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Abstract: The paper publishes selected results of the pedagogical experiment on effectiveness of the application of content language integrated learning method (CLIL) at Slovak primary schools (young learners). The experiment was conducted as part of the project Teaching Effectiveness of CLIL Method in Teaching Foreign Languages in Primary Education (2008-2012). The Slovak results are confronted and put into wider context of international research on CLIL conducted in Europe, Southern America and other parts of the world.

Key words: CLIL, pedagogical experiment, young learners, Slovak primary schools

CLIL research in general

The first contacts of Slovak schools with content language integrated learning in primary education can be traced back to 2000. Since then Slovak researchers, teacher trainers and teachers have gone a long way through various theories, made various attempts and applied different approaches, not rarely based on the “trail and fail” method. Nowadays, there are several dozens of Slovak primary schools which apply CLIL systematically as an integral part of their school educational programmes (most of them were involved in the experiment mentioned below).

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 and Sierra (2009) or Dalton-Puffer (2011, pp. 183-184):

- CLIL is about integrating a foreign language and other curricular subjects, not about integrating second languages;
- the CLIL teaching time in a target language never exceeds 50% of total teaching time;
- the dominant foreign language integrated in CLIL lessons is English;
- CLIL lessons are usually timetabled as not target language lessons but content subject lessons (e.g. mathematics, biology, geography, arts);

- a target language is taught also as an independent curricular subject (parallelly with CLIL lessons);
- for most learners CLIL lessons and target language lessons usually provide the only opportunity for learners to interact and communicate in a target language;
- CLIL is about using FL which is not regularly used in the wider society they live in;
- teachers of CLIL lessons are most often non-native speakers of a target language, contrary to Wolff's (2007) and Dalton-Puffer's conclusions (2011) who state that CLIL teachers are in most cases content subject experts, not foreign language teachers; in Slovakia, there is no statistics documenting the ratio of target language teachers and content subject teachers who apply CLIL;
- Dalton-Puffer also states 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. Our experience proves that schools, having decided to apply CLIL, usually start on primary level of education along with the beginnings of teaching a target language.

Research in CLIL worldwide has been developing dynamically. Although 20 years ago research studies on CLIL and its teaching/learning outcomes were very rare and in 2005 Woolf could still point out to CLIL being in "its infancy", nowadays a rapid progress may be witnessed in all its areas. The latest research results may be found in several specialized and already prominent journals on bilingual education and CLIL such as: *International Journal of Bilingualism* (since 1997), *The International Journal of Bilingual Education and Bilingualism* (since 1998), *International CLIL Research Journal* (since 2008), *Latin American Journal of Content&Language Integrated Learning* (since 2008), and *Linguistic Approaches to Bilingualism* (since 2011). Geographically, the dominant position in CLIL research remains in Europe (understandably, since CLIL is often considered "the European branch of bilingualism") with growing importance of research centres in Latin America (as illustrated also by *Latin American Journal of Content&Language Integrated Learning*) and Asia.

The CLIL research has been conducted in various areas:

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

- **teacher-based CLIL research** is interested in specific professional characteristics and teaching competences of CLIL teachers;
- **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 combining (e.g. code-switching);
- **content-based CLIL research** concentrates on various ways in which the content of education is coded in a target language while applying CLIL and on how learners' content-learning outcomes are affected by CLIL;
- **context-based CLIL research** studies the occurrence and importance of various national, cultural and other external factors on effectiveness of CLIL.

Based on meta-analyses of CLIL research in 2005-2010, Dalton-Puffer (2011, pp. 182) recognizes the following trends in contemporary CLIL research: a shift from case reports and programme descriptions to more general research, growing number of research conducted directly in classrooms, and putting research studies in increasingly international perspective. Moreover, the analysis of research reports published recently shows the stable interest of CLIL researchers in four areas: learning outcomes of CLIL both in a target language and in curricular content, quality and types of classroom interaction (CLIL classroom discourse), analysis of examples of good teaching practice; and development of teaching materials for CLIL classrooms.

CLIL research in Slovakia

CLIL research in Slovakia is truly "in its infancy". Recently a 4-year pedagogical experiment entitled *Teaching Effectiveness of CLIL Method Application in Teaching Foreign Languages in Primary Education* (State Pedagogical Institute, Bratislava, May 2008 - September 2012) has been finished and its results are to be published by the end of 2012. The project's objective was to measure learning outcomes of primary learners of 15 primary schools applying CLIL method. The learning outcomes of "CLIL learners" were compared to learning outcomes of "non-CLIL" learners who learn a target language in more traditional, non-CLIL classes, usually at the same schools (which is a typical research procedure for the study of CLIL – c.f. Dalton-Puffer, 2011, p. 186). Where such comparison was not possible (e.g. at schools with only CLIL classes), the non-CLIL classes of the same grade from schools with the same or similar

characteristics situated in the same regions were compared. The results of the experiment showed generally better learning outcomes of CLIL learners in all observed areas (development of vocabulary, listening, reading and writing skills). Such conclusion confirms results of many other previously published research studies (Admiraal, Westhoff, de Bot, 2006; Lasagabaster, 2008; Lo, Murphy, 2010; Ruiz de Zarobe, 2008, 2010; Zydatiř, 2007 and others).

The experiment studied also the influence of CLIL on learners' motivation to learn a target language (Menzlová, Farkařová, Pokrivčáková, 2012). To what extent these better results of "CLIL-learners" were the result of applying CLIL method and to what extent they were the result of a time advantage (since they continued with their regular foreign language learning along with CLIL lessons and thus their exposition to a target language was longer) remains of interest for future research.

The influence of CLIL on learning outcomes of 4th-grade CLIL learners in mathematics was studied as part of the doctoral thesis research *Aplikácia prístupu CLIL na hodinách matematiky v 4. ročníku ZŠ* by (Kubeř, 2012). Three more research projects, all of them doctoral thesis research projects and all of them to be finished in 2013, have been half-finished these days: a learning-outcomes research has been carried on by Králiková (*English in Primary Education – with focus on CLIL method*), language-based CLIL research is represented by Luprichová's thesis *Modernization of Teaching English as a Foreign Language by Means of CLIL Methodology*, and teacher-based research of specific competences of non-native (Slovak) teachers needed for effective application of CLIL has been conducted by Hurajová in her doctoral thesis project *CLIL Methodology and Primary School Teachers' Competences*.

Slovak experiment results and international context

In the following part of the paper the selected results of the above mentioned experiment conducted at Slovak primary schools and finished recently (November 2012) will be put into wider context of international research on CLIL conducted in Europe, Southern America and other parts of the world.

CLIL vocabulary

Studies on quantity and quality of target language vocabulary acquired by CLIL learners (e.g. Jexenflicker, Dalton-Puffer, 2010; Lo, Murphy, 2010; Ruiz de Zarobe, 2010; Zydatiř, 2007)

proved that CLIL students' receptive and productive lexicon is generally larger. It also contains more words from lower frequency bands, comparing to lexicon of non-CLIL learners. CLIL learners manifested their ability to use vocabulary of a wider stylistics range and they were able to use it more appropriately. As expected, significantly better results of CLIL learners were manifested in the area of academic vocabulary.

Similarly, the experiment that studied effects of CLIL on young learners at selected Slovak primary schools showed better results of CLIL learners as regards the testing of their lexicon (both passive and active) in a target language (average increase in test tasks = + 0,5586).

CLIL and writing

The influence of CLIL on writing skills of learners has been studied by many authors too (Järvinen, 2010; Jexenflicker, Dalton-Puffer, 2010; Llinares, Whittaker, 2010; Lorenzo, Moore, 2010; Ruiz de Zarobe, 2010 and others). The research results proved overall positive effects of CLIL, such as a wider range of morpho-syntactic means and a higher degree of accuracy in a target language. In their writings, CLIL learners also use more elaborate and more complex structures and their papers are characterized by better spelling (which is possibly the result of reading a wider range of texts in a target language). As areas least affected by the application of CLIL method were manifested in qualities such as cohesion, coherence, and paraphrasing.

As part of the experiment conducted at Slovak schools (2008-2012), CLIL and non-CLIL learners were tested on their ability to write short texts in a target language (free writing activities). The final test included a task to describe a picture in 8-10 sentences. In fulfilling this activity, CLIL learners reached generally better results (average increase in writing test results + 0. 3644).

CLIL and listening and reading

Although the research of CLIL effects on reception skills (listening and reading) is very rare, the Slovak experiment (2008-2012) involved these areas too. In the experiment, CLIL learners reached significantly better results in both listening tasks (average increase in listening test results = + 0.6818) and reading tasks (average increase in reading test results = + 0.6326).

CLIL and oral production

Although speaking and oral production competences were not studied in the above mentioned experiment, there are numerous studies pointing to a positive effect of CLIL on oral production of a target language (Admiraal et al., 2006; Dalton-Puffer et al., 2008; Gallardo del Puerto et al., 2009; Hüttner, Riede-Bünemann, 2010; Maillat, 2010; Mewald, 2007; Moore, 2009 and others). In these studies, CLIL learners displayed their greater flexibility and listener-orientedness in producing utterances in a target language. They also appeared more self-assured in their intended meanings. On the other side, a target language pronunciation of CLIL learners appeared as the area either little affected or unaffected at all by CLIL method (Admiraal et al., 2006; Gallardo del Puerto et al., 2009 and others).

Future challenges of CLIL research

The results of CLIL research as summarized above could seem to indicate that foreign language pedagogy has finally found the ideal approach to teaching foreign languages. Unfortunately, all research outcomes should be interpreted with a certain level of caution. Research of bilingual education has always faced serious methodological risks (given a number of possible variables entering the process – heterogeneity of samples, heterogeneity of teaching techniques, etc.). As Genesse (1998, p. 10) has it: “... the unfortunate reality is that vast majority of evaluations of bilingual programs are so methodologically flawed in their design that their results offer more noise than signal.” The most important challenge facing CLIL research is then designing and continual refining methodological procedures of bilingual education research.

In her meta-analytical paper on CLIL research in Europe, Pérez-Cañado (2012, p. 331) summarizes the key areas in urgent need of research as follows:

- research-based empirical studies into the linguistic outcomes of CLIL education;
- longitudinal studies of all aspects of CLIL education;
- assessment of both language and content knowledge;
- analysis of CLIL teaching methodology;
- CLIL teachers observation, including their training, classroom language, collaboration techniques, etc.

Conclusion

CLIL research is a dynamically developing area of both foreign language pedagogy and content subject pedagogy research. The paper was concerned with contemporary situation in CLIL research and its possible future development. The results of international CLIL research in selected areas of foreign language pedagogy were introduced and confronted with the results of latest CLIL research in Slovakia.

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