

## PUPILS' MOTIVATION IN MATHEMATICS TEACHING USING THE CLIL METHOD

JITKA LAITCHOVÁ, JAN WOSSALA

### ABSTRACT

The CLIL method is a relatively new trend in education. It is a combination of content and language learning (from the English: Content and Language Integrated Learning). The article is focused on using the CLIL method in the Czech Republic. The article explores the influence of this method on students' motivation, too.

### 1. INTRODUCTION

One of the trends of the current labour market is migration in order to find a better job. However, this is associated with the need for high-quality language education not only in common, day-to-day areas but also in the specialized field in which one wants to work. One of the possibilities is to study abroad for a while to gain specialized knowledge in a foreign language. Another option (which may moreover serve as preparation for studies abroad) is the application of the CLIL method in teaching.

### 2. USING CLIL METHOD

The abbreviation CLIL stands for Content and Language Integrated Learning. Simply put, it means teaching a non-language subject in a different language than the native language. This method develops not only the ability of students to talk about common topics but also the method develops their ability to discuss subject-specific topics in a foreign language with subject-specific vocabulary.

The concept of CLIL was first officially used by David Marsh at a university in Finland in the year 1994. The official document which served to

- 
- *Jitka Laitochová* — e-mail: [jitka.laitochova@upol.cz](mailto:jitka.laitochova@upol.cz)  
Palacký University in Olomouc.
  - *Jan Wossala* — e-mail: [jan.wossala@upol.cz](mailto:jan.wossala@upol.cz)  
Palacký University in Olomouc.

apply the CLIL method in the Czech environment was the National Programme of Teaching Foreign Languages in the Czech Republic for the Period Between 2005 and 2008 and it was prepared as a reaction to the Action Plan for the period between 2004 and 2006 issued by the European Commission. In 2009, the Ministry of Education, Youth and Sports issued a document entitled Content and Language Integrated Learning in the Czech Republic.

A project which aims to determine the use of the CLIL method at primary schools and high schools in the Olomouc Region and the South Moravian Region is in progress and here is part of current results.

First part of my pre-research was for directors of schools. Questionnaires were sent via e-mail to the mentioned schools. The objective was to find out whether the schools use the CLIL method, and if they do, in which subjects. The return rate was between 16% and 18% in both regions. Out of the total number of replies regarding use of the CLIL method in the Olomouc Region, 10% were positive. In most cases, the foreign language intended for integration into other subjects was English, only in one case it was French. Almost all subjects were represented that were taught or to be taught in the foreign language and no subject significantly prevailed over others. The situation was different in the South Moravian Region. There were 13% of replies positive. The English language was dominant and a wide scope of subjects were represented. But a major difference was in the dominance of some subjects – the most frequent were Mathematics, Arts, Music, Civics and Physical Education. Among other frequent subjects were Informatics, Social Sciences, Natural Science and History. These findings indicate that the CLIL method is not completely integrated and there is a frequent fear that such lessons are too difficult and the preparation for them too demanding.

In second part of my pre-research, I focused on the effect of the CLIL method on teaching mathematics. With regard to the fact that it was a pre-research, the sample consisted of 79 respondents – the pupils of the secondary level at a South-Moravian elementary school where the CLIL method had already been used for some time. Out of the 79 respondents, 32 were boys and 47 were girls. The pupils were given a questionnaire containing 22 statements with respect to which the pupils were supposed to express agreement or disagreement using a four-point scale. The questions focused on the climate in classes, the popularity of mathematics and whether it is worth it to use the CLIL method in classes. It was obvious that the pupils had good mutual relationships and there was a friendly atmosphere. The pupils also denied any derision in the event of failure of one of their classmates. This indicates a good climate for learning. The pupils also stated that the teachers were devoted to the subjects they taught and

that the pupils were given tasks which they considered solvable. No classes thus indicated any problems, not even as far as mathematics teachers were concerned. The latest mid-year mathematics marks ranged from 1 to 4. This means that no pupil failed the subject. The general interest in mathematics was rather below average. However, when assessing mathematics taught by means of the CLIL method, there was a positive shift compared to lessons in which this method was not used. One of the frequent misgivings in connection with the integration of a foreign language into the teaching of non-language courses concerns the fear that pupils will not understand the task set in a foreign language. This was not confirmed in the case of these particular respondents, and hardly any of the pupils expressed any fear of non-understanding. What was also above average was the assessment of the pupils' activity; according to them, their activity in such lessons was increased. On the other hand, the lessons taught using the CLIL method were less focused on the actual subject in the pupils' opinion. This may be attributed to the fact that if foreign language activities take the form of games, pupils learn from such activities but do not see them as traditional lessons. This discrepancy between activity and focus on the actual subject deserves further research. Nevertheless, the assessment of the benefit of the method for the pupils' future lives was positive and slightly above average. In the use of a foreign language in mathematics, the pupils thus saw an advantage, whether in terms of their prospective studies abroad or their ability to discuss the issue of mathematics in the given foreign language. As regards the differences between the two sexes, they were not very profound. A relatively significant difference was found in the popularity of mathematics, where boys in general liked the subject considerably more than girls did. On the contrary, the popularity of mathematics taught using the CLIL method slightly decreased with boys, while girls liked the subject much more when taught in this way. Boys assessed their activity more positively than girls did, and participated more actively in the lessons. On the other hand, girls were generally the ones who found learning mathematics using the CLIL method beneficial.

### 3. FINAL REMARKS

Despite all its shortcomings, the CLIL method may bring positive aspects into teaching that above all consist in the preparation of students for studying or working abroad, where they will have to be able to discuss specialised topics, in addition to everyday conversation. The CLIL method might also make lessons more interesting, thus possibly increasing the attractiveness of non-language subjects.

*This publication was supported by project IGA PdF 2014026 Student Grant Competition of Palacký University in Olomouc.*

## REFERENCES

- [1] *Content and Language Integrated Learning v ČR*, [online]. [cit. 2013-03-01], Available: <http://www.msmt.cz/vzdelavani/content-and-language-integrated-learning-v-cr>.
- [2] S. Hanušová, N. Vojtková, *CLIL v české praxi*, In Odborná regionální konference CLIL v ČR a zahraničí, 2012.
- [3] M. Hofmannová, J. Novotná, *CLIL – Nový směr ve výuce*, Cizí jazyky, roč. 46, 2002/2003, číslo 1, p. 5-6. ISSN 1210-0811.
- [4] *Integrovaná výuka cizího jazyka a odborného předmětu – CLIL*, sborník z konference, Praha: Výzkumný ústav pedagogický v Praze, 2011. ISBN 978-80-87000-85-4.
- [5] D. Nocar, *Inovovaný koncept matematické složky profesní přípravy učitelů primární školy na Pedagogické fakultě Univerzity Palackého v Olomouci*, In Acta Universitatis Palackianae Olomucensis, Facultas Paedagogica, Mathematica VII, Olomouc: Univerzita Palackého, (2010), ISSN 0862-9765.

Received: May 2014

*Jitka Laitochová*

PALACKÝ UNIVERSITY, FACULTY OF EDUCATION  
DEPARTMENT OF MATHEMATICS,  
ŽIŽKOVO NÁM. 5, 77140 OLMOUC, CZECH REPUBLIC  
E-mail address: [jitka.laitochova@upol.cz](mailto:jitka.laitochova@upol.cz)

*Jan Wossala*

PALACKÝ UNIVERSITY, FACULTY OF EDUCATION  
THE INSTITUTE OF EDUCATION AND SOCIAL STUDIES  
DEPARTMENT OF MATHEMATICS  
ŽIŽKOVO NÁM. 5, 77140 OLMOUC, CZECH REPUBLIC  
E-mail address: [jan.wossala@upol.cz](mailto:jan.wossala@upol.cz)