutrition*. Students discussed the cultural differences of national cuisines and traditions. The same applied to the topics *Travelling* and *Jobs and Careers*. Environmental issues drew attention to the various regulations and procedures set in different cultures regarding various issues, for example waste separation. The presentations offering the specific names of plants, animals, technologies, and foods contributed towards a more professional approach in the ESP classes. Students of the CLIL groups, in the focus group meetings, mentioned that the motivation for them in their projects was the overlapping values of the foreign language that served as an instrument through which the topics from their professional fields are discussed and interpreted, and the scope of their professional fields. They experienced the search for specific information with the enhanced knowledge stemming from a deeper and broader overview of the materials regarding their professional intentions and specializations. The autonomous approach within English language learning is inevitable in this case.

As for the negative sides, the scope of terminology was demanding for the teacher as she was not an expert in all the fields of specialization, however, that can be also seen as a challenge in *updating* the vocabulary register. The ESP classes in the CLIL groups were more open regarding the fact that when the term was not comprehensible in English the students used their mother tongue to explain it, which is acceptable within CLIL methodology where the mother tongue is not neglected. Working with web dictionaries regarding the meaning or proper pronunciation of terms was often used due to the fact that the teacher had no chance to prepare comments to the presentation performances in advance.

To summarize, when comparing the specificity of the terminological content of the CLIL and non-CLIL groups, the CLIL groups were enriched with a wider range of specific terminology, however that does not mean that all the words were acquired by all the students, as this was not the aim of this research. The aim of the content analysis as a research technique in this work was to answer the research question of the increase of the specific vocabulary in CLIL and non-CLIL groups. It was proven that an increase in specific vocabulary is much more evident in the CLIL groups compared to the non-CLIL groups.

## **4.7 Focus Group Meetings**

Two focus group meetings were employed in our study, consisting of 20 and 25 people. As these meetings were organized after the last ESP

session, out of 81 respondents only 45 appeared due to their other commitments. Therefore, two meetings were organized and analysed afterwards in a SWOT analysis which is described at the end of this section. In order to gain a better understanding it is necessary to take a closer look at the particular objectives set in the research. The research was conducted in the winter term of 2010. The CLIL group of 81 students were divided into three groups and were given the introduction class with all the description and explanation of the project work. The students had a chance to work on their projects in teams of two to three people. They also chose the dates of their presentations to be held in front of the teachers and class, who would evaluate the project from the point of view of format, content, and presentation techniques. The dates were arranged within the teaching schedule. The level of English of the experimental group was A2 (Pre-Intermediate).

The following topics were offered:

- Travelling and Transport (topic recommended mainly to the students of the Faculty of Engineering);
- City Greenery (for the students of the Faculty of Horticulture and Landscape Engineering);
- Nutrition (for the students of the Faculty of Biotechnology and Food Production);
- Natural Environment (for the students of the Faculty of Agrobiology and Food Resources);
- Jobs and Careers (a topic applicable to all study fields)

In focus groups, the students were asked to express their opinions on using project work (as a part of CLIL methodology) within ESP. They claimed that, compared to the traditional format of English classes that they had been exposed to previously, project classes were more interesting and they had been more actively involved. Despite some mental discomfort at the beginning at the thought of presenting in English, they afterwards appreciated the valuable experience in presenting in a foreign language. This experience made them more confident not only in English but also in their presentation skills.

Furthermore, they also admitted that they felt better acquainted with the topic they had chosen for their project and that they learned more than from the times they passively watched and listened to projects. Also, they criticised the topic limits, and in the future they wished to have more freedom about the choice of topic. One drawback was the peer evaluation of the projects by the students. Most of them were very generous to their

colleagues and did not evaluate the projects according to the set criteria. Very often, the evaluation sheets of the presenters were more critical than those handed in by their colleagues. To conclude, from the point of view of the students, the projects within ESP required extra time and effort but the result was mainly positive and the students found the work interesting and challenging.

According to the theoretical background described previously, the authors followed the principles for successful focus group procedure. It was held in a classroom where the chairs and tables were organized in a circle in order to allow for more open communication and to develop a friendly atmosphere. Dr. Prokeínová from the Department of Statistics, acted as the moderator. The students met her for the first time at the focus group meeting intentionally. We assumed that it would not have been a good idea for the teacher (the researcher) to have also been the moderator due to the personal involvement with the students. Each focus group session took approximately 30-40 minutes. Everything was recorded with the prior consent of all the participants in the research. The transcripts of the focus group meetings were analysed and interpreted through SWOT analysis which answered the questions of the strengths, weaknesses, opportunities, and threats of project work implementation within ESP classes from the point of view of the students. The full transcripts of both focus group meetings with the analysed results shown further in the SWOT analysis are available in the appendices.

#### 4.7.1 SWOT Analysis as a Tool of Focus Group Evaluation

Focus group SWOT analysis of the students learning English for Specific Purposes through projects is as follows:

**Table 15**

Strengths	Weaknesses
Students' positive attitudes towards projects	Poster
ESP vocabulary extension	Vocabulary
Students encounter project education also in some other classes	

Opportunities	Threats
Students focus on a particular problem. Every student should work on his own topic	Number of projects (presentations) within one class
Stress when presenting in front of the class	Stress and discomfort when presenting
ESP vocabulary extension	Vocabulary

Source: Own research

As we consider the strengths and opportunities to be a positive part of SWOT analysis, we joined the ideas and opinions of the students into one group. Particular opinions and thoughts are based on the recordings realized by the focus group in December 2010.

### 4.7.2 Strengths and Opportunities

Learning and teaching through projects is a strong instrument for more effective education in comparison to the traditional approach. Many authors confirmed this hypothesis.

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#### Students perceive project education positively

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For them it means a more interesting form of study in comparison with the traditional approach. Students become demotivated by a typical textbook in a foreign language class and the book becomes an ineffective instrument.

In recent times, with the popularity of multimedia, it is really difficult to work with a textbook as the main source of knowledge.

Attractiveness and increasing interest can be counted among the strengths of project work. They are forced to be creative and therefore it makes them think differently about a subject.

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### **Students focus on a particular problem**

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Regarding the fact that the students are in mixed groups, from different faculties and even different years of study, it is quite difficult for a teacher to select appropriate topics to cover in English classes.

Project education allows students to focus on their field of interest, or an issue which is in their study field, and at the same time enrich their vocabulary within English for Specific Purposes on the particular topic.

They selected topics according to their study specializations; they did not consider the conditions for project creation to be strict and unreal.

*“I definitely prefer the possibility to give a presentation in PowerPoint.”* This was the most popular opinion. Also, the problem is that many students do not have any idea what a poster actually is, therefore preferring PowerPoint presentations. Features in PowerPoint give students supporting hints and they get help in case they get lost while presenting via the slides in their presentation. Last but not least, there are many great presentation effects and graphics which are not available in a hand-drawn poster and therefore posters are not very eye-catching for students.

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### **Students encounter projects in other classes also**

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Project presentation today is very common at our university. The main aims of a project are to cut down on memorization whilst at the same time to support creative thinking and to learn how to present in front of other people.

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### **Vocabulary extension**

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Students admit that when listening to a presentation they acquire, even unwillingly, new vocabulary which remains in their mind. By working on their own projects, students stated positively that they enriched their vocabulary with a lot of useful words, due to the fact that they had to go through many references, translate some texts in order to understand all the necessary vocabulary, and eventually learn and fix it for the act of performance.

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## Every student should work on their own topic

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The main problem with team work, and also its weakest element, is the student who free-rides off of others' work. This is unfortunately repeated consistently across groups and it is not possible to prevent such matters. The more hard-working individuals in a group do not want to let down the weaker ones and therefore they work for them. The only possible way to get slower students to make an effort is to set the task strictly: every student has to present their part of the project. It is not possible to control whether students work hard on a project or not, but it becomes quite clear when it comes to presenting it.

### 4.7.3 Weaknesses and Threats

#### Poster

The issue has been discussed above. The poster is not interesting from a graphical point of view for our students. They consider the main problem to be the fact that it is impossible for it to include an adequate amount of information.

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#### Number of presentations in one class

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An average presentation should take around 5-10 minutes. A discussion will follow, which in some cases is limited, but usually takes the form of a vivid talk which is the main effect of project education. The discussion depends on a lot of **factors**.

Only the most important ones, those stressed by our students, are mentioned. Firstly, there is **vocabulary**. If a student does not have the adequate vocabulary, they will not be able or willing to engage in discussion. Another factor threatening a discussion is **no interest from the side of the students** listening to a presentation.

The **topic is not interesting** for them and thus they have no reason to respond to a presentation. Psychologically, the most valid reason for having no interest in a discussion was the following reason: "We did not want to make any discomfort to our colleagues and we knew that soon we would be in a role of a presenter." **Students' empathy** with a presenter is

very typical for Slovak students. It could be negatively perceived from the point of view of knowledge. Students do not want to bother their colleagues, but unfortunately they do not realize that they deprive themselves of the possibility to experience a performance which may be part of their profession in the future.

Part of this is a secret cooperation which was seen in the provision of prepared questions by the colleagues beforehand with the aim of satisfying a teacher with the belief that they are able to answer any queries. This is also the moment for pedagogues to work on changing their way of thinking into “How will I react if I do not know how to answer?” It probably needs some time and it will certainly need a change in approach starting at the elementary level of schooling. It could lead to a positive change in approaches at higher grades of education. The last factor is **attention span**. For any individual it can be demanding to focus their attention for a long period of time. Students claimed that the maximum number of presentations should not exceed three per class.

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### **Stress from presenting**

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According to our results, the worst thing for students was to overcome the stress of presenting themselves in front of their colleagues. Everybody has only a certain amount of self-esteem and assertiveness allowing them to give performances to the public.

Students assessed this experience negatively – it was very difficult to present in front of their classmates in English, although some of them admitted that it would be just as problematic to do so in Slovak. Few of them had presented before, so they got used to that feeling of standing in front of an audience. Another disturbing moment for the students was the high number of students in a group. Fewer students in the classroom would be more welcoming.

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### **Vocabulary**

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Students negatively commented on acquiring passive vocabulary. The professional vocabulary they heard had no impact and thus they did not remember it. The problem was also present in the fact that they heard



some specific words only once and then they were exposed to some new words. If a student was from the Faculty of Engineering, the vocabulary they used was not very useful for a student from the Faculty of Agrobiological and Food Resources. However, this is a problem of homogeneity of a group which could not have been influenced at the time of research.

### **Positives and Negatives of Using the Focus Group Method in Research**

In the research at the Department of Professional Language Education at SUA, the focus group meetings had a great impact in reaching the aims. They allowed the researchers to evaluate a new teaching method from the point of view of the students within a reasonable time. It was possible to develop their opinions by asking more detailed questions in order to gain very valuable views on project work in language education. By expressing their attitudes, the students felt important and enjoyed the position of being partners in the evaluation and management of the educational process up to a point. Also, through the discussion the relationship between the teacher and students reached a higher, more open level.

The negative side of the focus group method was that still a lot of students do not openly express their ideas. Some of them are very shy and pretend they have no opinion on the subject which seems to be quite a big problem. Students in Slovakia in general have not been taught or provoked to express their ideas openly from a very young age.

As for the recommendation, the success of a focus group meeting depends on the size of a group. In this case, it should have been lower, maybe then the students would feel more open and communicative. The point, which has been mentioned before, about a moderator who was not the teacher, appeared to be more objective.



## RESEARCH CONCLUSIONS AND DISCUSSION

The design-based research carried out on an ESP course at SUA in Nitra, Slovakia, focused on the use of the CLIL methodology within ESP classes at non-philological universities. It employed two groups of students studying at the specialized faculties of the Slovak University of Agriculture in Nitra. One group was taught through the traditional approach of ELT using a textbook published for the special needs of the students. The syllabus of the ESP course was designed according to the topics discussed in the textbook.

The other group followed the principles of CLIL methodology within ESP classes with the aim to develop communicative competences in English. The projects presented by the CLIL students covered the topics identical to those presented in the textbook used in the first non-CLIL group. The criteria for selecting, processing, and presenting the projects had been agreed on by the students and the teacher during the introductory class of the course.

The communicative competences of ESP courses are defined in the theoretical part and include the register of the specific vocabulary grounded in the professional needs of the students, grammar structures necessary for meaningful use of English, reading comprehension of specific text, and writing skills regarding B1 level according to the CEFR, mainly for the purposes of the future professions of the students.

The main aim of the research was to find out how the implementation of CLIL methodology through project work affects ESP classes in the Slovak University of Agriculture in Nitra, Slovakia. Due to the setting and the quality of the study, design-based research was chosen as the most suitable model for the triangulation.

The design-based research employed a mix of qualitative and quantitative techniques in order to find out the answers to the research questions defined in the empirical part. The evaluation of the content analysis, comparative analysis, and focus group meetings provided the researcher with valuable results to be interpreted and discussed further. The triangulation of the techniques provided the holistic view of CLIL

implementation within ESP context. There are several approaches explaining the growth of ESP as a branch of ELT, however the main difference between them is their concern with specific vocabulary. The triangulation of the results gained from the three supplementary techniques provided the final conclusions on the subject, mainly overlapping on the questions of the use of specific vocabulary in the professional fields within ESP. The whole research can be concluded into the following answers to the research questions.

The research questions with regard to the main aim:

**Research question 1: How does professional vocabulary within the chosen specific topics of CLIL students differ from that of non-CLIL students in their quantity and quality (referring to Coxhead classification of specific vocabulary)?**

Content analysis as a qualitative technique in this case answered the research question on the increase of the specific vocabulary comparing both the CLIL and non-CLIL groups. Coxhead's classification of words ranked into specific fields served as the tool for sorting the specific vocabulary into fields according to their use. In this study, the words used within the five chosen topics covered the professional fields according to Coxhead's taxonomy, i.e. Environmental Science, Technology, and Computer Science.

When comparing the CLIL and non-CLIL groups, the non-CLIL group was exposed to 186 specific vocabulary items offered within all five topics. In comparison, 23 projects from the CLIL students used 473 specific words. In total, there were 78 common words used across the CLIL and non-CLIL groups. The amount of specific vocabulary in the case of the CLIL students almost tripled.

Referring to the specificity of the words used, the non-CLIL group was exposed to the words chosen from the adapted texts offered in the textbook used in the classes. Within the same topics, the CLIL students chose the words for their projects according to their own judgement. They made an effort to find the words they really needed for the purposes of the project, learning them in terms of pronunciation and usage, and explaining them to their peers when presenting in front of the class. Thus, the rules of learner's autonomy, one of the proposed signs of modern education, were followed.

However, the study did not test the acquisition of words. This certainly does not mean that the CLIL students acquired all the words they had been exposed to. The third research technique – the focus group – revealed that the questioned students remembered best the words they had to actively find for the purposes of their presentations.

For added value, the results of the vocabulary part of diagnostic test 2 used in the comparative analysis can be used. The acquisition of the specific vocabulary within the five topics was tested. The vocabulary part of the test (see Appendices) was originally designed for the non-CLIL group in order to find out the acquisition of the words from the textbook used in the non-CLIL group. The statistical values (mean, median, minimum, and maximum) showed that the non-CLIL group reached better achievements in the vocabulary part (see chapter 4.5.3). From the results of that part of the test we can state that the non-CLIL group reached a significantly higher score than the CLIL group in the vocabulary part. This was to be expected, as the non-CLIL group was exposed to the definite amount of vocabulary within the covered five topics. As is evident from the content analysis (see 10.1), within the same five topics, students of the CLIL group encountered not only more words but the specific vocabulary covered in the subtopics was of a greater variety. The results of the t-test confirmed the results interpreted in the descriptive statistics.

To sum up, when comparing the specificity of the terminological content of the CLIL and non-CLIL groups, the CLIL group was enriched with the wider range of specific terminology; however, that does not mean that all the words were acquired by all the students. The specific vocabulary used in the textbook within the chosen topics was higher in the non-CLIL group, however all the CLIL group students answered more than a half of the questions correctly (see chapter 4.5.3 for a detailed look) even though they did not use the textbook in their ESP course.

**Research question 2: How does CLIL influence acquired chosen grammar structures referring to the B1 level according to the CEFR in CLIL compared to non-CLIL classes?**

Comparative analysis, as a technique used in design-based research, aimed to test the chosen language skills at B1 level. One part of diagnostic test 2 was designed to test the acquisition of grammar structures recommended by CEFR at B1 level. The questions in the test were again designed for testing the grammar structures used in the textbook of the non-CLIL group, in concordance with B1 level.

As for the mean scores of the test, we can state that the non-CLIL group reached a higher score which happened due to the fact that the questions in test 2 were intentionally formulated from the textbook used in the ESP course for the non-CLIL group. The fact that the achievements of the CLIL group were going to be lower than the non-CLIL one was expected and was explained in the theoretical part. This is due to the fact that CLIL methodology covers grammar deductively. Thus, the CLIL students during their ESP classes were not exposed to the traditional way

of learning grammar structures, practising grammar exercises, and testing afterwards. The aim of covering the grammar at B1 level according to the CEFR in the CLIL group was to acquire it naturally when working with authentic materials when preparing their projects. However, in the case of any misunderstandings or errors in the presentations, the role of the teacher was to explain and correct the grammar structures necessary for the appropriate level of language proficiency.

**Research question 3: How does CLIL influence reading comprehension (particularly comprehension of specific texts within the chosen topics regarding B1 level according to the CEFR) in CLIL classes compared to non-CLIL classes?**

The reading part of diagnostic test 2 consisted of the text from the professional field with questions testing comprehension. The highest possible score for this part was ten points.

When comparing the achievements of the CLIL and non-CLIL groups, it must be said that the results are very similar, however the CLIL group attained results even a bit higher. As for the illustration, the mean and median values were slightly higher in the CLIL group than in the non-CLIL group.

**Table 16 Comparison of reading comprehension part in diagnostic test 2**

	Non-CLIL	CLIL
mean	8.48	9.05
minimum	5.00	4.00
maximum	10.00	10.00
median	9.00	9.50

In summary, CLIL implementation into ESP classes positively influences reading comprehension of the professional text at B1 level according to the CEFR.

**Research question 4: How does CLIL influence writing skills referring to B1 level according to the CEFR in classes compared to non-CLIL classes?**

In the writing part the students had the possibility to choose from three topics that were covered during their ESP classes and to write a short paragraph. Their written works were evaluated from the point of view of

the format, vocabulary used, and applied grammar structures, following the B1 level in CEFR for writing skill.

The comparisons of the results are seen in the following table.

**Table 17 Comparison of writing part in Diagnostic test 2**

	Non-CLIL	CLIL
mean	7.41	7.52
minimum	1.00	5.00
maximum	10.00	10.00
median	8.00	8.00

The achievements in the writing part were slightly higher in the CLIL group in the mean values; however, the median was the same in the both groups. The students of the CLIL group developed their reading and writing skills during the preparation for the projects via using the authentic materials and therefore it might have been an explanation for their comparable results in those two parts, however the difference was not significant.

**Research question 5: How do students of the non-philological university (SUA, Nitra, Slovakia) evaluate CLIL implementation in ESP classes?**

The theoretical part mentioning the CLIL methodology explains its pros and cons from the point of view of the researchers and English teachers. In this study, the students in higher education were fully involved in the critical evaluation of the CLIL implementation into their ESP classes. The aim was to get the attitudes and opinions on this different approach in ELT classes in terms of the active involvement of learners in the education process. Two focus group meetings were applied in order to get the opinions of the students in the CLIL group after they had finished their ESP course. The two meetings gathered together 45 students and they answered questions from the moderator (see Appendices). The students' comments were recorded and afterwards qualitatively processed via SWOT analysis.

From their comments it was made apparent that they felt responsible for their learning and the project preparation and presentation made them feel important. They had a chance to find their own resources and

authentic materials within the topic close to their specialization. By expressing their attitudes, the students felt important and enjoyed the position of being partners in the evaluation and management of the educational process up to a point. Also, through the discussion, the relationship between the teacher and students reached a higher, more open level.

As for any improvements to project work in ESP classes, students mentioned having the option of choosing from more topics and having only one project per class. Due to the lack of time there were two or three presentations per meeting, which was tiring.

The negative side of the focus group method was that a lot of students still would not openly express their ideas. Some of them are very shy and pretend they have no opinion on the subject which seems to be quite a big problem. Students in Slovakia in general have not been taught or provoked to express their ideas openly from a very young age.

As for any future recommendation, the success of a focus group meeting depends on the size of the group. In this case, it should have been lower, maybe then the students would feel more open and communicative. The point, as has been mentioned, about the moderator not being the teacher, appeared to be more objective.

As far as the hypotheses are concerned, the results are as follows.

**Hypothesis 1: We expect the increase in the professional vocabulary to be higher in the CLIL group rather than in the non-CLIL one,** was confirmed. The results of the content analysis showed that the projects presented by the students in the CLIL group involved a higher number and a greater variety of professional vocabulary than was covered by the textbook used by the non-CLIL group within the same topics.

The aim of the comparative analysis as the only quantitative technique was to compare the results of the two groups. Two testing instruments were used for the following purposes. The standardized placement test set the ground for the design-based research in terms of the same level of English according to the CEFR in both groups. The second test was the researcher's design, a non-standardized test used with the aim to compare the use of specific vocabulary, grammar structures in context, as well as the reading comprehension and writing skills in both groups within the ESP courses. The following hypotheses were formulated at the beginning of our research.

**We don't expect an increase in acquired grammar structure in CLIL classes.**



**We expect that the use of CLIL influences the reading comprehension in specific texts.**

**We expect that the use of CLIL positively influences the writing skill in ESP class,** were confirmed. The comparison of the test results revealed that the CLIL group did not reach the same score as the non-CLIL group. However, the test used for this purpose was intentionally developed for testing the knowledge presented in the textbook used in the non-CLIL group. The difference between the results in the parts of the vocabulary and grammar, and the reading and writing parts were not significantly different.

The focus groups as the qualitative technique used in the design-based research was employed to answer the research question finding out the answer on the positive opinions and attitudes of the students on the implementation of CLIL methodology within ESP classes at the university. The results of the focus group meetings expressed in the SWOT analysis describe the positive and negative aspects from the point of view of the students. The results showed that the students appreciated the use of the project work in ESP classes and evaluated it positively; however, some of the comments were directed towards the improvement of the project work in the course.

By the triangulation of the three techniques, the design-based research answered the main overall question on the positive impact of the implementation of the CLIL methodology within the ESP course at the non-philological university. However, the results of this study should not be explicitly generalized for every ESP course as this design-based research was tailor-made and the data were processed and interpreted for the professional needs of the teachers and students of SUA in Nitra. Further research is necessary in order to find the impact of CLIL methodology application in higher education.

### **Recommendations for further pedagogical practice:**

Based on the results of our research, we recommend several proposals for improving the implementation of CLIL methodology into ESP classes in higher education.

- The topics for projects in ESP classes should correspond with the specialisations of the students, in preparation for their professions.
- Language teachers should cooperate with the teachers of professional subjects in the elaboration and evaluation of the projects.

- Project elaboration should be connected with its real-life professional world; it is possible to involve outside companies in the educational process.
- The students should be engaged in decision making, including suggesting topic selection for projects.
- Cooperation of other vocational universities inside and outside of Slovakia should be supported.
- Project work in language classes should start at the primary and secondary education levels.
- CLIL methodology should be supported and promoted in higher education.
- Learner's autonomy should be reinforced at all educational levels.
- Regarding the elaboration of the projects, students should be taught how to evaluate appropriate authentic materials as well as how to work with them.
- Project work should be part of various techniques used in ESP classes.
- Research on the implementation of CLIL methodology in the educational process at universities should be carried out, also at some other vocational universities, in order to attain conclusions and compare them with the results stated in this study.

## CONCLUSION

CLIL methodology has been successfully used in primary and secondary schools in Slovakia. A number of studies prove its efficiency not only in our country but all across Europe. However, there are only a few records examining CLIL implementation in higher education. Therefore, the aim of our study was to carry out design-based research on ESP classes at the Slovak University of Agriculture in Nitra, Slovakia.

Specifically, the aim of the thesis was to find out whether project work, as one of the techniques of CLIL methodology, contributes towards the development of communicative language skills and an increase in professional vocabulary. Thus, it positively affects the modernisation process of English language teaching in the context of ESP classes in vocational schools. Three methods were involved in the research, and by their triangulation, the findings from individual methods were compared for parallels and supplemented with additional information.

Firstly, the theoretical part of the thesis presents the review of the theoretical background on the topic. Subchapters focus on the main concepts of the work: CLIL, ESP, and project work. They are explained from the point of view of different specialists, scientists, and language teachers. The parallels and connections are defined. In this research, project work is taken as a technique recommended by CLIL methodology used in the context of ESP classes in higher vocational education. Other key concepts, such as learners' autonomy and language communicative competences are analysed and defined. The analysed theory provided a considerable foundation for our research, a good understanding of which was necessary in order to carry out the research. The final chapters of the theoretical parts provide the overview of the current research on the stated topic in various European countries in lower and higher educational schooling institutions.

Secondly, the empirical part presents the procedure of the design-based research employing three techniques, comparative analysis, content analysis, and focus group, in order to reach the aims of the research. The chapter 'Setting and Respondents' describes the background of ESP classes at SUA in Nitra, with the detailed description of the aims of the classes, materials used, and the specialisations that students are prepared for in their future professional lives. Two groups of students are compared

where the CLIL group (81 students) uses project work at ESP classes. Oppositely, the non-CLIL group (23 students) follows a traditional approach, i.e. the use of specialist textbooks consisting of the adapted texts with specific vocabulary and various exercises aiming to develop language competences.

Comparative Analysis being the first technique compares the level of chosen language competences with the help of CEFR descriptors (2001). Two diagnostic tests were used. Diagnostic test 1 compared the initial level of language proficiency in both groups with the aim of providing similar starting points for the students before the implementation of the CLIL methodology. Diagnostic test 2 was designed to test the chosen language competences within B1 level according to the CEFR and the questions were intentionally chosen from the textbook used in the non-CLIL group in order to find out whether the CLIL group was able to successfully acquire the subject matter within the same topics through a different approach. The results of comparative analyses were interpreted quantitatively with the help of descriptive statistics and showed a minimal and statistically non-significant difference in achievements gained by the students of the CLIL and non-CLIL groups. It proved the hypotheses that the CLIL methodology positively influences the development of language communicative competences as well as increases the specific vocabulary in an ESP context.

Content analysis provided another point of view on the increase on the specific vocabulary in both groups. It qualitatively compared the specific vocabulary within the covered professional topics at ESP classes, used in the projects, with the words offered by the textbook used in the non-CLIL group. First of all, it was necessary to classify the specific vocabulary. Coxhead's (Gillet 2011) classification described in the theoretical part provided the framework of the specificity of the words in the ESP context. The subchapters provide a visual, detailed comparison through tables for every topic covered by the CLIL and non-CLIL group. The results of the content analysis showed a significant difference in the amount of specific vocabulary in favour of the CLIL group. However, the author also admits that the technique used analysed the occurrence of specific vocabulary, and that its acquisition should be the subject of further pedagogical research.

The focus groups eventually provided the students' point of view on the implementation of CLIL methodology in ESP classes at vocational universities, especially SUA in Nitra. This qualitative technique was interpreted and concluded in the SWOT analysis which considered the strengths, weaknesses, opportunities, and threats of the use of project

work. The attitudes and the comments of the SUA students in the CLIL group positively evaluated the CLIL implementation; however, they had some valuable comments on some improvements for project work in ESP classes.

Research conclusions are presented in their conclusion subchapters, where the findings of the three techniques were interrelated, combined, and explained. The triangulation helped to get the holistic view on the use of CLIL methodology from different perspectives. The final part also offered recommendations for further educational practice regarding the use of project work as a recommended CLIL technique in higher education.

The topic of CLIL implementation in ESP classes in higher vocational education is relevant in today's multilingual world, especially the need for highly qualified and competent university graduates with opportunities to be experts in their future professional lives.



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## APPENDIX

### TRANSCRIPTS OF FOCUS GROUP QUESTIONS

(M=moderator, S= student, students)

#### **Focus group 1**

**M: How did you find project work in comparison with a traditional approach?**

S: First of all, it was more interesting. Secondly, we were more active than during traditional lessons.

**M: In what way? What exactly did you like?**

S: Mainly the fact, they we worked deeply on one topic and we did not memorize nonsense texts.

**M: Did you have a problem to present?**

S: Mainly, when I saw it for the first time when I started presenting. (irony) author's comment (this boy worked in a team where his colleague accomplished almost the whole project).

**M: What did you like more about project work?**

S: It was not so strict, we had chosen the topic according to our interests and thus I learned what I wanted

**M: Why did all of you use PowerPoint for your presentations? You had more options: poster, comics, ...**

S: It is not possible to put so many facts on a poster, PPT covers all, pictures, texts and it is more exciting.

**M: What would you improve?**

S: I would spend more time on the project preparation.

**M: Were you able to concentrate on presentations of more projects during one class?**

S: More than three were too many.

**M: Did you ask your colleagues questions on the topic of their projects?**

S: Only a few...sometimes there was nothing to ask.

S2: We did not ask because we knew that we would also soon present and we didn't want to make our colleagues feel uncomfortable.

S3: Sometimes we agreed on the questions before the class.

**M: Well, I don't know if that is the fair approach!? What do you think?**

S: I think, it is OK because if someone can answer the question, even prepared one, it means that he/she can respond.

**M: But in real life, you can hardly predict what you will be asked. Was the professional vocabulary a problem?**

S: Definitely yes. I appreciate that in the end of the presentation there was usually a list of new words.

**M: Do you use projects also in some other classes?**

S: Yes, we do. We prepare seminar works and then we present them.

**M: Will you use the vocabulary you learnt in other specialized subjects?**

S: Mainly when we were working with materials for our topics we learnt a lot from our study specialization in English.

**M: What would help you to ease the atmosphere during your presentations?**

S: It was stressful...Maybe if the group was smaller.

## **Focus group 2**

**M: Did you use project work at your secondary schools?**

S: We were writing more seminar works but we rarely presented them and in case we did, it was mostly once a month or never, it depended on a subject.

S2: We put down vocabulary after reading the text and reviewed it.

**M: Do you prefer more project presentation as a way of assessment rather than writing tests?**

S: Presentation is better cause we could have prepared for it.

**M: Was it better to present individually or in a team?**

S: I think everyone prefers it differently.

**M: Was it better for you to study so many new words within one topic rather than cover more topics with a more limited amount of vocabulary?**

S: When I prepare a project, I learn at the same time... but it was worse and more passive when I listen to it.

S2: I made notes after each presentation but then I did not use it actively anymore.

**M: Why did you all present in PowerPoint? You had more options: Posters, Comics...**

S: It is easy and it's standard.



**M: Did you ask your colleagues any questions after their presentations?**

S: Sometimes we listened to more presentations on one topic and there was nothing to ask. S2: We did not want to make it unpleasant and stressful for a presenter.

S3: Some of the topics were simple and general.

**M: Would it be better if everyone had chosen their own topics?**

S: Probably yes.

**M: About your performance... Was it stressful for you?**

S: It is about experience. If you present more often, you are less stressful.

**M: Do you use projects also in some other classes?**

S: Rarely. It would be better if it was more often. If I feel comfortable within a topic, it is not a problem but in English it was stressful for me.

**M: Would you suggest any improvements?**

S: Everyone should choose his/her own topic and work on his/her own.

**M: Was the task division within a team fair?**

S: Yes, we tried to be fair.

**Diagnostic Test 2**

Choose the option which EST fits each space below

**PART 1: Grammar and Vocabulary**

1. Don't forget to take your umbrella. It    (rain).  
a) Rains    b) is raining    c) rained    d) had rained
2. A person who travels to work and back home every day is called  
a            .  
a) driver    b) traveller    c) commuter    d) stranger
3. Did you    to the beach yesterday?  
a) went    b) goed    c) go    d) is going
4. When you finish university level you receive a Bachelor or a Master            .  
a) degree    b) report    c) digri    d) result
5. We        like rap music.  
a) isn't    b) doesn't    c) aren't    d) don't



18. A person who sells you tickets on the bus is a bus \_\_\_\_\_  
a) seller b) conductor c) assistant d) busman

19. What is he \_\_\_\_\_ about?!  
a) talk b) talked c) talking d) was talked

20. She \_\_\_\_\_ understand him.  
a) doesn't b) don't c) wasn't d) weren't

21. Last week I went to work \_\_\_\_\_ -  
a) footly b) on legs c) by walked d) on foot

22. On Thursday I \_\_\_\_\_ golf with Hohn.  
a) am playing b) am played c) was played d) play

23. While she was sleeping we \_\_\_\_\_ our flat.  
a) were cleaning b) were cleaned c) are cleaning d) clean

24. The plane \_\_\_\_\_ at 6,00.  
a) drives b) takes off c) land d) rides

25. To be "green" means  
a) to wear green clothes  
b) to think and act ecologically  
c) to read books about nature  
d) nothing

26. How \_\_\_\_\_ Peter (break/window) on Saturday?  
a) Did Peter break b) was Peter breaking  
c) did Peter broke d) was Peter broken

27. A place where the waste is collected is called  
a) waste dump b) wasteland c) wastehand d) wastegang

28. Passengers should be careful not to \_\_\_\_\_ their tickets until their final destination.  
a) buy b) sell c) dispose d) throw away

29. On the roads there are various like one-way streets, permit-only areas,. These are .....  
a) repulsions b) restrictions c) reductions d) reluctant

30. Growing plants and trees in the city can \_to the overall air quality  
a) contribute b) constipate c) congest d) concord

31. The school\_\_\_at 8,00 tomorrow.  
a) is started b) is starting c) start d) starts

32.\_\_\_\_bring in natural light into your house.  
a) skipass b) skylift c) skylights d) skywindow

33. To deflect light means:  
a) to start shining b) to turn the light to the right only  
c) turn the light to a different direction  
d) to turn the light to the left only

34. How\_\_\_\_\_you\_\_\_\_\_decide?  
a) Did/decide b) were/decided c) were/deciding d) did/decided

35. Here are some practical\_\_\_\_\_for getting the job.  
a) works b) suggestions c) exclamations d) satisfactions

36. The Earth\_\_\_round the Sun.  
a) is going b) go c) has gone d) goes

37. London buses are\_\_\_\_\_ -  
a) green b) blue c) red d) yellow

38. She\_(not/like) pizza.  
a) isn't like b) doesn't like c) don't like d) don't liked

39. In London there are two types of bus stops – normal and\_\_\_stops.  
a) quest b) question c) request d) please

40. opposite of rural is \_\_\_\_  
a) urban b) hurban c) inrural d) dirural

41. Where\_\_\_\_\_you last night?  
a) was b) were c) did be d) did is

42. Purchase of plants means.....  
a) to sell plants b) to buy plants c) to harvest plants d) to eat plants

43. While you were sleeping I\_\_\_\_\_
- a) was working b) had working c) is working d) were working
44. I cannot answer the door. I\_\_\_\_\_(have) a bath.
- a) have b) am having c) has d) have had
45. She was **an**\_\_writer.
- a) youngb) experienced c) grown-up d) quite old
46. At the airport you are waiting for a friend in an...
- a) departure hall b) departure gate c) arrival hall d) arrival exit
47. At your destination you\_\_\_\_\_the bus
- a) get away b) get off c) get of d) get in
48. This term I\_\_English.
- a) studied b) had studied c) am studying d) was study
49. A long-distant bus is called a\_\_
- a) couth b) coach c) double-decker d) longybus
50. Our teacher ..... that this test is easy.
- a) thinking b) thinks c) is think d) was thinking

...../50 points

## Part 2: Reading and Comprehension

### HOMEOPATHY

You could try homeopathy. Homeopathy has two main beliefs. Firstly, homeopaths believe that you should treat symptoms, not the disease. A homeopathic doctor looks at the whole person in order to decide which medicine to give. Homeopaths also believe you only need a very small amount of medicine to get better.

A typical session with a homeopathic doctor lasts about an hour. He or she asks you about your medical history, your family's medical history and your personality. Homeopathic medicine is usually in the form of small tablets to put on your tongue.

Millions of people around the world say that homeopathy works for many kinds of illnesses. It is especially useful for skin problems. The only possible disadvantage of using homeopathic medicine is the cost. A typical session costs around £in the UK. There are no side effects and it is safe for everyone, including babies.

**Mark sentences True (T) or False (F)**

1. Homeopathy should cure the illness not symptoms.  
T/F
2. The doctor-homeopath gives you big doses of pills.  
T/F
3. An appointment with the doctor usually takes 60 min.  
T/F
4. Homeopathic drugs are appropriate mainly for skin problems.  
T/F
5. Homeopathic treatment is cheap.  
T/F

...../5 points

**Match the synonyms with the words from the text**

- a) Illness            b) price            c) indications    d) secure  
e) drawback

Symptoms	
disease	
Disadvantage	
Cost	
safe	

...../5 points

### **PART 3: Writing**

Please, choose one of the following topics and write a short paragraph (15 sentences)

**Topic 1: What do you like and dislike about the transport in your town (or Nitra)?**

**Topic 2: What can we do to make our planet “greener”?**

**Topic 3: Describe your life in 10-years’ time (your professional and private life)**

...../10 points

**Final Score .....out of 70 Points**

## **Project Evaluation Form**

Name \_\_\_\_\_ Name of the project \_\_\_\_\_

1. *I spent approximately \_\_\_\_\_ hours/days on this project, including the presentation and paper.*

2. I think/don't think that my partner deserves equal (50%) credit on the project work.

If not, he/she deserves

Less \_\_\_% or More \_\_\_%

3. I learned the following from this project:

4. I used these sources (the Internet, books, magazines, interviews, etc.):

5. Underline what applies to you.

*I found the preparation of the project:*

**Very interesting/ interesting/ not very interesting/totally uninteresting**

My personal opinion on using projects in the English class:

6. Any other comments:

7. I think I deserve the following grade from this project:

A, A-, B+, B, B-, C+, C,, D+, D, E, FX \_\_\_\_\_

### PROJECT ASSESSMENT

PROJECT TITLE:			
NAME AND SURNAME OF STUDENT/STUDENTS:			
ASSESSOR:			Total number of points:
	Evaluated parts of the project	Characteristics	Points:
1.	<b>Form</b> 20 points	Project layout (clarity, purposefulness, logic) Grammar - Language used in the project - punctuation, spelling. - Formal design: technical side of presentation (slides – heavy, legible, clear. - Supporting visual materials: pictures, examples.	
2.	<b>Content</b> 30 points	Informative function (authenticity, quantity of info, scope of info, connection to the topic) Creativity (creative processing of info, reasoning and argumentation, understanding of problematics)	



3.	<p><b>Presentation of the project /performance</b> 30 points</p>	<p>- Formal side (performance – appearance, respect to the audience, eye contact, body language, pronunciation, intonation, engagement)</p>	
4.	<p><b>Project Defence</b> 20 points</p>	<p>- orientation in the topic, readiness to respond to the questions given from the audience - a level of reasoning and argumentation</p>	