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CLIL Research in Slovakia

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Introduction

CLIL methodology has been applied in Slovak primary schools for more than 10 years. In Slovak context, it has been seen as an acceptable compromise between a too-demanding bilingual education (when selected subjects are taught in a foreign language) and a relatively traditional approach to foreign language education where foreign languages are taught as individual academic subjects (rather separated from everyday life), not rarely with questionable results. These are the reasons why CLIL has been given its space in the current concept of foreign language teaching in Slovakia (*Koncepcia...,* 2007) and is continually promoted by the Ministry of Education.

The aim of the monograph is to summarize and critically evaluate recent outcomes of CLIL research conducted within the regional context of the Slovak educational system. After the introductory chapter where a general characteristics of Slovak experience with CLIL on all levels of education (primary, secondary and tertiary) is given, the second chapter focuses on meta-analysis of research projects and their interpretation within a narrower national and a wider international context over the last 5 years. The second chapter covers five fundamental areas of CLIL research: analysing learners´ attitudes toward CLIL, measuring CLIL learners´ learning outcomes, detecting CLIL teachers´ attitudes, identifying their professional needs, and analysing CLIL classroom interaction. As a conclusion, suggestions for future research topics and procedures are mentioned.

The monograph was designed as a complex revelatory case study, since the defined research topic has not been previously studied and its purpose was "an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence" (Robson, 2002, p. 178). The text of this book contains some information and

analysis, which have been presented earlier in numerous conferences and published in journals or conference proceedings. The list of the published outcomes which were used and re-edited is given at the end of the book.

There are a lot of people who helped me and supported my work and whom I would like to thank. First of all, I need to mention the authors of analysed research projects who agreed with meta-analysis and provided me with copies of their works. Second, I am grateful to the reviewers of the book, prof. Eva Malá and prof. Jaroslav Kušnír, for their valuable comments, which in many cases, helped sharpen the ideas and make the text more comprehensible. Third, I would like to express my gratefulness to Phil Le Mottee, the incredibly patient and flexible proof-reader whose comments helped improve the quality and style of the text. And finally, I love and admire my family - my three men - for their never-ending love, support and assistance, without which, none of my works would exist.

Author

List of abbreviations

CA-CLIL	Computer-assisted content language integrated learning
CEFR	Common European Framework of Reference
CLIL	Content language integrated learning
DPT	Draw a Person Test
EU	the European Union
FLST	Foreign Language Skills Test
FG	a focus group
L	a learner
LL	Learners
LLIL	literature and language integrated learning
MCI	My Class Inventory
PIT	Picture Intelligence Test
SEN	special educational needs
T	a teacher
TT	teachers

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1 CLIL in Slovakia: A decade-long teaching and learning experience

Slovakia is a small post-communist country in Central Europe. Until 1993, Slovakia was a part of Czechoslovakia. On January 1, 1993 Slovakia became an independent nation recognized by the United Nations and its member states. After the breakup of Czechoslovakia (as one of the consequences of the "Velvet Revolution" in 1989), Slovakia reformed all its public systems including the school system. In 2004, it became a member state of the EU and as such, it needed to adopt principles of the united European legislation on education (e.g. "M+2" rule, according to which each European citizen should be able to communicate in his/her mother language and at least two other languages). This repeatedly led to numerous system changes in the Slovak educational system.

The school system of the Slovak Republic nowadays includes 7 types of schools:

a) nursery schools (for children from 3 to 6 years);
b) primary schools (for children from 6 to 15 years, divided into two levels: primary education and lower secondary education);
c) grammar schools (with either 4-, 5- or 8-year study programmes);
d) secondary vocational schools (with 2-, 3- or 4-year study programmes);
e) conservatories;
f) schools for learners with special educational needs;
g) elementary art schools;
h) language schools.

The Slovak Republic is inhabited mostly by ethnic Slovaks (app. 85% of population). Consequently, the mainstream instructional language at schools in Slovakia is a state language,

i.e. Slovak. About 10% of inhabitants are ethnic Hungarians (especially in the south-western part of the country near borders with Hungary). The rest of the population (app. 5%) includes also Czech, German, Ukrainian, Romany, Polish, Jewish and Ruthenian minorities.

Compulsory education in Slovakia lasts for 10 years. Most primary and secondary schools are public (up to 90%). The rest are private schools owned either by churches or private owners.

Secondary vocational schools prepare students for all types of occupations. After finishing any 4-year secondary school study programme, students may take a school-leaving exam ("maturita"). Grammar schools are generally considered as "elite" or "prestigious" because of their more academic-oriented study programmes and their intention to prepare students for university and higher education study. Higher education is provided by public, state, and private universities or colleges. The latest observable trend in the Slovak education system is the growing number of students who choose to study at universities and colleges abroad.

As for language education, Slovak (as the only one state language) is a compulsory language for all learners. Members of ethnic minorities have the right (anchored in the Constitution of the Slovak Republic, Law 460/1992, head 34, § 2) to be educated in their own mother language. To fulfil this right, the network of 349 primary and secondary schools (12.08% of all primary and secondary schools in Slovakia) where minority languages are used as either first or second languages of instruction in majority of subjects has been created (Law 245/2008). The structure of schools providing education in minority languages in the school year 2012/13 is published in Tab. 1. The numbers presented in the table were processed from the latest statistical data updated and published on 25 March 2013 by the Institute of School Information and Prognostics (UIPŠ, 2013).

Tab. 1: Slovak schools providing bilingual education in minority languages in 2012/13 (Source: Pokrivčáková, 2013a)

Language of instruction	Primary schools	Grammar schools	Secondary vocational schools	Total
Slovak	1900	167	418	2485
Slovak-Hungarian	27	7	31	65
Slovak-Ukrainian	0	0	0	0
Hungarian	238	19	10	267
Ukrainian	5	1	0	6
Other*	7	4	0	11
Total	2177	245	468	2890

Notes:
* The language was not specified in the data source.

In addition to the education provided in the state language and in minority languages discussed above, the Slovak legislation also provides for education in a foreign language (only six languages may be taught as foreign languages in Slovakia: English, German, Russian, French, Spanish, and Italian). The only type of bilingual education that is terminologically recognised as (truly) bilingual by the Slovak school legislation (Act on Schools, Law 245/2008, § 6) corresponds to the model: "a state language supplemented with a foreign language".

As for instructional languages, nearly half of 56 Slovak bilingual schools combine a mother language with English (27 schools, i.e. 48.21%). Six schools (10.71%) organize bilingual education in Spanish, four (7.14%) in French, and other four (7.14%) in German (see Tab. 2).

Tab. 2: Languages integrated in bilingual education at primary and secondary schools (Source: Pokrivčáková, 2013a)

Lang. of Instruction	Primary			Grammar schools			Business academies			Total
	pu.	pr.	total	pu.	pr.	total	pb.	pr.	total	
S – E		2	2	8	17	25			0	**27**
S – G				2		2	2		2	4
S – Sp				6	0	6			0	6
S – I				1		1			0	1
S – R				1	1	2				2
S – F				4		4				4
S – o				1		1				1
E	1	2	3	1	2	3				**6**
G	1	1	2		1	1				3
B		1	1		1	1				2
Total	2	6	8	24	22	46	2		2	56

Legend:

pb. – public, pr. – private, B – Bulgarian, E – English, F – French, G – German, I – Italian, R – Russian, S - Slovak, Sp – Spanish, o – other (not specified in the primary source)

Since "teaching bilingually" at bilingual schools usually means teaching at least three content subjects exclusively in a foreign language (i.e. for 100% of teaching time) either by native or non-native teachers, bilingual education is considered too challenging and demanding for majority of learners and is recommended only to excellent, highly motivated students with above-average intellectual skills and language aptitude.

To bring benefits of bilingual instruction to as many learners as possible, a method of CLIL (content language integrated learning) was emerged in Slovakia shortly after 2000. Instead of teaching content subjects in foreign languages for 100% of the teaching time, CLIL promotes mixing the mother language and the foreign language within lessons. In Slovak tradition, the teaching time in a target language is usually limited to a

maximum of 50%. It is believed that such an approach gives learners a chance to develop their cognitive skills effectively, as well as academic terminology and academic communicative competences in both languages.

The CLIL method, which covers all forms of teaching academic, artistic, technical and vocational subjects through teaching a foreign language, which is not the mother tongue for most pupils and is not used as an official language in the country the learners are living in, has been applied in Slovak mainstream schools for more than 10 years. The initiative to use it mostly came from school management bodies and also teachers (through Comenius and other projects aimed at innovations in education). The decision to apply CLIL by the schools´ involved is generally well supported by parents, who believe that any form of bilingual education (and most importantly the early bilingual education at primary schools) will result in early and a high quality communicative competence of their children in a foreign language. On the other hand, for school management bodies and teachers, CLIL (with its maximum ratio of 50% use of a foreign language) is usually more acceptable than "traditional" bilingual education when 100% of teaching time of selected subjects was taught in a working language, due to the following reasons:

- there is less pressure on school management to hire only teachers with excellent foreign language proficiency;
- "traditional" bilingual education might be too demanding for some learners (mostly for those with lower communicative skills and special educational needs);
- CLIL, with teaching time in a target language limited to a max. of 50%, does not "endanger" the dominant position of a mother language and one of the main objectives of primary education, i.e. to develop elementary literacy in a mother tongue, the foreign language having a function of a secondary, added, additional language;
- CLIL appropriately prepares learners for secondary education in both a mother and foreign language, since learners do not lack specialized terminology and academic-discourse expressions in either of them.

As for a national educational legislative, no formal framework or methodological instructions have been formulated yet. However, the CLIL method has been cited as one of the most progressive methods of teaching foreign languages and therefore it has been recommended as the most effective method by the currently valid concept of foreign language teaching in Slovakia (*Koncepcia*…, 2007).

The main reasons why the Slovak Ministry of Education has recommended the CLIL method to be applied by as many schools as possible might be summarized as follows:
- learners are involved in contextualised tasks;
- hey use the foreign language in meaningful communication and in natural conditions (they really communicate, they do not use the language in artificially elicited situations);
- pupils´ primary attention is focused on the content of communication, not on the foreign language which they want to use for communication (this significantly removes their potential fear of errors), which brings them closer to real life conditions of communication;
- application of integrated approaches requires that pupils must use their life and school experience (including interdisciplinary knowledge);
- intensive development of other than just foreign language communication competences (intercultural, aesthetic, etc.) is expected as well.

Despite the Ministry´s support, the recent research outcomes proving better learning results of CLIL learners (Gondová, 2012a; Menzlová, 2012), as well as a still growing popularity of the CLIL method among parents and schools, there remain disincentives and weaknesses which may be identified when the existing experience with CLIL in Slovakia is evaluated (c.f. Pokrivčáková, 2012a):
- In regards to CLIL lessons, some crucial aspects of teaching and learning are left unexplained or "un-refined" (e.g. vague assessment procedures, lack of standardized evaluation instruments).

- Psychological and cognitive effects of CLIL are usually explained intuitively, and since they have not been studied appropriately, there seems to be a lack of reasonable empirical research findings.
- Teachers and schools find it difficult to set the balance between teaching content and a foreign language. This may be well illustrated by the inability of teachers to formulate and integrate both language and content objectives at the same time (as Gondová, 2012b, has maintained).
- If not applied appropriately, CLIL becomes too difficult and de-motivating for some groups of learners (learners with special educational needs and learners with limited proficiency in first language of instruction, e.g. Slovak).
- In Slovakia one may witness a lack of qualified teachers prepared to apply CLIL. As proved by many studies, CLIL is easiest to apply for subject teachers with appropriate language competencies to teach a subject using a foreign language. However, there are not many such teachers and some researchers predict it will be necessary to wait for at least another 10 years before universities will have trained sufficient teachers to have a good command of foreign language and subject knowledge.
- Content subject teachers applying CLIL are not trained in, or even informed about, the basic principles, objectives and teaching techniques of developing foreign language communicative competences, which makes it impossible for them to provide learners with sufficient language support (c.f. Gondová, 2012b).
- In Slovakia, there is no formal net of CLIL applying schools and teacher training institutions, including universities, which would enhance sharing CLIL experiences and examples of good teaching practice.

Primary education
If compared with the situation in other countries, it might be safe to say that developments in the application of CLIL in Slovakia and its contemporary status copy the progress of CLIL in other countries, as summarized, for example, by Lasagabaster

& Sierra (2009) or Dalton-Puffer (2011). Thus the application of CLIL in Slovak primary schools may be characterized as follows:

1. In Slovakia, CLIL is applied in both bilingual and mainstream schools.
2. Most schools which apply CLIL integrate teaching content subject with teaching English as a foreign language. The second most frequent foreign language is German. Only a few schools apply CLIL in Spanish and French (which are taught alternatively with Russian and Italian as second foreign languages).
3. So far, there has been no evidence proving that CLIL is used also to integrate learning content subjects and learning second languages (Hungarian, Ukrainian or Romany).
4. Dalton-Puffer in her meta-analysis claims that CLIL is typically implemented "once learners have already acquired literacy skills in their mother language, which is more often at the secondary than a primary level" (2011, pp. 183-184). On the contrary, Slovak schools, having decided to apply CLIL, usually start with CLIL at primary level of education along with the beginnings of teaching a target language.
5. Based on the structure of Slovak schools, CLIL in Slovakia is typically applied in monolingual classes with a non-native teacher for whom, as well as for learners, the working language is a foreign language.
6. In Slovakia, there are no statistics documenting the ratio of target language teachers and content subject teachers apply using CLIL.
7. The additive type of CLIL is dominant. The first language of instruction is the learners´ mother tongue, while a foreign language is used only in some lessons, for teaching some topics or some subjects.
8. The CLIL teaching time in a target language never exceeds 50% of total teaching time; moreover, the average duration of "CLIL activities" is usually 30% of a lesson.
9. At bilingual schools and non-bilingual CLIL schools, CLIL lessons are usually timetabled as content subject lessons (e.g. mathematics, biology, geography, arts etc.) and are taught by teachers qualified to teach content subjects (but

not a target language). A target language is taught also as an independent curricular subject (alongside CLIL lessons) for 3 lessons a week.

10. In addition, non-bilingual CLIL schools usually timetable some portion of CLIL lessons as foreign language lessons (3 lessons a week) within which some selected topics are taken from content subjects and introduced in a target language.

11. If compared to the spread of secondary and tertiary CLIL, primary CLIL occurs most frequently in Slovakia and consequently, attracts attention of most researchers (Farkašová, 2012; Hurajová, 2012, 2013; Kubeš, 2012, 2013; Luprichová, 2011, 2013; Menzlová, 2012; Pokrivčáková, 2013a, 2013b, 2013c; Sepešiová, 2013). It is safe to conclude that primary CLIL in Slovakia is well developed and supported by diverse research.

Secondary education

Secondary CLIL in Slovakia is being developed along two lines: CLIL applied in academic subjects at bilingual and mainstream grammar schools (their situation may be characterized as nearly identical to primary CLIL) and profession-oriented CLIL at secondary vocational schools. The situation in CLIL regarding lower secondary level of education and at bilingual secondary schools was analysed by Gondová (2012a, 2012b). CLIL at vocational secondary schools was studied by Škodová (2011) and Veselá (2012). In spite of many expected positive impacts of CLIL in secondary education (both general and vocational), the number of secondary schools applying CLIL is much lower than the number of primary schools. Moreover, the research studies were so sporadic that they have not built a basis for any complex or comprehensive research.

Tertiary education

One of the aspects of globalization in tertiary education is a growing number of study programmes with English as the medium of academic communication and teaching instruction (c.f. Ammon, & McConnel, 2002; Björkman, 2011; Carroll-Boegh,

2005; Kirkpatrick, 2011; Phillipson, 2006 and others). As one of its side effects, this increase is accompanied by the spread of CLIL method. Its various aspects and effects were investigated in numerous research studies (Airey, 2009, 2011, 2013; Ball, & Lindsay, 2013; Balla, & Pennington, 1996; Björkman, 2011; Dafouz et al., 2009; Doiz, Lasagabaster, & Sierra, 2012; Evans, & Green, 2007; Findlow, 2006; Flowerdew, Miller, & Li, 2000; Jensen, & Thøgersen, 2011; Kiil, 2011; Kirkgöz, 2005; Kurtán, 2004; Wilkinson, 2004 and others)

Although tertiary CLIL is the least studied level of CLIL in Slovakia, there have been several research studies discussing its various aspects as well (Kováčiková, 2012a, 2012b, 2013).

2 CLIL research in Slovakia (General outline)

At the international level, CLIL research has seen rapid development recently (c.f. Breidbach, & Viebrock, 2012; Coyle, 2007; Dalton-Puffer, 2008, 2011; Pérez-Cañado, 2012; Wannagat, 2009; Zydatiß, 2005). During the last two decades, it has undergone some fascinating growth both in extent and quality. One could recognise six main directions here (c.f. Pokrivčáková 2012, p. 67-74):

a) **learner-based CLIL research** focuses on studying the influence of CLIL on learners´ psycholinguistic characteristics and learning outcomes in general;

b) **teacher-based CLIL research** is interested in specific professional characteristics and teaching competences of CLIL teachers;

c) **language-based CLIL research** takes a close look at various ways in which mother and target languages are used and combined in CLIL lessons and at the outcomes of such combinations (e.g. code-switching);

d) **content-based CLIL research** concentrates on various ways in which the content of education is coded in a target language and on how learners´ content-learning outcomes are affected by CLIL;

e) **context-based CLIL research** studies the occurrence and importance of various national, cultural and other external factors on the effectiveness of CLIL.

So far, CLIL research in Slovakia has focused on the first three areas through the following forms:

a) 5-year national pedagogical experiment entitled *Effectiveness of CLIL in Teaching Foreign Languages in Primary Education* (2008-2012; ID CD-2008-9077). The project was administered by the State Pedagogical Institute and funded by

the Slovak Ministry of Education, measuring the learning outcomes of 361 CLIL learners from 20 primary schools around Slovakia (the details of the experiment and its results are discussed later in respective chapters).

b) Cultural-educational projects

The main objectives of the two research projects funded by the Slovak Ministry of Education, Research and Sport - KEGA 3/3036/05 *Innovations in Training of Foreign Language Teachers: CLIL and LLIL* (2005-2007) *and* KEGA 3/6308/08 *Content Reform and Modernisation of Teaching Foreign Languages in Primary and Secondary Schools: Creating Conditions for Effective Application of the CLIL Methodology* (2008-2010) included updating teachers on the information regarding recent trends and procedures, the development of teaching materials understood as an inevitable starting point for efficient implementation of CLIL methodology at Slovak primary and secondary schools, and, finally, publication of a set of scholarly works and teaching handbooks for foreign language teachers and trainee teachers aimed at theoretical and practical aspects of CLIL methodology.

The outcomes of the above mentioned projects were further developed by the activities of the project KEGA 094-024UKF-4/2010 *Integration of Foreign Language Teaching Methodology CA-CLIL into Continuous Teacher Development at Secondary Vocational Schools* (2010-2011) which verifies efficiency of combining CLIL methodology with CALL approach. The project results were summarized and published by Veselá et al. (2011).

A group of researchers working at Žilina University have been working on the project KEGA-085ŽU-4/2011 *Developing Learners´ Higher Cognitive Functions in Integrated Learning* (2011 - to be concluded in 2013). Partial results of the project were published in Kráľová (2012).

CLIL is also one of the topics incorporated into a recently approved and funded project KEGA 036UKF-4/2013 *Creating University Textbooks and Multimedia Courses for New Study Programme* (2013 – to be concluded in 2015). One of the project team´s objectives is to observe the current situation at the

schools applying CLIL, to summarise the latest examples of good teaching practice and provide foreign language teachers and teacher trainees with a university textbook, a multimedia course on CLIL and a set of ready-made teaching materials for CLIL classes.

c) Individual (usually academic) research

The influence of CLIL on learning outcomes of 4th-grade CLIL learners was studied by Kubeš (2012) and Luprichová (2013). Research focused on analysing the quality of interpersonal and language interaction in primary CLIL classes was carried out by Králiková (2013). Finally, the teacher-based research into specific competences of non-native (Slovak) teachers needed for effective application of CLIL was conducted by Hurajová (2013) and Sepešiová (2013). Last, but not least, learning outcomes of university students who learn vocational English through CLIL method were studied by Kováčiková (2013).

Research results dissemination

Annual joint international conferences and methodology workshops (for researchers, academics, school managers, textbook authors, and teachers from primary and secondary schools), entitled *Foreign Languages and Cultures at School,* focusing on CLIL methodology as one of their constant and regular topics, became a general platform for disseminating latest research results and examples of good practices. The conference papers and workshop presentations are periodically published in conference proceedings (available on CD and as on-line publications). In addition, Slovak CLIL research results were disseminated through monographs (Gondová, 2012a; Horváthová, 2009; Kováčiková, 2012a, 2012b; Králiková, 2012; Luprichová, 2010, Pokrivčáková et al., 2008; Pokrivčáková, 2011; Škodová, 2011; Veselá, 2011, 2012), as university textbooks (Gondová, 2013a; Pokrivčáková, 2010;), studies published either in research journals (Gondová, 2012b; Horváthová, 2013; Pokrivčáková, 2013a, 2013b, 2013c) or conference proceedings (Farkašová, 2012; Hurajová, 2007, 2012; Kubeš, 2013; Kuklová, & Malá, 2008; Luprichová, 2011, 2012a, 2012b; Menzlová, 2012;

Miština, & Kozík, 2010; Pokrivčáková, 2009, 2012a, 2012b, Reid, 2013; Sepešiová, 2010a, 2012b, 2012c), and teacher handbooks and manuals (Gondová, 2013b; Sepešiová, 2010b, 2012a; Žemberová, 2010).

3 Learner-centred CLIL research

The basic principles of the CLIL method place it among the other students-centred pedagogical methods and approaches; therefore, research which focuses on various aspects related to characteristics and actions of CLIL learners has been the central focus of CLIL research. Internationally, most learner-centred CLIL research studies concentrate on investigating pedagogical effects of CLIL and its related learning outcomes (e.g. Admiraal at al., 2006; Dalton-Puffer et al., 2008; Gallardo del Puerto et al., 2009; Hüttner, Riede-Bünemann, 2010; Järvinen, 2010; Jexenflicker, Dalton-Puffer, 2010; Llinares, Whittaker, 2010; Lo, Murphy, 2010; Lorenzo, Moore, 2010; Maillat, 2010; Mewald, 2007; Moore, 2009; Ruiz de Zarobe, 2008, 2010; van de Craen et al., 2012; Zydatiß, 2007; and others). Projects which are incomparably scarcer in number, concentrate on identifying learners´ attitudes towards CLIL or on studying the effects of CLIL on their affective functions, including attitudes, expectations, experiences, opinions, motivation, etc. (e.g. Balla, & Pennington, 1996; Dafouz, Núñez, Sancho, & Foran, 2007; Hunt, 2011; Kirkgöz, 2005; Lasagabaster, & Sierra, 2009; Morrell, 2007; Papaja, 2012; Troudi, & Jendli, 2011; Wenger, 2012 and others).

Slovak researchers contributed to both of these strands. The research into learning outcomes is represented by the works of Menzlová (2012), Kubeš (2012) and Luprichová (2013). Learners´ attitudes towards CLIL were studied by Gondová (2012a) and Luprichová (2013). Moreover, Farkašová (2012) contributed with the psychological measurement of CLIL learners´ motivation and their feeling of comfort.

3.1 Learning outcomes research

Dalton-Puffer´s (2011, p. 186) general conclusion regarding international CLIL research, claiming that "most of the research on outcomes is in the area of attainment in the CLIL language", is valid for Slovak context as well. All three of the Slovak research

projects discussed in this section are focused primarily on analysing the effects of CLIL on learners´ proficiency in the second instructional language (English in all three cases).

The projects were designed as pedagogical experiments, since it is the only way to measure effectiveness of a teaching method or any other element of education processes, and to prove causal consequences of one pedagogical phenomenon on another. Other research methods can only identify relationships between pedagogical phenomena without proving whether these relationships are definitely of causal quality (Gavora, 2010).

The first experiment entitled *Effectiveness of CLIL in Teaching Foreign Languages in Primary Education* (2008-2012; ID CD-2008-9077) was administered by the State Pedagogical Institute and funded by the Slovak Ministry of Education. It was designed as a 5-year national pedagogical experiment at primary level of education. Its main objective was to measure effectiveness and prove "applicability" of CLIL at Slovak primary schools, starting from the first year of learners´ school attendance (normally, primary learners start learning their first foreign language in the third year). The project was based on measuring and comparing the learning outcomes of 361 primary learners from 22 primary schools throughout Slovakia. The experimental group consisted of 236 CLIL learners from 20 schools and a controlled group of 125 learners. Learners from both groups studied at the same schools as CLIL learners (which is the procedure frequently used in CLIL research); however, two CLIL schools involved in the experiment did not provide non-CLIL classes (they did not have any!) so the number of learners in the controlled group was supplemented with learners from two non-CLIL schools with characteristics as similar as possible to the schools they supplemented.

The CLIL method was applied in two content subjects: Science and Maths with options of English or German as the second languages of instruction. Learners´ foreign language proficiency was tested at the end of each school year (June 2009, 2010, 2011, 2012, 2013) in the following areas: vocabulary (both active and passive), listening, reading and writing skills. The comparison of knowledge levels in content subjects (Science and Maths) was

not incorporated into the interpretation of final results. The pilot and partial results were published by Pokrivčáková, Menzlová, Farkašová (2010) and the final results by Menzlová (2013).

The experiment´s results confirmed initial expectations drawing on many other similarly focused research studies. In general, CLIL learners manifested significantly better learning outcomes in all observed areas (see Tab. 3). Based on the results of this national experiment, a new experimental analysis of CLIL on lower secondary level of education will start in May 2014.

Tab. 3: The pedagogical effect of CLIL on working languages proficiency of CLIL learners – the national experiment data (Source: Menzlová, 2013)

	group	N	Min	Max	AM	SD	t	p
Task1	experimental	236	0	5	3,85	1,26	**8,198**	<0,001
L	control	125	0	5	2,50	1,83		
Task 2	experimental	236	0	6	5,29	1,45	**7,489**	<0,001
L	control	125	0	6	3,78	2,38		
Task 3	experimental	236	0	6	3,87	1,82	**9,886**	<0,001
R/V	control	125	0	6	1,91	1,74		
Task 4	experimental	236	0	6	5,44	1,37	**7,351**	<0,001
V	control	125	0	6	3,92	2,56		
Task 5	experimental	236	0	14	9,63	3,70	**10,435**	<0,001
V	control	125	0	14	5,06	4,42		
Task 6	experimental	236	0	7	4,24	2,14	**8,984**	<0,001
V	control	125	0	7	2,10	2,17		
Task 7	experimental	236	0	4	2,94	1,20	**7,326**	<0,001
R	control	125	0	4	1,86	1,53		
Task 8	experimental	236	0	21	5,57	3,86	**9,328**	<0,001
W	control	125	0	9	2,03	2,42		

Legend:
L – listening task, R – reading task, V – vocabulary task, W – writing task; min = minimum score reached in the task, max = maximum score reached in the task, AM = arithmetic mean

Another experiment, which was conducted by Kubeš (2012), in regards to the effects of CLIL on foreign language proficiency, this time in primary math lessons. Kubeš presumed that one lesson of primary math taught in English would significantly bolster learners foreign language competences (namely: speaking, listening for comprehension, reading for comprehension, and writing) in comparison to the learners who learn math monolingually in Slovak. Kubeš also presumed that the exposure of learners to one lesson of math in English (in ratio 1:3 lessons of math in Slovak) will not lead to significantly lower levels of mathematical knowledge compared to the learners from control groups. Kubeš´s experiment lasted for 5 months and involved one experiment and two control groups – three classes from the same urban school in Bratislava. The first hypothesis was refuted by the experiment data, because in fact, learners from the experimental group gained worsened scores in final testing of language skills (see Tab. 4).

Tab. 4: The pedagogical effect of CLIL on working language proficiency of CLIL learners (%) - Kubeš, 2012

Group	N	arithmetic mean	standard deviation	standard error arithmetic mean
Control group 1	8	.0052	.07057	.02495
Control group 2	11	.0123	.07301	.02201
Experimental group	13	-.0604	.08068	.02238

The second hypothesis was supported, although the experimental group also achieved worse scores in the mathematical test. However, the decrease in their scores was not statistically significant (see Tab. 5).

Seeking potential reasons behind the refuted results of the first hypothesis, Kubeš referred to the insufficient size of the experimental and control groups, the short duration of the experiment, and a worsened relationship between the experimental group and their regular teacher of mathematics.

Tab. 5: The pedagogical effect of CLIL on math knowledge of CLIL learners (%) - Kubeš, 2012

Group	N	Arithmetic mean	Standard deviation	Standard error
Control group 1	14	.0786	.15777	.04216
Control group 2	13	.0077	.16564	.04594
Experimental group	12	-.0417	.15050	.04345
Total	39	.0179	.16201	.02594

While we do not challenge any of these risks, our analysis of the teaching procedures and the teaching materials designed for the experiment (worksheets) pointed to a more likely reason: the predominant method that was used to introduce and fix academic and non-academic vocabulary in the experiment was translation (see Fig. 1) leading to a dominant rank of decontextualized tasks.

Fig. 1: An example of a decontextualized task: the learner needed to translate nearly all words to be able to complete the task (source: Kubeš, 2012).

Luprichová (2013) followed the same objectives as Kubeš (2012), designing the experiment to measure the effect of CLIL on 4th-graders´ language competence in English as the second language of instruction and their knowledge of content subject (Science). She assumed that CLIL learners in the experimental group would significantly improve their communication skills in English in comparison to the learners from the control group (Hypothesis 1), and that CLIL learners would achieve significantly better learning outcomes in Science in comparison to the learners in the control group (hypothesis 2). 44 learners from a small urban school in Košice were engaged in the experiment. All of them (both cohorts of learners) learned English as a foreign language (2 lessons a week) and were taught by the same teacher using the same English textbook. Respecting their regular school schedule, the Science lessons were taught once a week. In both subjects, CLIL learners (an experimental group) obtained significantly better results than the non-CLIL students in the control group. Both hypotheses were supported (see Tab. 6). The serious weakness of the experiment was related to the fact that Science was not the only content subject within which the experimental group was exposed to CLIL; on the contrary, they were taught by the CLIL method in almost all subjects. This fact, although profoundly affecting the results, was not considered by the researcher, which weakened the validity of the experiment.

Tab. 6: The pedagogical effect of CLIL on English proficiency and Science knowledge of CLIL learners (%) - Luprichová, 2013

experimental group								
	N	Min	Max	Me	AM	SD	Z	p
Pre-test English	21	2,5	4,5	3,5	3,50	0,57	-4,036	<0,001
Post-test English	21	4	7	6	5,95	0,67		
Pre-test science	21	2,5	4,5	3,5	3,41	0,52	-4,088	<0,001
Post-test science	21	5,5	8	7,5	7,43	0,62		

control group								
	N	Min	Max	Me	AM	SD	Z	p
Pre-test English	23	1	3,5	2,5	2,33	0,86	-4,222	<0,001
Post-test English	23	3	6	4	4,20	0,85		
Pre-test science	23	2	4	3	3,13	0,46	-4,218	<0,001
Post-test science	23	5	7,5	6	6,17	0,70		

Legend:
N = size of a sample, Min = minimum score recorded in the test, Max = maximum score recorded in the test, Me = median, AM = average mean, SD = standard deviation, Z = ratio, p = significance level

Tertiary education

Learning outcomes of Slovak CLIL students in tertiary education was studied by Kováčiková (2013). The main aim of her design-based research (2013) was to identify how the implementation of CLIL (in ESP classes) affects learners´ a) size of professional vocabulary; b) skill to use chosen grammar structures (relevant for B1 level according to CEFR); c) selected writing competences (particularly used vocabulary, style and structure of writing), and d) level of reading comprehension of specific texts. She applied CLIL in a specific context of ESP classes provided within engineering study programmes at the Slovak Agricultural University in Nitra (SAU). The conveniently designed sample consisted of 104 students and was divided into 1 control and 4 experimental groups (28 non-CLIL : 81 CLIL-students). The testing instrument was designed to contain tasks from the textbook used by the control group in their ESP course (adapted to the knowledge of non-CLIL students) and not by the experimental groups. The author´s intention was to show that the use of the CLIL method did not diminish the students´ chances to be successful in their specific language performance, even if they did not use regular ESP course materials. The research conclusions were based on the triangulation of results obtained by testing foreign language proficiency, content

analysis of vocabulary appearing in learners´ products (projects), and focus group meetings.

The content analysis of students´ projects revealed a triple increase (473 new terms) in the number and greater variety of specific vocabulary units the CLIL students used in their presentations in comparison to non-CLIL students. Moreover, the experimental group reached higher mean scores in the reading and writing sections (see Tab. 7), probably due to the use of more authentic types of material during the work on their projects).

Tab. 7: Final testing results in English language proficiency of CLIL learners in tertiary education - Kováčiková, 2013

	Grammar and Vocabulary	Reading	Writing	Score
CG — Mean	37.48	8.48	7.41	53.31
EG — Mean	33.77	9.05	7.52	50.23
CG — Minimum	26.00	5.00	1.00	38.00
EG — Minimum	17.00	4.00	5.00	28.00
CG — Maximum	47.00	10.00	10.00	65.00
EG - Maximum	48.00	10.00	10.00	67.00
CG - Standard Deviation	6.00	1.70	2.43	7.68
EG - Standard Deviation	7.75	1.38	1.61	9.83
CG — Median	37.00	9.00	8.00	52.00
EG - Median	33.50	9.50	8.00	50.00

Legend:
CG – control group, EG - experimental group

Scores from the grammar and vocabulary section were significantly higher in the control group, most likely due to the used testing instrument. None of the three scores (vocabulary and grammar, reading, writing) were significantly different (see Tab. 8).

Tab. 8: t-test results for diagnostic test 2 (non-CLIL vs. CLIL group) (Source: Kováčiková, 2013)

Section		
Grammar and vocabulary	**t-test value**	**2,18**
	p-value	0,0325
Reading	t-test value	-1,55
	p-value	0,1251
Writing	t-test value	-0,21
	p-value	0,8324
Score	t-test value	1,43
	p-value	0,1585

After this part of our review of research studies conducted in Slovakia with regard to the effects of the CLIL method on learning outcomes of learners, along with many foreign research results (Admiraal at al., 2006; Dalton-Puffer et al., 2008; Gallardo del Puerto et al., 2009; Hüttner, Riede-Bünemann, 2010; Järvinen, 2010; Jexenflicker, Dalton-Puffer, 2010; Llinares, Whittaker, 2010; Lo, Murphy, 2010; Lorenzo, Moore, 2010; Maillat, 2010; Mewald, 2007; Moore, 2009; Ruiz de Zarobe, 2008, 2010; van de Craen et al., 2012; Zydatiß, 2007 and others), it is safe to conclude that a positive effect of CLIL on both a foreign language development (Menzlová, 2012; Luprichová, 2013) and content knowledge (Luprichová, 2012) was proved. The research endeavours, which brought not so unambiguously positive results, reflected the complex nature of the CLIL method and its research since, it has to be said, they depended heavily on the use of rather not ordinary teaching techniques (e.g. direct decontextualised translation in Kubeš´s research) and research instruments (tests used by Kováčiková, 2013).

3.2 Research of learners´ attitudes towards CLIL

In the international CLIL research context, analysis of CLIL learners attitudes as one of valuable sources for better understanding of what actually happens in CLIL classrooms is

represented by several studies (Lasagabaster & Sierra, 2009; Papaja, 2012; Wegner, 2012 and others). In the Slovak context, the topic was discussed in 3 studies: Luprichová (2013) concentrated on primary learners, Gondová (2012) on secondary students, and higher education was studied by Kováčiková (2013).

Primary learners

Attitudes of Slovak primary learners to CLIL were studied by Luprichová (2013) as part of her pedagogical experiment discussed above. She questioned the experimental group learners about their opinions and attitudes toward bilingual instruction in Science classes. The experimental group consisted of 21 learners (age 10-11) who attended a smaller urban primary school in Košice. Their teacher used CLIL in more than 90% of lessons and their exposure to a foreign language (English) ranged from 20-30% of teaching time (10-15 minutes a lesson). To obtain data from the learners, Luprichová used a 7-item questionnaire. Because of the age of respondents (10 years) and their limited experience with questionnaires, all the items were closed, in the Likert-scale design, with the meaning of verbal options supported by emoticons. When asked whether they want to have Science lessons taught in English, only one primary learner (4.8%) in an experimental group answered ultimately positively. 61.9% of respondents opted for "Maybe I want to learn Science in English" and 28.6% of them were undecided. None of the pupils chose the ultimately negative option "I do not want to learn science in English language". Supported by data from other topic-related questionnaire items, Luprichová concluded that more than 70% of primary learners in the experimental group perceived learning science through the English language positively (either strongly or moderately positively) and only one learner was moderately negative in his/her opinion.

When asked more specifically which type of lessons they liked more – lessons taught only in Slovak or lessons in both Slovak and English – the learners were divided into nearly equal groups: 52.4% of them prefer monolingual lessons in Slovak, while

47.6% of them would prefer bilingual classes with two languages of instruction, moreover, 14.3% of pupils in an experimental group would appreciate more English in Science lessons.

Learners were also asked about the difficulty of the CLIL method. Two thirds of the learners questioned said that learning Science through two languages is demanding (9.5% of learners opted for "very difficult", 57.1 marked "it may be difficult"). To the contrary, only 19% of learners tended to see CLIL lessons as not demanding (9.5% of them saw it as "easy" and the equal number of learners opted for "It may be easy"). Primary learners were also asked to specify what they particularly liked about their CLIL lessons (since respondents were only 10 years old, the researcher provided them with several options). Most learners (95.2%) appreciated materials they were given by the teacher, 90% of them liked the fact that they have richer vocabulary in English than their peers in other classes and 81% of learners marked that they liked project work. Luprichová concluded that her data proved that implementation of CLIL in primary education does not negatively influence learners´ attitudes towards either English or Science (both subjects remained among their favourite subjects during the entire experiment).

Secondary students

Despite the difference in the age of respondent groups, Gondová (2012a) reached nearly identical results. She studied attitudes towards CLIL among secondary learners. 315 CLIL learners from lower (115 respondents) and higher secondary classes (200 respondents) were asked about their attitudes in general, as well as what positives or negatives they perceive while learning through CLIL.

To collect learners´ answers, a 12-item questionnaire consisting of 9 Likert scales and 3 open questions was designed. Learners´ responses were later compared with the answers of 50 CLIL teachers (teachers at schools in which the learner respondents study). Moreover, as a part of the research project, a team of 4 researchers observed 22 CLIL lessons taught at various schools by various teachers. The author´s intention was

to triangulate learners´ answers with teachers´ answers and the results of observations.

The surveyed learners (along with their teachers) believe that CLIL has a positive influence on foreign language competences of learners. 60% of older learners (15-18 years) answered they liked learning other subjects in a foreign language. Younger learners (10-15 years old) were more restrained: only 40% of them expressed their decidedly positive attitude (Graph 1).

Graph 1: Responses to the scale: I like learning other subjects in a foreign language (source: Gondová, 2012a)
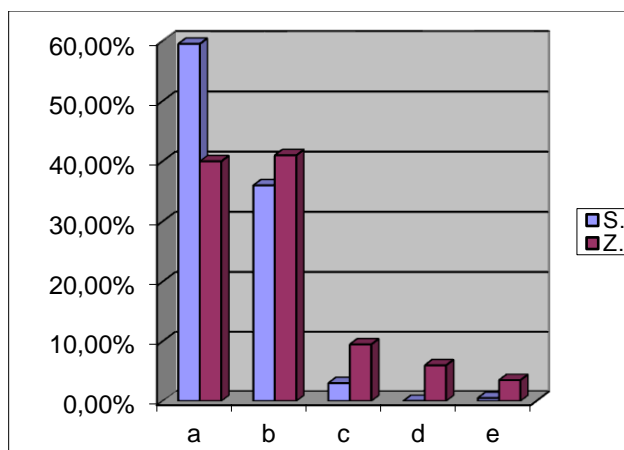
Legend:
S – higher secondary learners, Z – lower secondary learners; a – strong agreement, b – agreement, c – neutral, d – disagreement, e – strong disagreement.

To the contrary, 18% of lower secondary respondents and 21% of higher secondary respondents claimed that if they could, they would choose other methods of education (12.5% of lower and 2% of higher secondary respondents did not express their opinions). 39% of lower and 41% of higher secondary level would choose CLIL again.

An interesting situation occurred when respondents were asked whether they feel more motivated by learning in a foreign language. More than 60% of lower secondary respondents answered "no" or "I do not know", on the other hand, more than 60% of higher secondary respondents answered "yes".

In answers to open questions, respondents most often appreciated "*the otherness*" of the method. They labelled CLIL as: funny, entertaining, challenging, more interesting or "*more impressive*". They appreciated also the fact that they had more types of material. Some learners even mentioned that learning through CLIL was easier than learning in Slovak because it was new and "*the teachers do not only talk, they demonstrate everything*". Many learners were aware of the benefits CLIL may bring for their personal future, because they saw it as a more practical and useful method for everyday life. One learner wrote: "*It is like one in two: I can learn a subject and language at once*". 136 learners (43%) think they have the chance to improve their foreign language proficiency to a higher level and quicker than in regular classes. Many of them expressed that they felt more self-confident. However, there were still learners who expected more: "*I am just wondering when I will learn to communicate in English. We still gain information in English but when I need to converse in English, I just cannot. I can comprehend but cannot talk fluently and I have been learning English for seven years*!"

As for the quality and quantity of content learning, learners did not express any complaints or fear they would know less if they learnt in a foreign language.

Demandingness of learning through CLIL was the second key topic of the questionnaire. 4% of lower and 1.5% of higher secondary respondents see the study through a foreign language as too demanding, and 22.5 of lower and 17% of higher secondary learners perceive it as demanding (see graph 2).

When asked to give some suggestions to improve the CLIL lesson, learners offered the following ideas (among many others): more games and fun (e.g. learning exclusively by watching movies on youtube.com), use more group activities, more discussions, more multimedia and modern teaching aids,

organize more out-door activities, *replace theory by practice (e.g. more laboratory work).*

Graph 2: Learners perception of CLIL demandingness (source: Gondová, 2012a)
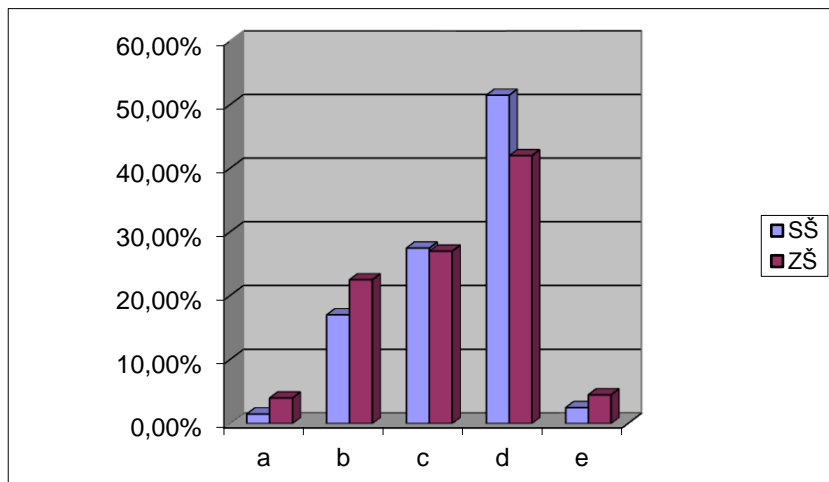
Legend:
SŠ – higher secondary learners, ZŠ – lower secondary learners; a – too demanding, b – demanding, c – neutral, d – not demanding; e – not demanding at all.

When asked what they would change in their classes, a wide scale of answers was obtained, e.g. *"I hate it when at History class we look for verbs in past tense. It´s History, not a grammar lesson! I love English but not in History"; "Sometimes teachers forget to explain new words because they think we are the cleverest"; "We copy a lot of definitions"; "I´d like to talk more and write less"; "We need to complete many worksheets and it may cause a headache!".* Some learners complained also about their teachers´ proficiency level in a foreign language. They believe that anybody with less than 'a native-like proficiency' should not teach in a foreign language. 24% of learners answered they would not change anything.

Tertiary students

To determine the tertiary education students' opinions and attitudes towards the application of CLIL in their courses was one of the research aims discussed by Kováčiková (2013). She used the method of focus groups (FG) as a secondary method to get back-up data necessary for triangulation with the pedagogical experiment and content analysis data. The focus groups consisted of 20 and 25 university students with the level of proficiency on A2 according to the CEFR. 2 meetings were organised and their outcomes were analysed afterwards in a SWOT analysis (Tab. 9).

Tab. 9: SWOT analysis results after focus groups sessions (based on FG data gathered by Kováčiková, 2013)

Strengths	Weaknesses
- more interesting, attractive method; - professional vocabulary extension; - more balanced development of all communication skills	- stress and discomfort when presenting; - work overload
Opportunities	Threats
- respecting students´ autonomy; - professional vocabulary extension; - developing general presentation skills	- false solidarity; - students´ empathy

Compared to the "traditional" courses they attended before the experiment, the students evaluated CLIL classes (organized as project work) as more interesting and they felt more involved. They appreciated the extension of their vocabulary (both general and academic) through the direct learning of new words while working on their own projects and through listening to other students´ presentations. In addition, students appreciated the

fact that they needed to go through many references, translate some of the texts in order to understand all the necessary vocabulary, as well as to eventually learn and correct it for the act of performance. They also mentioned a more balanced development of all communication skills in English. Despite the initial discomfort before presenting in English, they appreciated the chance to present orally in a foreign language, which afterwards made them feel more confident, not only with presenting in English, but also with their general presentation skills. They evaluated CLIL lessons as more demanding than "traditional" ESP courses.

As one of the threats for CLIL, in her conclusion, Kováčiková identified students´ tendency to have a "false solidarity", and what she named as "students´ empathy" – students did not wish to discuss (i.e. to criticise) other students´ presentations because they did not want to cause any discomfort to presenters, since they knew they would soon be "in their shoes". However, we agree with her that this observation may be related more to cultural context than to the CLIL method itself.

3.3 Psychological measurements of primary CLIL learners´ attitudes towards learning a foreign language

A unique research approach – comparative measuring of learners feelings towards their learning in CLIL and non-CLIL classes using psychological instruments – was applied by Farkašová (2012). The effects of CLIL on learners´ affective characteristics were studied as part of the previously mentioned national experiment *Effectiveness of CLIL in Teaching Foreign Languages in Primary Education* (see p. 23). To see how CLIL affects their general feelings of school comfort and satisfaction with their school work, the primary learners' involved were regularly tested by a combination of psychological instruments: Picture Intelligence Test (PIT), Draw a Person Test (DPT), Foreign Language Skills Test (FLST) and My Class Inventory (MCI) by Fraser & Fisher (1981), adapted by Lašek & Mareš (1991) and reduced to only 3 areas: satisfaction, competitiveness,

and demandingness. The results of the psychological tests were published by Farkašová (2012).

At the beginning of the experiment, 175 first-grade learners (9 classes) from an experimental group (their average age = 6 years and 10 months) were tested. The results from initial testing of an experimental group corresponded with a standard distribution of output in regular population. It proved that classes included into the experimental groups consisted of learners with various developmental levels, and their output distribution around an average values corresponded with a normal distribution. The experimental group, thus, could not be regarded as an "exclusive" or "elite" group, consisted of selected or talented learners.

Tab. 10: My Class inventory – Final results in primary CLIL classes (source: Farkašová, 2012)

Area	Averages	
	Experimental group	**Control group**
Satisfaction	2.48	2.74
Competitiveness	2.62	2.30
Demandingness	1.63	1.30

The hypothesis that the experimental group of learners at the end of the 4th grade would feel more comfortable and satisfied, with regard to learning and school work, than learners from a control group, was not proved.

Final results of the psychological tests (see Tab. 10) showed lower scores for satisfaction and higher scores for both demandingness and competitiveness in an experimental group (learners from CLIL classes). What may be of special interest is the fact that the initial scores for demandingness (measured when learners were in their 2nd year classes) were even higher: 1.91 (compared to final score of 1.63 in the fourth year). The lower final score in demandingness might reflect the fact that over the years, CLIL learners had adapted to the new method and related teaching techniques.

The final results pointed to the fact that the learners in the experimental (CLIL) group felt higher demandingness and competitiveness in their classes than learners in controlled (non-CLIL) classes. The author also pointed to significant differences in the final results of learners from different schools, meaning they could not be regarded as a statistically homogeneous unit. The results from particular schools should be objected to more detailed analysis of various factors affecting educational processes in CLIL classes, including a teacher´s personal and professional characteristics, school and classroom atmosphere, etc.

As an overal conclusion of this subchapter we may state that all research projects proved mostly positive attitude of learners to the CLIL method, since they perceived it as "something new", attractive, motivating, challenging, but also demanding (Gondová, 2012; Luprichová, 2013). As for demandingness, the significant difference between primary, lower secondary and higher secondary learners is obvious. Younger learners see CLIL as more demanding and would not mind changing the ways of teaching they are exposed to. The fact that the situation with learners attitudes towards CLIL is more complicated is indicated by results of psychological measurements published by Farkašová (2012). They imply that even if CLIL learners are more successful in their learning outcomes, they could feel less emotionally satisfied and under more pressure.

4 CLIL Research focus on teachers

As Pajares put it, attention to the beliefs of teachers and teacher candidates (including their pedagogical views, opinions, attitudes and experience) "should be a focus of educational research and can inform educational practice in ways that prevailing research agendas have not and cannot" (1992, p. 307).

In the last decade, a large range of research studies have been published worldwide, focused mostly on CLIL teachers´ performances, their specific professional characteristics and competences (e.g. Alonso, Grisalena, & Campo, 2008; Banfi & Rettaroli, 2008, Butler, 2005, and others), on teachers´ opinions, beliefs, attitudes, experience, and concerns (Cammarata, 2009; Coonan, 2007; Hunt, 2011; Pavón Vázquez & Rubio, 2010; Pena Díaz & Porto Requejo, 2008, and others), and on the need for professional development and training (Banegas, 2012; Hillyard, 2011; Hunt, Neofitou, & Redford, 2009; Pistorio, 2009, and others).

Similarly rapid progress may be observed in Slovak teacher-centred CLIL research. A year ago, while summarising the state of CLIL research in Slovakia, there were no completed research projects discussing any aspect of a teacher´s performance in CLIL lessons (Pokrivčáková, 2012a, p. 235-244). Nowadays, it seems that the teacher-oriented CLIL research is the most extensive field of CLIL research in Slovakia. Menzlová (2012) published results of a survey of selected primary CLIL teachers´ in regards to their experience with (and opinions on) CLIL. Another cohort of Slovak primary CLIL teachers was asked about their attitudes towards (and personal views on) CLIL by Pokrivčáková (2013b). The same author published the results of analysis of their professional needs (Pokrivčáková, 2013c). Moreover, three doctoral theses, falling into the teacher-oriented CLIL research category, have been published. Hurajová (2013) explored whether (and if yes, how exactly) pedagogical competences of CLIL teachers differ from those of non-CLIL teachers. The CLIL

teachers´ competences were studied also by Sepešiová (2013), who focused on expectations and competencies of primary teachers from Eastern Slovakia (Prešov region).

4.1 Teachers´ personal views on CLIL

As part of a 4-year national experiment *Effectiveness of CLIL in Teaching Foreign Languages in Primary Education* (see Menzlová, 2012), 21 participating teachers (with 2.9-years of CLIL practice on average) were surveyed (through a questionnaire) regarding their personal evaluation of the CLIL method. The non-standardised questionnaire consisted of 13 questions (9 with limited and 2 with open responses, and 2 Likert-scales) and were administered in June 2012.

All the teachers felt they were supported by their school's management. In their opinions, CLIL mostly facilitates development of a learner's foreign language proficiency (9 teachers) and content subject knowledge (8 teachers). Only a few of the teachers believed that CLIL develops learners´ cultural (1 teacher) and social competences (2 teachers). 20 teachers were planning to continue teaching through CLIL after the experiment is over, which the research team interpreted as an indirect indicator of a positive attitute of teachers towards the method (the remaining teachers of the sample answered "maybe").

When asked what should be done to make CLIL more convenient at their school, the teachers proposed: higher salary for CLIL teachers (15 teachers), replenishing relevant resources in school libraries (15 teachers), equipping specialised classrooms for CLIL classes (7 teachers), and organising continual education courses (6 teachers).

In questions with open responses, in the opinion of teachers, learners appreciated the CLIL method. They looked forward to them and when in class, they expressed spontaneous enthusiasm, were relaxed and did not show any signs of fear. Teachers also remarked that sometimes they did not have enough time to discuss the content "in detail", however, they did not think CLIL would "endanger" the quality or quantity of a

learner's knowledge in content subjects. As threats to CLIL, they indicated a lack of appropriate teaching materials and work overload while planning lessons.

In her qualitative survey, Pokrivčáková (2013b) wanted to identify the dynamics in the development of teachers´ attitudes toward CLIL. The research analysed CLIL teachers´ views on their experience with (and attitudes to) CLIL in the following areas: initial impression, stability/dynamics in perceptions of CLIL, teachers´ contemporary attitudes to CLIL, and teachers´ personal evaluation of CLIL strengths and weaknesses. The questionnaire consisted of 20 items, 16 of which were items with an open response, 3 items with a combined response, and 1 five-level Likert scale with 17 sub-items. After filling in the questionnaires, a target group of teachers were interviewed (follow-up interviews) to explain or complete their answers, where necessary. The target population was defined as teachers who teach at mainstream primary schools in Slovakia and apply the CLIL method in their teaching practice. Questionnaires were distributed to 35 teachers (21 primary and 14 lower secondary school) who were using CLIL in their classes at 18 elementary schools all around Slovakia.

The teachers that had been interviewed offered a wide range of **their initial impressions on CLIL:** from 'very positive' through 'neutral' to 'negative'. An entirely 'rejecting' sentiment was missing, however the majority of CLIL teachers mentioned they felt "lost", unprepared, and lacked any information. While looking for information, Slovak teachers relied on their own experience, as well as that of their colleagues, and on continual self-learning. Contrary to Pena Díaz & Porto Requejo´s results (2008), Slovak teachers did not seem to be concerned about their level of target-language proficiency (none of the Slovak teachers mentioned this problem).

Considering the **stability or dynamics** of teachers´ attitudes to CLIL over time, two instances were identified: either a stable positive attitude or an improved shift in opinions and attitudes - caused mostly by acquiring practice, a positive response of learners, as well as a positive impact of CLIL on a learner´s outcomes.

The teachers´ answers regarding their **contemporary attitudes to CLIL** oscillated from neutral to positive. Slovak teachers generally consider CLIL both professionally challenging and personally satisfying. None of the Slovak teachers expressed a univocally negative attitude.

While **evaluating CLIL strengths**, teachers named 51 appreciable traits or benefits of CLIL. They mostly mentioned their answers from items 2 and 3, adding some new aspects such as: that CLIL provides less stressful learning, "natural" learning of a foreign language, as well as learning connected to 'real life'. They think that learners in CLIL lessons are more active and communicative.

While defining the **weaknesses of CLIL**, teachers´ answers reflected 4 most intensively felt drawbacks: a) higher demands on teachers; b) higher demands on learners and even unsuitability of CLIL for some groups of learners; c) lack of suitable CLIL materials and d) the struggle to find a balance between language and content objectives so that the content was not "neglected" and ensuring that learners didn't, in fact, learn less.

Nearly identical results were obtained by Sepešiová (2013, pp. 63-78) who surveyed 94 primary CLIL teachers from 13 schools in the Prešov region in Eastern Slovakia (September 2012). One of her most striking conclusions was that nearly a third of them (32.90%) perceived CLIL as a method positively influencing the teaching of foreign languages. Only 8% of them believed in a positive effect of CLIL on cognitivisation within a teaching process (see graph 3). As for the other most frequently mentioned positives of CLIL, teachers observed the following: a) learners felt less stress during CLIL lessons (19.30%) and b) they seemed to learn more in a shorter teaching time (15.30%).

Graph 3: Areas positively affected by CLIL – in CLIL teachers´ opinions (Source: Sepešiová, 2013)

CLIL affects positively ...
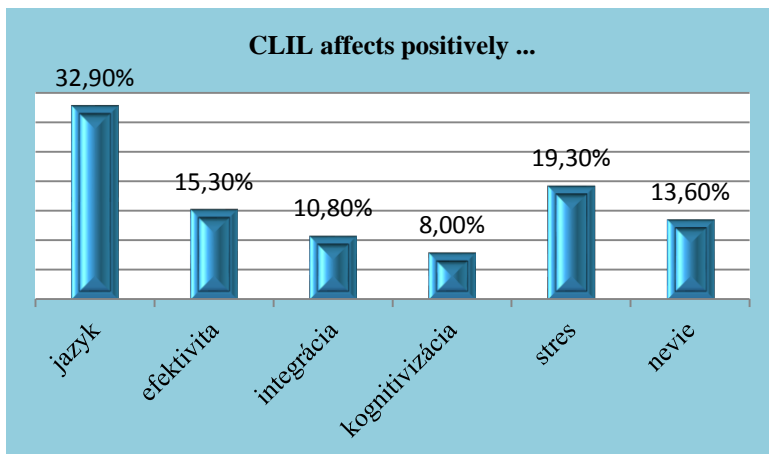
Legend:
jazyk = language learning; efektivita = effectivity of teaching; integrácia = integrating cross-curricular topics, kognitivizácia = developing learners´ cognitive skills; stres = reducing stress in the classroom; nevie = do not know

Hurajová (2013) also inquired primary CLIL teachers (N=21) about their personal opinions on CLIL. She primarily studied specific competences of CLIL teachers an in addition, asked what positives and negatives of CLIL they perceive in their teaching practice. She used an e-questionnaire with fixed-response questions and with the same number of "positives" and "negatives" options. Such design of a survey instrument guided teachers implicitly to mark both positives and negatives of CLIL equally. The review of Hurajová´s data is given in Table 11 below.

Tab. 11: Teachers' perception of positives and negatives of CLIL (Source: Hurajová, 2013).

POSITIVES	%	NEGATIVES	%
Students' motivation to learn FL, learn and practice FL in real context	44%	Demanding preparatio for teachers	60%
Easier learning of FL for learners, students' better communication skills in FL	40%	absence of teaching resources, books	12%
Active, interesting learning for students	16%	Lower confidence	8%
		Others -students are overloaded with FL -need for more time allocation for the subjects taught in CLIL -no opportunity to compare CLIL results with other results - no unification of the CLIL curriculum.	20%

In line with the results of earlier mentioned research studies by Menzlová (2012), Pokrivčáková (2013b, 2013c) and Sepešiová (2013), Hurajová also determined that primary CLIL teachers observe: learners´ improved communication skills in a foreign language, better motivation, a closer tie between school and practical life, as well as an interesting learning environment. On the other hand, teachers perceived the work overload both for teachers and sometimes learners critically, a lack of teaching

materials and evaluation instruments, as well as the absence of an official framework for the application of CLIL.

In her commentary, Hurajová also referred to the same "deformations" as discussed by Sepešiová (2012), reflecting the fact that many CLIL teachers perceive CLIL only as a method of developing learners´ communication competences in a foreign (working) language.

4.2 CLIL teachers needs

To ensure the effectiveness of CLIL, "it is necessary to make sure the teachers are provided with the support and the training they need. Needs analysis, by means of interviews, questionnaires, language audits, tests, and class observation, can provide information about the wants of (and what is lacking for) teachers' (Ruiz-Garrido & Fortanet-Gómez, 2009, p. 184). Only then will the system know how to provide them with suitable support and how to design effective training for both pre-service and in-service CLIL teachers.

Needs analyses of CLIL teachers have not been published widely; Ruiz-Garrido & Fortanet-Gómez (2009) in their study, summarise only several works which at least marginally discussed the problem of CLIL learners or CLIL teachers needs and their analysis (de Graaff et al., 2007; Van de Craen et al., 2007; Vázquez, 2007; Wilkinson, 2004; Wilkinson & Zegers, 2008; Mehisto, 2007, 2008 etc.), concluding that most of the studies on needs analysis and CLIL were more often related to learners than teachers needs.

Slovak CLIL teachers´ needs analyses were published by Pokrivčáková (2013c), Hurajová (2013), and Sepešiová (2013).

In Pokrivčáková´s research, 35 primary and lower secondary school CLIL teachers were asked about their personal views on the demandingness of various components of a CLIL teacher´s performance. The basic premise of the research was the following: the components with the highest scores in demandingness would require the most support and attention within teacher training courses. Moreover, teachers' needs were

analysed in relationship to the length of CLIL experience and previous CLIL training. The research used the method of a questionnaire with follow-up interviews. The questionnaire consisted of 20 items, 16 of which were items with an open response, 3 items with a combined response and 1 five-level summative scale with 17 sub-items. After filling in the questionnaires, the teachers were interviewed to explain or complete their answers, where necessary. Questionnaires were distributed from January to March 2013 among 35 teachers (21 primary and 14 lower secondary) who have been applying CLIL in their classes at 18 elementary schools all around Slovakia. The group of respondents consisted of teachers of all age groups and with various lengths of teaching practice. Teachers were divided into three clusters: those who had been applying CLIL for 3 years and less (17 teachers), those with 4-6 years experience with CLIL (13 teachers), finally, those who had been using CLIL for 7 years and longer (5 teachers, including 2 teachers with the longest experience - 9 years).

Key data for the needs analysis were obtained as teachers´ responses to a five-level summative scale with 17 sub-items, each of them indicating one of the possible problems CLIL teachers may face in their teaching practice. The following scale levels were used: 1 = easy, not demanding; 2 = easily manageable; 3 = manageable, 4 = demanding, 5 = too demanding. The mean scores for individual components were counted and then ordered from the highest (most demanding) to the lowest (least demanding). Partial results (in the form of the list of the components with highest mean scores) are shown in Tab 12.

The final descending order revealed that the most "problematic" components of CLIL teaching are related either to the managing of teaching in mixed-ability classes or to lesson planning. The remaining categories with lower 'mean scores' included: introducing new content in L2 (2.94), maintaining teacher´s communicative competences in L2 (2.86), dividing teaching time between L1 and L2 (2.86), assessing learners´ progress in CLIL lessons (2.80), managing classroom interaction in L2 (2.74), cooperating with colleagues (2.28), communicating

with parents (2.26), keeping learners motivated (2.26), cooperating with school management (2.17).

Tab. 12: Components of CLIL teaching seen as most demanding by teachers (Pokrivčáková, 2013c)

	Area	Mean scores
1	Engaging weak learners into CLIL activities	3.77
2	Engaging learners with SEN into CLIL	3.64
3	Adapting materials for CLIL activities	3.54
4	Creating worksheets for CLIL activities	3.53
5	Selecting materials for CLIL activities	3.49
6	Preparing CLIL lessons	3.48
7	Teacher´s self-assessment	3.08
8	Organising CLIL lessons	3.03

The consistency of the scale was determined by Cronbach coefficient Alpha values (raw = 0.886232; standardised = 0.892795) and *chi*-squared tests confirmed neither correlation between teachers´ attitudes and the length of their CLIL experience (see Tab. 13) nor the correlation between teachers´ attitudes and their attendance at CLIL training. Based on the responses collected in other questionnaire items it was concluded that CLIL teachers needs were not specifically CLIL-oriented, but rather reflected CLIL teachers general professional needs, as well as their beliefs about and attitudes to teaching in general.

Tab. 13: Attitudes of teachers vs. length of their CLIL experience

Length of CLIL application (in years)	1-3	4-6	7-9	Total
Number of teachers	17	13	5	35
Mean scores of their evaluation of CLIL demandingness	2.79	3.07	2.92	2.92

A very similar research strategy was applied by Hurajová (2013). Her main research objective was to identify specific

professional competences of CLIL teachers. The first stage of her research was focused on determining which of their competences CLIL teachers see as insufficiently developed and need to be fostered.

From the initial 287 primary teachers addressed, only 21 were selected as a relatively homogeneous research sample (experienced CLIL teachers at primary schools) and then asked through an e-questionnaire.

The first important finding of this project is that 64% of CLIL teachers had not been trained in CLIL before applying the method (Hurajová, 2013). CLIL teachers were given a list of pedagogical competences with their short descriptions and were asked to choose those (without grading their importance) which they consider as most needed to be fostered/enhanced according to their opinions. The results are shown in Tab. 14.

Tab. 14: The pedagogical competences which CLIL teachers need to be fostered/enhanced (acc. to Hurajová, 2013)

Competences	Description	Results
Communication	In a foreign language (CLIL target language)	13%
Organisational	Managing CLIL lessons, activities	13%
Theoretical knowledge	Theoretical knowledge of CLIL methodology, how to apply CLIL methodology in education	13%
Planning	Planning CLIL lessons and activities	12%
Distinguishing	Distinguish the appropriate ratio between a mother tongue and the target language in CLIL classes	10%
Curricular	What subject to choose for CLIL, how much content to cover in CLIL lessons	8%

Assessment/ Evaluation	Evaluating and assessing students performance in CLIL lessons	7%
Presentation	Presenting principles of CLIL to parents, colleagues, school management and learners	6%
Cross-curricular	To use student's knowledge construct from various subjects and implement it into CLIL lessons	6%
Language Scaffolding	To build and use supportive system for students in target language to help them understand the subject content in CLIL lessons	4%

The most frequently marked competencies CLIL teachers feel they need to foster were communication competence in a foreign language (13%), organisational competence (12%), theoretical competence (12%), planning competence (12%) and distinguishing competence (10%). These results support perfectly the research findings discussed in the previous chapter 2.2.1 in which the most problematic elements of CLIL were discussed.

Another Slovak researcher - Sepešiová (2013) - as part of her project studying primary CLIL teachers competences, asked her research cohorts (94 teachers) what type of support would help them most in CLIL. 39.2% of teachers suggested continual education (funded by the state institutions), 23.2% of teachers would ask for teaching finely-tuned materials in English. Less frequent responses included: methodological materials written in Slovak, model lesson plans, lists of CLIL vocabulary, and a platform for sharing materials and practical experience.

4.3 Research of CLIL teachers pedagogical competences

Among the three methods to study primary CLIL teacher competences, Hurajová (2013) also conducted content analysis of a selected set of methodological sheets produced by teachers who were involved in the national experiment Effectiveness of CLIL in Teaching Foreign Languages in Primary Education (2008-2012). Her objective was to identify competences that were directly reflected in authentic teachers outcomes. Her research sample consisted of 100 methodological sheets for various content subjects. The authors of methodological sheets were teachers with various levels of CLIL experience who worked at all types of schools (state, church and private) in all regions of Slovakia. The codes for content analysis were adapted according to the CLIL Teacher's Competences GRID (Bertaux et al., 2010), mostly using items of the Implementation part in the section "Setting CLIL in motion" of the GRID. The following basic categories of the content analysis were defined: a) ability to prepare tasks for learning/form of learning, b) providing multi-modal support, c) incorporating cross-curricular themes, d) CALP - developing academic language related to the content subjects, e) BICS – developing language phenomena needed for communication about the CLIL topic, f) language scaffolding, e) organisational competence. The complete findings are summarised in Tab. 15.

Hurajová concluded that CLIL teachers manifested in individual categories of content analysis various levels of their pedagogical competencies. She was also aware of the fact that although the analysed methodological sheets were authentic products of CLIL teachers, they did not need to reflect the reality in classes.

In the category of **Tasks** of learning (reflect teacher´s ability to prepare meaningful tasks to support their learning) the most frequently occurring activity was filling in worksheets (50.39%). 23.62% of activities involved in methodological sheets were tasks for active learning or learning while "doing something" (e.g. constructing a hive for bees, playing bees flying from flower to flower to pollinate them, planting hydroponic plants, etc.).

Tab. 15: Pedagogical competences of CLIL teachers as reflected in their methodological sheets (source: Hurajová, 2013)

CATEGORIES	CODES
Tasks for learning / Form of learning	101 Worksheets = 50.39%
	102 Pair Work = 9.45%
	103 Group Work = 13.39%
	104 Active Learning/Learning through doing = 23.62%
	105 Test/Quiz = 3.15%
Multi-modal support	201 Picture Cards = 39.67%
	202 Objects = 18.18%
	203 Video/Film = 4.13%
	204 PC + Powerpoint = 15.70%
	205 Interactive Board = 7.44% 206 Others = 18 14.88%
Cross-curricular themes	301 Science = 9%
	302 Geography/Practical education = 10%
	303 English = 10%
	304 Other = 1%
	305 None = 70 (70%)
CALP	401 CALP 1- 5 words=30 (30%)
	402 CALP 6-9 words=29 (29%)
	403 CALP 10 and more=23 (23%)
	404 CALP general description of vocabulary=7 (7%) 405 not stated = 11 (11%)
BICS	501 BICS stated = 86 (86%) 502 BICS not stated = 14 (14%)
Language Scaffolding	601 grammar exercise/translation of words = 0.94%
	602 linking previous knowledge to new one = 6.60%
	603 visuals/sounds = 28.30%

	604 miming/gesticulation/movement /touching = 26 24.53%
	605 Nothing stated = 39.63%
Organisational competence	701 CLIL lesson = 34%
	702 CLIL activity = 9%
	703 Not stated = 57%

13.39% of tasks supported group work and 9.42% pair work in classes. Identifying pedagogical competence in the **usage of multi-modal support**, in 39.67% of sheets teachers used pictures and other visuals, and in 18.18% of them various objects were demonstrated. 23.14% of methodological sheets were based on using either interactive board (7.44%) or powerpoint presentations (15.70%). In 14.88% of the sheets teachers used CD-players or another type of audial support. Explicit **cross-curricular topics** have not often been stated in methodological sheets. Topics which were defined integrated mostly English and Geography, Practical Education, and Science. In 70% of the sheets no cross-curricular topics were identified. By analysing language objectives, as well as key words and key phrases stated in the methodological sheets, Hurajová found out that in the majority of methodological sheets (30.00%) 1-5 CALP words were introduced, in 29.00% sheets 6 - 9 academic words were introduced, and in 23% cases teachers planned to introduce 10 or more words in one CLIL lesson. In 11% of sheets no CALP vocabulary was mentioned. In regards to **BICS vocabulary,** it appeared in most methodological sheets (86%). **Language scaffolding** competence had been manifested in more than 60% of methodological sheets, with most frequent instruments of scaffolding being: using visuals or sounds (28.30%), miming, gestures, movements (24.53%), linking new content to the previous knowledge (6.60%), grammar exercises or translation (0.94%). 39.63% of methodological sheets did not contain any language scaffolding procedures. CLIL units were usually **organised** as all-lesson units (explicitly in 34% cases and implicitly in 57% of cases) or as an individual activity within a bilingual lesson (9%).

To sum up, conclusions of Slovak CLIL researchers on various characteristics of CLIL teachers did not differ from findings from other countries (Alonso, Grisalena, & Campo, 2008; Banegas, 2012; Cammarata, 2009; Coonan, 2007; Infante, Benvenuto, Lastrucci, 2009; Pavón Vázquez, & Rubio, 2010; Pena Díaz & Porto Requejo, 2008 and others). In all the observed areas (attitudes, needs, competences), researches brought consistent findings, supporting each other. Summarising Slovak teachers' attitudes toward CLIL, the following conclusions may be offered:

• Their attitudes oscillate from neutral to very positive (none of the respondents in any of the analysed researches expressed a univocally negative attitude).

• Slovak teachers generally consider CLIL both professionally challenging and personally satisfying.

• CLIL teachers perceive the CLIL method as an unequivocally effective means of developing learners' foreign language proficiency.

• They believe CLIL also develops content subject knowledge, but their evaluation of the method´s effectiveness is not completely unambiguous in this regard (doubts were mostly explained by certain time stress in CLIL classes caused by using a foreign language as a medium of communication).

• The culture dimension of CLIL is usually neglected both in pedagogical practice and research projects.

• Despite frequently mentioned drawbacks, such as work overload and demanding preparation, nearly all Slovak teachers who have started with CLIL in their teaching practice plan to continue in their endeavour because they can see learners positive responses on various levels (higher motivation, better communicative skills in a foreign language, activity, higher self-confidence, etc.).

• Pointing to problematic aspects of CLIL, teachers usually name 5 aspects, which have been mentioned frequently in international researches also: a) higher demands on teachers performance in a foreign language; b) lack of finely-tuned CLIL materials and c) developing mastery in bilingual instruction: finding a balance between both working languages, d) problems with planning CLIL lessons, e) and finally, managing CLIL lessons

for mixed ability classes with weak learners or learners with special educational needs.

• One of the matters, repeatedly appearing in all researches, was the teachers call for further training, which should be a strong motivating impulse for the universities providing teacher training programmes and other institutions involved in either initial or life long teacher training.

5 Research of CLIL classroom interaction

Gondová (2010, p. 17) explained the importance of CLIL classroom interaction as follows: "in CLIL, interaction between learners as well as between learners and a teacher is of exceptional meaning since dual objectives of CLIL can be fulfilled only by multidirectional communication". International research results imply that "CLIL classrooms differ from foreign language classrooms in some fundamental pragmatic parameters, which is of some importance in explaining the reduced foreign-language-speaking anxiety that is commonly observed in CLIL students" (Dalton-Puffer, 2011, p. 190). CLIL classroom interaction has been studied by numerous researchers (Dalton-Puffer, 2007a, 2007b; Dalton-Puffer, & Nikula, 2006; Duff, 1995; Kupetz, 2011; Llinares, & Morton, 2012; Maillat, 2010; Moore, 2009, 2011; Nikula, 2007; Nikula et al., 2013 and others).

In the Slovak context, CLIL classroom interaction was observed and evaluated by). Gondová (2012b) and Králiková (2013).

To learn more about the character of interaction in CLIL classes, Gondová (2012b) organized a survey using 8-item questionnaires combined with interviews and direct observation of CLIL lessons. Six questionnaire items contained a scale of the Likert type and an open-ended question so that the respondents could have a chance to explain their opinions. The last 2 items were multiple choice questions where a teacher might choose more options. The survey data were subsequently compared with the data obtained by observation of 22 CLIL lessons taught by the interviewed teachers.

The sample consisted of 50 teachers from 40 lower- and upper-secondary schools. It included 17 lower-secondary teachers and 33 upper-secondary teachers of chemistry (5 teachers), geography (6), biology (7), mathematics (7), economics (8), religion (4), ethics (2), social studies (1), business correspondence (3), civics (3), history (2), and music (2).

Gondová´s results proved some already well-known paradoxes of contemporary teaching practice (with or without CLIL): all the surveyed teachers claimed that they used a wide range of learner-oriented teaching techniques of which, in their own perception, the most commonly used were discussion methods, followed by discovery methods and games. Even though all teachers also claimed that they used discussions and discovery methods as learner-oriented techniques, direct observations in CLIL classes identified only eight discovery activities (7% of all the observed techniques and activities), and no discussion methods that were really learner-oriented. Gondová suggested that what teachers meant by a discussion technique was in fact a teacher-guided interaction with the whole class which did not enhance learners autonomy, independency and creativity. She also pointed to a striking similarity in answers of lower-secondary and upper-secondary teachers, although their teaching procedures should differ due to different educational needs of their learners.

In her conclusion, Gondová (2012b, p. 13) explains: "...teachers are aware of the necessity to use learner-oriented methods and most of them try to do so in some of the lessons, but even if they decide to use a role-play, a discovery activity or a game, they usually choose one which is controlled or semicontrolled, which means it does not make the development of higher-order thinking skills of learners possible. It seems that teachers are not willing to lose control of what their learners do and avoid using analytical, evaluative or creative tasks enabling learners to work independently from the teacher. One of the reasons might be the long-standing culture of traditional, teacher-oriented teaching, another one the lack of knowledge of learner-oriented methods".

In the second part of her research, Gondová studied the incorporation of pair work and group work (as means of enhancing learner-oriented classroom interaction) into CLIL classes. Similarly to previous result, she found out that teachers were very well aware of the importance of involving students in pair and group activities, and claimed they included them in their lessons. However, the findings from the questionnaires and

interviews were not in agreement with the observation results which proved that the classroom communication in CLIL classes was usually teacher-led and it followed the IRF interchange (Carter and McCarthy 1997, p. 124).

A year later, Gondová´s conclusions were validated by Králiková (2013) and her quantitative research. She compared classroom interaction in regular English classes and CLIL classes (Science classes taught bilingually - both in Slovak and English). She concentrated on answering four main research questions: She concentrated on answering four main research questions:

1. How does the amount of talking time of learners differ in English and CLIL classes?

2. Which communication structures most frequently occur in English and CLIL classes?

3. Who is typically the initiator of communication in English and in CLIL classes?

4. Do CLIL teachers use the teaching techniques which support "learner – learner (L-L)", "learner – learners (L-LL)" or "learners – learners (LL- LL)" communication structures?

To find the answers, she incorporated direct and indirect observations, the Slovak version of the QTI - Questionnaire of Teacher Interaction (adapted by Gavora, Mareš a den Brok, 2003) with 64 items divided into 8 fields, and qualitative content analysis of CLIL lessons transcripts (paying special attention to 3 phenomena: code-switching, evaluating pronouncements, and avoiding direct translation). The research was conducted in 2 classes in an urban school in Zilina (northern Slovakia). 2 primary teachers and 2 teachers of English were involved.

Králiková found out that the average learners talking time in 12 observed CLIL lessons (= 11:07 min.) was comparable to learners talking time in English classes (= 11:08 min). What might be of special interest is that despite the nearly same duration of the talking times, in CLIL classes learners communicated longer within the category "communication in pairs/groups" (03:03 in CLIL classes vs. 01:50 in English classes). The average number of "learner-centred" communication structures learner – learner (L – L), learner – learners (L – LL),

and learners – learners (LL – LL) was lower in CLIL lessons (8 occurrences in average) than in English classes (15 occurrences in average). The communication structure teacher – learners (T – LL) appeared as the most frequent in both CLIL and English classes, pointing thus to the generally dominant character of classroom interaction directed at the teacher (compare Tab. 16).

Tab. 16: The average number of communication structures in primary CLIL classroom interactions (source: Králiková, 2013)

CS	Graphic manifestation	School 1				School 2			
		Class 1		Class 2		Class 1		Class 2	
		CLIL	EN	CLIL	EN	CLIL	EN	CLIL	EN
		N	N	N	N	N	N	N	N
1	T → L	17	15	11	11	11	13	14	25
2	T → LL	46	69	78	62	77	70	59	56
3	T ↔ L	25	43	25	36	69	28	29	47
4	T ↔ LL	21	10	21	16	10	14	11	12
5	L → T	14	10	18	22	15	21	11	13
6	LL → T	2	1	1	1	1	-	-	1
7	L ↔ T	31	32	50	56	28	55	26	38
8	LL ↔ T	5	2	1	1	1	1	-	3
9	L → L	2	3	1	13	1	7	2	8
10	L → LL	11	-	1	2	-	6	-	1
11	L ↔ L	3	2	-	3	-	4	-	1
12	L ↔ LL	1	-	-	-	-	-	-	-
13	LL → L	-	-	1	-	-	2	1	1
14	LL ↔ L	-	-	-	-	-	-	-	-
15	LL→ LL	-	-	-	-	-	-	-	-
16	LL ↔ LL	-	-	-	-	-	-	-	-
17	CiP/G	12	1	3	1	4	5	1	-
18	IcC	13	20	11	14	19	24	9	23
	Total	204	210	222	244	236	250	167	231

Legend: *T – teacher, L – learner, LL – learners, CiP– communication in pair, CiG - communication in group, IcC – incomprehensible communication*

Moreover, the higher level of the CLIL teachers' directiveness was confirmed by both their QTI scores and observations (CLIL teachers were more directive by 2.9% than English teachers).

Králiková´s results validated previously formulated conclusions by Gondová (2012, s. 25) who observed various types of communication interaction in secondary CLIL classes. She similarly concluded that interaction in CLIL classes was initiated mostly by the teacher, and "teacher-centred" communication dominates. She also pointed to the more directive characteristics of CLIL teachers.

The qualitative content analysis showed that code-switching in CLIL classes was implemented as supplementing known English words into mother language utterances. Králiková observed that code-switching was used more frequently by teachers. Here are some examples collected during the research:

U: *Left*, tam budú látky, ktoré obsahujú vzduch, *right*, ktoré neobsahujú.

U: Keď viete, nechajte si to pre seba. *OK? When it is hot, water turns into?*

U: *Food*. O tom sme sa rozprávali málo. *Food is energy for what*?

U: A *computer* potrebuje čo?

U: *Condensation*. Dobre. A tretí, Kubko?
Ž: *Precipitation*.
U: *Precipitation*. Dobre.

U: Nie. Na začiatku musí byť?
Ž: *Oil*.
U: *Oil*. Dobre.   (source: Králiková, 2013)

Teachers used code-switching mostly in organising class work, as in the following examples appearing during the observed lessons, e.g.:

> U: *Sit down*. Teraz si zopakujeme základné učivo.
>
> U: Takže Samko, *choose any card*.
>
> U: *Yes, draw it on the blackboard*. A samozrejme aj do zošita.
>
> U: Perfektne. *OK, now*, ideme na vylučovaciu sústavu a začne Stanko. *Stand up*.
>
> U: Anička, *read your question.*
>
> U: Ale, keďže sme sa učili, musí jesť *healthy food.*
>
> (source: Králiková, 2013)

Measuring the ratio of Slovak and English words uttered in CLIL classes, Králiková discovered that CLIL with low (5 – 15% of teaching time) or medium exposure to a foreign language (15-50% of teaching time) was applied in all the observed CLIL classes (see Tab. 17).

Tab. 17: Ratio of Slovak and English words uttered by the teacher (T) and the learner (L)/learners (LL) in CLIL classes (source: Králiková, 2013)

CLIL	Number of words total		Number of words - T		Number of words – L/LL	
	Slovak	English	Slovak	English	Slovak	English
School1	100 %		77,2 %		22,8 %	
	75,4 %	24,6 %	76,6 %	23,4 %	78,6 %	21,4 %
School2	100 %		80,1 %		19,9 %	
	90,3 %	9,7 %	90,5 %	9,5 %	89,7 %	10,3 %
Total	100 %		78,6 %		21,4 %	
	82,4 %	17,6 %	83,5 %	16,5 %	84,1 %	15,9 %

As for translation strategies in CLIL classes, Králiková observed their frequent occurrence, too, e.g.:

U: Clouds. Vieme, čo je clouds?

ŽŽ: Oblaky.

U: Clouds fall down and turn back into water...

U: Prelož mi tú vetu. Translate this sentence. The car can break down.　　　(source: Králiková, 2013)

Ž: Auto sa môže zlomiť.

U: Yes. Alebo sa môže rozpadnúť. To slovo má viacero významov. Normálne je zlomiť a v tomto prípade rozpadnúť, akákoľvek časť auta, hej? Takže prečo je nebezpečné jazdiť na hrdzavom aute? Tadeáš, because?

Ž: Because the car can break down.

(source: Králiková, 2013)

U: When I said backbone. What is it? Kristiánko.

Ž: Chrbtica.

U: Yes.　　　　　　　　(source: Králiková, 2013)

The researcher also showed that the observed CLIL teachers tended to give feedback in Slovak. Feedback in English was given only sporadically, by using only a limited register of words and structures.

In summary, Králiková´s results showed that, compared to non-CLIL English classes, classroom interaction in the observed CLIL lessons was not significantly different in any of the monitored aspects (amount of learners talking time, frequency and type of communication structures, initiating communication, applying teaching techniques which support interaction between learners). These results are in agreement with Gondová´s results (2012b); however, they contradict majority of international research outcomes (Dalton-Puffer, 2007b; Maillat, 2010; Mariotti, 2006; Moore, 2007; Nikula, 2007).

Conclusion and CLIL research implications for CLIL teacher training

The aim of this publication was to summarise and critically evaluate recent outcomes of CLIL research conducted within the regional context of the Slovak educational system. Although the analysis from the research endeavours were conducted mostly as stand-alone studies and have some methodological flaws which seem to be general for CLIL research (c.f. Pérez-Cañado, 2012, p. 330), they complement each other and – as we believe - their combined results create a complex picture of the "Slovak experience with CLIL".

Five fundamental areas of Slovak CLIL research were covered: analysing learners´ attitudes toward CLIL, measuring CLIL learners´ learning outcomes, detecting CLIL teachers´ attitudes, identifying their professional needs and analysing CLIL classroom interaction.

In some aspects, The Slovak results confirmed conclusions that had been formulated by researchers abroad (positive effects of CLIL on developing foreign language proficiency, generally positive attitude of both teachers and learners towards CLIL). It also proved that the professional needs and competences of Slovak CLIL teachers do not significantly differ from the needs of CLIL teachers from around the world (basically they require more examples of good teaching practice, more tailor-made teaching materials and more CLIL training).

The areas in which the Slovak research studies brought results different from international context were as follows:

1. It seems that Slovak CLIL teachers did not change their teaching styles, stereotypes, and procedures due to CLIL and they still prefer using more traditional methods of teaching, including teacher-oriented procedures and dominant convergent tasks (Gondová, 2012b).
2. The types and frequency of classroom interaction structures in CLIL lessons does not differ from those in non-CLIL classes

with teacher-oriented communication and with the teacher being the most frequent initiator of communication.

Based on the latest experience and research results, the following **recommendations** have been formulated:

1. It is necessary to start a public discussion between the Ministry of Education, schools and parents about formulating united instructions and criteria for applying and measuring quality of CLIL teaching at Slovak schools.
2. A national accreditation system for schools applying CLIL is necessary.
3. Although the research into CLIL in Slovakia revealed rapid development, more research probes into the application of CLIL on various levels of education is inevitable.
4. As several research projects showed, one of the most serious problems accompanying the application of CLIL by Slovak teachers is the lack of finely-tuned materials for teaching through CLIL in Slovak monolingual classes, based on Slovak national curriculum. Despite the fact that some handbooks and manuals have been published, more of them need to be created, evaluated and published in a short time.
5. Teachers need to be informed continually. Even though several monographs, research reports, popularising articles and methodological manuals have already been available for some time, Slovak teachers keep requiring new sources and asking for more specific materials, such as systematic methodology for using CLIL in mixed-ability classes including learners with special educational needs and weaker learners.
6. And last, but not least, a complex network of teacher-training institutions involved in CLIL-based continual education for in-practice teachers ought to be formed in a very short time.

Bibliographic note

The text of this publication includes parts of the following previously published articles:

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