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PUPILS' AND TEACHERS' PERCEPTIONS OF CLIL IN PRIMARY SCHOOL: A CASE STUDY

STRESZCZENIE

POSTRZEGANIE CLIL PRZEZ UCZNIÓW I NAUCZYCIELI W SZKOLE PODSTAWOWEJ: STADIUM PRZYPADKU

Jednym ze sposobów upowszechniania wielojęzyczności w Europie jest prowadzenie w szkołach zajęć łączących nauczanie treści i języka obcego w klasie przedmiotowej. CLIL w Polsce ma charakter eliterany, gdyż adresowany jest głównie do najzdolniejszych uczniów szkół ponadpodstawowych. Celem niniejszego studium przypadku jest analiza sposobu postrzegania przez uczniów i nauczycieli prowadzonych w języku angielskim lekcji matematyki. Na podstawie przeprowadzonych z uczniami wywiadów częściowo ustrukturyzowanych można stwierdzić, że pomimo ogólnej niechęci do matematyki, ich stosunek do nauczania tego przedmiotu w języku angielskim był pozytywny. W zawierającej pytania otwarte ankiecie pisemnej nauczyciele wskazali, że nowe podejście to było dla uczniów interesujące i pozytywnie wpłynęło na poziom niektórych aspektów ich kompetencji językowych. Jednocześnie nauczyciele nie zauważyli wpływu CLIL na wzrost efektywności przyswajania treści z zakresu matematyki. Nauczyciele borykali się także z dużym obciążeniem pracą i brakiem odpowiednich materiałów dydaktycznych łączących nauczanie treści przedmiotowych z językiem angielskim.

Słowa kluczowe: CLIL, szkoła podstawowa, postrzeganie, język obcy, matematyka

SUMMARY

With the intention of promoting plurilingualism, many European systems of education have adopted approaches that aim at integrating content and a foreign language in the subject classroom. In Poland, CLIL-type instruction is rather elitist since it is addressed mainly to the most gifted students of secondary schools. The objective of the pilot study presented in this article was to implement CLIL mathematics lessons in a state primary school in Poland and analyse the pupils' and the teachers' perceptions of implementing this new form of instruction. On the basis of semi-structured interviews conducted with the pupils it can be stated that despite the general dislike of mathematics, they held a positive view of this subject when taught in English. In the open-ended surveys, the teachers indicated that although CLIL appeared to be motivating for the pupils and contributed to the increase in certain aspects of their language competence, it failed to facilitate any progress in the content subject. Moreover, the teachers struggled with heavy workload and the lack of proper teaching and learning resources that could be readily applied in CLIL-based classes in primary school.

Key words: CLIL, primary school, attitudes, foreign language, mathematics

1. Introduction

In an attempt to provide greater opportunities for exposure to foreign languages within the school curriculum, many European countries have introduced content and language integrated learning (CLIL), a dual-focused approach that consists in teaching a content subject through a non-native language. Whereas CLIL-type provision is present in most European countries at the secondary and tertiary levels, its implementation in primary education is rather incidental. The present study is positioned in Poland, where CLIL is introduced mainly in secondary education[1]. In the case of primary education, the integration of content and a foreign language (FL) is occasionally introduced in private schools[2], which are often regarded as elitist and are affordable only to the most socioeconomically advantaged families. To our best knowledge, to date, no empirical investigation on CLIL provision in state-run primary education has been carried out in Poland.

The present research set out to explore pupils' and teachers' perceptions of a five-month pilot study during which selected mathematics lessons were taught

1 A. Czura, K. Papaja, *Curricular models of CLIL education in Poland*, „International Journal of Bilingual Education and Bilingualism" 2013, 16/3, s. 322.

2 A. Otwinowska, M. Foryś, *They learn the CLIL way, but do they like it? Affectivity and cognition in upper-primary CLIL classes*, „International Journal of Bilingual Education and Bilingualism" 2017, 40/5.

through the medium of English in the sixth grade of public primary school. The study is motivated by the importance of learners' beliefs about themselves, their achievements, the whole learning process and the learning context in which they are situated[3]. Learners' success in CLIL is mirrored not only in their results in standardised test, but also in their subjective opinions concerning the learning process, the progress they made and its ultimate outcome[4].

Taking the above into account, the article aims to report on a quasi-experimental study after which two groups of primary school pupils were asked about their attitudes to English and mathematics. The pupils in the experimental group were additionally asked a set of questions related to the CLIL lessons. The data were enriched with the observations about CLIL instruction provided by the teachers' involved in the quasi-experiment.

2. Teaching mathematics through English

Since a uniform methodology of integrating content and language has not been fully developed yet, the practical implementation of CLIL varies from country to country and depends on either administrative decisions taken on a national level or CLIL teachers' individual beliefs, teaching qualifications and professional experience[5]. Within this variety, Coyle's[6] 4 Cs Conceptual Framework, consisting of four parameters for CLIL instruction: content (subject matter), communication (language), cognition (learning and thinking) and culture (global citizenship with intercultural understanding), can be treated as a signpost for instructional planning of a CLIL course.

The first "C" refers to the *content* of learning. In a traditional classroom some learners learn a new concept by heart, which results in developing a rather superficial knowledge of the subject matter. Tejkalova[7] highlights the significance of this finding in teaching mathematics and believes that additional instruction in a FL allows learners to gain a new perspective and, as a result, better understand the discussed material. Since CLIL learners need to struggle

3 Por. Z. Dörnyei, E. Ushioda, *Teaching and Researching Motivation (2nd ed.)*, Harlow 2011; R.C. Gardner, W. E. Lambert, *Attitudes and motivation in second language learning*, Rowley 1972.

4 D. Coyle, *Listening to learners: An investigation into 'successful learning' across CLIL contexts*, „International Journal of Bilingual Education and Bilingualism" 2013, 16/3, s. 246.

5 Por. D. Coyle, P. Hood, D. Marsh, *CLIL Content and Language Integrated Learning,* Cambridge; P. Mehisto, D. Marsh, M. Frigols, *Uncovering CLIL: Content and language integrated learning in bilingual and multilingual education,* Oxford 2008.

6 D. Coyle, *Developing CLIL: Towards a theory of practice*, „Monograph" 2006, 6, s. 10-11.

7 L. Tejkalova, *Mathematics for language, language for Mathematics*, „European Journal of Science and Mathematics Education" 2013, 1/10, s. 24.

with both the subject matter and the FL, the presentation of new content is often supported by a variety of techniques and interactive strategies. To clarify the meaning of a new concept, CLIL teachers often use both verbal and non-verbal means of presentation: they search for analogies, try to present the content in a more visual form, rephrase or paraphrase their utterances, use body language and gestures, provide numerous examples, or resort to their mother tongue[8].

The next "C", *communication*, pertains to the processes of learning and using a FL. What differentiates CLIL from other bilingual approaches is the fact that content and language teaching are closely interlinked and depend on each other. Due to an extensive FL input in the CLIL classroom, learners are offered multiple opportunities to practise their language skills in different interaction patterns and communicative contexts. The FL used to present and practise the new material as well as to negotiate the meaning in collaborative tasks is more authentic and, hence, more likely to imitate real-life communication[9]. There is an intricate link between mathematics and a FL in CLIL-type instruction: "Mathematics facilitates CLIL by a wide range of its own symbolic notation and visual input: in a mathematics lesson, the language of mathematics creates a natural bridge between the mother tongue…and the language of instruction"[10]. Consequently, the learners can resort to using the language of mathematics before they actually start using the FL. This particular feature of mathematics may help learners to overcome their anxiety to use a FL and thus may serve as a form of a communicative strategy in the CLIL classroom.

The next element of the Framework is concerned with *cognition* and the impact of CLIL on the changes in the thinking and learning processes. Coyle, Hood and Marsh underline that "CLIL not only promotes linguistic competence, it also serves to stimulate cognitive flexibility. Different thinking horizons and pathways which result from CLIL... can also have an impact on conceptualization"[11]. The use of a FL in the content classroom should activate both lower-order and higher-order thinking processes[12]. To overcome their limited FL skills, CLIL learners need to be engaged in numerous mental activities, which include problem solving, hypothesising, drawing conclusions,

8 J. Novotná, M. Hoffmannová, *CLIL and Mathematics education,* [w:] *Mathematics for living. The mathematics education into the 21st century project*, A. Rogerson (red.), Jordan 2000, s. 229.

9 C. Dalton-Puffer, U. Smit, *Empirical perspectives on CLIL classroom discourse*, Frankfurt – Vienna 2007, s. 18.

10 L. Tejkalova, *Mathematics for language, language for Mathematics*, „European Journal of Science and Mathematics Education" 2013, 1/10, s. 25.

11 D. Coyle, P. Hood, D. Marsh, op. cit., s. 10-11.

12 Ibidem, s. 54.

etc. Involvement in such cognitively demanding tasks may help learners develop higher procedural competence, become more determined to complete a task and tolerate potential ambiguities.

Finally, the last "C" refers to the effect of *culture* on learning and teaching in CLIL. The ability to adjust the subject matter and teaching resources to learners' immediate cultural context depends on CLIL teachers' awareness of even subtle cultural differences between the native and the target language cultures. Although it might not be directly observable, cultural differences play an important role in CLIL mathematics lessons, and CLIL teachers need to be aware of certain conceptual, culture-specific differences that may affect teaching the content by means of a FL in different cultural settings. Cultural aspects should be considered in the process of selecting teaching resources for the use in the CLIL classroom as the materials designed for German- or English-speaking contexts may appear too difficult for CLIL students both at the cognitive or linguistic levels.

The underpinnings of the 4Cs Framework seem to suggest that CLIL is predestined to be successful and this trend is not uncommon in some publications from the turn of the 20th and 21st centuries[13]. As promising as this early assertion may have seemed, such overly optimistic impact of CLIL on learners has not always been reflected in research findings. Admittedly, there are numerous studies in which the implementation of CLIL has been assessed as a positive experience by learners in primary, secondary and tertiary education[14]. However, a number of studies indicate that CLIL may also evoke negative feelings in the learners[15].

3. Method

During a five-month quasi-experimental study undertaken in a state primary schools in a large city in Poland, one out of five 45-minute mathematics lessons each week was taught through English in the experimental group. To investigate how the integration of mathematics and English was perceived by the involved pupils and teachers, the following research questions were posed:

13 D. Marsh, D. *Using Languages to Learn and Learning to Use Languages*, Jyväskylä 2000, s. 2.

14 C. Dalton-Puffer, *Content-and-language integrated learning: From practice to principles?,* „Annual Review of Applied Linguistics" 2011; A. Llinares, E. Dafouz, *Content and language integrated programs in the Madrid region: Overview and research findings*, [w:] *CLIL in Spain: Implementation, Results and Teacher Training,* D. Lasagabaster, Y. R. de Zarobe (red.), Newcastle 2010.

15 C. Apsel, *Coping with CLIL: Dropouts from CLIL streams in Germany*, „International CLIL Research Journal" 2012, 1/4, s. 54; A. Bruton, *CLIL: Some of the reasons why... and why not*, „System" 2013, 41/3; A. Otwinowska, M. Foryś, op cit., s. 467.

- What was the pupils' perception of mathematics?
- Was there any difference in the perception of mathematics between the experimental and the control groups?
- What was the pupils' perception of English?
- Was there any difference in the perception of English between the experimental and the control groups?
- How did the learners perceive the introduction of CLIL-type instruction?
- How did the teachers involved in the treatment evaluate the introduction of CLIL-type instruction in primary school?

3.1. Participants and setting

The research was conducted in a classroom environment in the presence of the pupils' regular mathematics teacher and, in the case of the experimental group, a language assistant responsible for introducing subject-specific content in English. The research involved two groups of six-graders (aged 12) of Polish origin, who at the time of the experiment did not attend any extracurricular English classes. Both groups were taught by the same English and mathematics teaches and used the same subject textbooks. With three 45-minute lessons of English per week, they represented, according to their regular English teacher, an elementary level of proficiency in English. The groups' competence in mathematics was described by the subject teacher as average and fairly comparable. It might be interesting to note that many learners came from quite dysfunctional families and from underprivileged social backgrounds.

The experimental group, subjected to the CLIL-type instruction, initially consisted of 20 students, 12 girls and 8 boys; however, a boy and a girl were excluded from the study due to prolonged absence. The control group comprised 18 learners, 10 boys and 8 girls. None of the pupils had ever experienced any CLIL-based instruction before. The participants were informed about the nature of the treatment, and relevant parental permissions were obtained.

The mathematics teacher was qualified to teach mathematics and German, and despite having an extensive experience of teaching these two subjects in primary school, she had never taught mathematics through German. Qualified to teach English in public schools of all types, one of the researches acted as a language assistant. The decision to implement CLIL in that particular school as a pedagogical innovation was initiated by the mathematics teacher and the language assistant, with enthusiastic support from the school headmaster and the pupils' parents. As it was a bottom-up initiative, the teachers involved in

the treatment were responsible for the instructional planning, programme evaluation and material design.

3.2. The treatment

During the quasi-experiment, mathematical content was presented and practised by two teachers: one mathematics and one language assistant. The former was responsible for presenting and practising the subject matter in Polish as well as monitoring mathematical accuracy in English-medium lessons. The language assistant was present only once a week during the CLIL lesson and her task was to introduce the mathematical terminology in English, conduct activities in a FL and enhance the pupils' communicative skills. Although the language assistant tried to use as much English as possible, to ascertain comprehension of the subject matter and ongoing classroom instructions, some code-switching occurred, which seems to be relatively natural in a low-proficiency primary classroom. The approach to CLIL instruction applied in the treatment is consistent with model D (Specific FL Medium Instruction), type A, in which one lesson in a FL follows a sequence of lessons taught in Polish. The aim of such instruction is to introduce and practise basic content-related terminology in a FL[16].

The overall content material included in total around 20 lessons in English and was divided into five topical units: general numbers, ordinal numbers, negative numbers, algebraic equations, geometry and percentages. The presentation and practice of each topic took up from 4 to 5 lessons. The practice of mathematical concepts was based on numerous drills, choral repetitions and productive activities. Conventional mathematical tasks were supplemented with a large number of activities typically used in a FL classroom (e.g. matching words with their definitions, picture dictation, gap filling and picture description). What is more, authentic materials and realia (e.g. flashcards, posters, figures, sketches, supermarket leaflets to talk about the sales prices or real clocks to practise telling the time) were employed to facilitate comprehension of the subject matter in English. In many cases, the activities involved physical movement and encouraged active cooperation with peers in group or pair-work. Apart from a regular ongoing teachers' feedback and frequent instances of peer-correction, during which the pupils commented on each other's work against sets of clearly defined criteria, no formal assessment was administered.

16 A. Czura, K. Papaja, *Curricular models of CLIL education in Poland*, „International Journal of Bilingual Education and Bilingualism" 2013, 16/3, s. 329.

3.3. Procedure and data collection

To analyse the pupils' and the teachers' perceptions of CLIL, a semi-structured interview and an open-ended written survey were designed and administered at the end of the treatment. The oral semi-structured interviews addressed to the pupils comprised questions about the learners' general attitudes to English and mathematics. In particular, they were asked about the most and least favourite aspects of both subjects and the problems they experienced. The experimental group was additionally asked some questions about the CLIL-based treatment which focused on the pupils' attitudes towards the new form of instructions as well as the lessons perceived as particularly favourable or difficult. Additionally, the pupils were invited to suggest any potential changes they would introduce, were they given the opportunity. The written survey was addressed to the teachers, who were requested to list the advantages and disadvantages of the treatment, to analyse the main problems they faced, to assess the impact of the CLIL experience on their everyday work and the development of professional skills and to comment on their cooperation with each other during the quasi-experiment. Finally, some references were made about parental reactions to the new mode of instruction.

4. Results

4.1. Results of interviews with pupils

The first set of questions dealt with the learners' approaches to learning mathematics. Regardless of the group, most pupils did not enjoy learning mathematics and believed it to be a very difficult, confusing and boring subject. Only the high achievers, that is the pupils who would receive the highest grades and constituted approximately 5% of both groups, claimed to like mathematics and perceived this subject as very absorbing and of great use in the future. The learners from the experimental group complained about the exercises focused on algebra, whereas the pupils from the control group reported on having problems with fractions and percentages. In contrast, geometry, percentages (for some respondents only) and statistics appeared to be the pupils' favourite topics as they involved drawing figures, coordinate systems and bar charts. Finally, geometry and statistics appeared appealing to the children in both groups as they included less counting and fewer equations.

The set of questions devoted to English lessons revealed that the pupils in both groups unanimously expressed positive attitudes to this school subject.

Unlike German, English was seen as a fairly attractive subject to study. In both groups the pupils perceived English as approachable, relatively easy to learn, schematic and useful in the future. As they stated, learning this language was far less stressful than learning German. Apart from four pupils who experienced difficulties in the correct use of verb tenses, the participants did not find studying English problematic. They particularly enjoyed learning new vocabulary, developing reading skills and practising selected grammar structures. Among the most problematic topics the pupils in both groups pointed out were grammar, especially the verb tense use or irregular verbs, difficult vocabulary and writing activities. Around 70% of the pupils underlined that they disliked learning by heart (e.g. irregular verbs and other word lists).

The final part of the interview was addressed to the experimental group and intended to elicit the pupils' opinions about the CLIL-based approach. All participants expressed positive attitudes and general contentment with the new mode of instruction, evaluating it as a very practical and useful experience. In particular, they appreciated the opportunity to attend a different lesson format, which, in the case of some pupils, raised their interest in English and mathematics and thus enhanced the level of involvement in classroom activities.

The learners were also asked about their most and least favourite lessons during the treatment. The most-liked topic appeared to be geometry as it involved "catchy" terminology and, by affording the pupils the possibility of drawing and presenting figures in English, added "an element of fun". Nearly a half of the participants also mentioned the activities involving physical movement and the lessons devoted to doing equations in English. The least favourite lesson was the first encounter with CLIL, which appeared very intimidating to many pupils, and the lessons devoted to algebraic equations.

The participants enjoyed being taught the content subject through English and working in groups; however, according to the majority of pupils in the experimental group, the integration of content and language did not improve their mathematical abilities and failed to affect their progress in this subject. In essence, the lessons in English were treated by the pupils as a great opportunity to review the discussed material. On the other hand, 80% of the participants claimed that their level of English definitely improved, especially in terms of vocabulary and communication skills. They observed that as time progressed they were less afraid of using the new vocabulary and speaking English in general. Asked whether they would like to attend such classes in the future, all pupils expressed readiness to continue the treatment as it was more absorbing and "more fun" to learn in such an unconventional way. However, should that be the case, the pupils underlined the need for more tasks involving group work,

picture dictation and physical movement. It is worth mentioning that one pupil from the control group, without being prompted, hinted that he would also like to experience CLIL-based approach.

4.2. Results collected by means of a written survey with the teachers

In the survey, the mathematics teacher and the language assistant shared their insights on the process and the outcomes of introducing CLIL in the primary school classroom. As regards the pupils' initial reaction to the new mode of instruction, both teachers agreed that at the beginning of the treatment, which by definition consisted in decidedly more intensive exposure to English than in a traditional classroom, the pupils seemed quite intimidated and deeply reluctant to engage in the lessons. The teachers noticed that as the treatment continued, the pupils started to exhibit increased confidence and motivation to participate more actively in classroom activities.

As regards the positive aspects, both teachers appreciated the new teaching experience and the possibility of learning from each other. The mathematics teacher observed that the pupils seemed to be more motivated to take part in classroom activities. It was clear for both teachers that the increased exposure to English during mathematics classes contributed to improvement in the pupils' command of English. Finally, revision sessions in English were considered a good opportunity to practise mathematical skills in a different lesson format. The teachers underlined that due to its popularity among the pupils and upon parental request, CLIL-based instruction, planned initially as a three-month pedagogical innovation, was continued throughout the entire semester, until the end of the academic year.

Naturally, the implementation of CLIL was not void of difficulties. The teachers complained about the lack of proper teaching and learning resources that could be readily applied in CLIL-based classes. As a result, they had to design and prepare all the teaching materials from scratch, which, as the teachers observed, appeared to be a difficult and extremely time-consuming activity. The teachers admitted that such a strenuous task would not have been possible but for close collaboration in designing a set of routine procedures that guided the processes of instructional planning, material design and corrective feedback throughout the treatment. It was also essential for the teachers to agree on clearly defined roles both of them played at different stages of the lesson.

As regards professional gains, both teachers admitted that their participation in the experiment contributed to the development of their teaching skills. The mathematics teacher emphasised that she improved her ability to prepare more lively and attractive classes, whereas the language assistant became skilful in

designing CLIL resources on the basis of Polish mathematics coursebooks. The latter also stated that she became fond of introducing some elements of different school subjects, for instance science, during regular English lessons as "it contributed to creating more real, authentic and versatile lessons which helped the learners use their knowledge outside the classroom". What is more, both teachers started to recognise the value of using collaborative tasks in the classroom.

One of the last questions dealt with the impact of CLIL on pupils' mathematical competence and was predominantly addressed to the mathematics teacher, who admitted that the answer was neither easy nor straight-forward. First of all, the treatment was seen as too short to determine whether it exerted any long-lasting effect on pupils' mathematical skills. Secondly, as the teacher continued, the pupils' level of proficiency in English made it impossible to facilitate any marked progress in mathematics and on this account the treatment served as an opportunity for additional practice rather than a tool aiming at expanding the pupils' mathematical competences. All in all, the teacher was more inclined to state that a significant progress in mathematics had not been observed at the end of the treatment.

Then, the teachers were asked to voice their opinions as to the modifications they would introduce in case the CLIL-based approach was to be implemented in Polish primary schools. According to the teachers, the treatment led to many positive outcomes both for the pupils and the teachers, and as the mathematics teacher noted, "I feel strongly for introducing CLIL in our school. I think it could do a lot of good to the pupils". However, as the teachers noted, CLIL in primary school would be far more effective and would result in more substantial learning gains, provided the pupils were exposed to CLIL for a longer period of time and, preferably, for at least three hours per week. What is more, before CLIL is implemented as a regular classroom procedure, some organisational measures need to be taken, for instance potential CLIL teachers should be granted easier access to teacher training courses and purpose-designed teaching materials. The mathematics teacher additionally highlighted the need for appropriate and well-structured teaching programmes that would regulate the process of teaching content subjects through a FL. Such programmes and the whole instructional process would need to undergo a systematic evaluation at least at the school level. Finally, the teachers were asked to report on the parental reactions to the treatment. The mathematics teacher, who had more regular contact with the pupils' parents, observed that "at first, the parents seemed to be rather distrustful as they thought their children would not manage during CLIL classes. However, as time went by, they grew more and more content and at the end of the project they were fully convinced of its success and effectiveness".

5. Discussion

The interviews in both research groups indicated that the pupils were virtually unanimous in expressing their positive attitudes to the English language, whereas mathematics was clearly disliked by the majority of pupils. Although the members of the experimental group claimed that mathematics taught in English gained in attractiveness and prompted them to be more involved in classroom activities, the overall perception of this subject was quite similar in both groups.

Both the teachers and the pupils observed that the exposure to CLIL instruction accelerated the development of students' language skills, in particular the vocabulary range and communicative skills. This assertion was verified empirically in another study conducted on the same group of learners that aimed to examine the impact of CLIL on the development of oral competence. It turned out that that the exposure to CLIL exerted a positive impact on pupils' speaking skills, especially in terms of vocabulary, fluency and pronunciation[17]. These findings are in line with a number of earlier studies that aimed to verify the effectiveness of CLIL in primary school. The attempts to implement CLIL in Greece[18], Switzerland[19] and Japan[20] proved beneficial not only in developing pupils' lexical repertoire, fluency and comprehension skills, but also in reducing their anxiety and encouraging their active participation in the classroom.

On the other hand, neither the teachers nor the pupils observed any discernible impact of CLIL on the development of mathematical skills. It is clear that mathematics lessons taught in English were considered as a great opportunity to revise the previously introduced concepts, and not as a means of enhancing pupils' competence in mathematics. Again, the results are congruent with earlier research findings which indicated that in terms of content subjects learning gains of both CLIL and non-CLIL pupils are to a large extent comparable. It must be emphasised here, however, that the overall level of mathematics skills had not been measured before and after the treatment and the assertions in the present study are based on the subjective opinions of the pupils and teachers only.

17 A. Czura, A. Kołodyńska, *CLIL instruction and oral communicative competence in a primary school setting*, [w:] *Cross-cultural perspectives on bilingualism and bilingual education,* K. Ożańska-Ponikwia, B. Loranc-Paszylk (red.), Bielsko-Biała 2015.

18 M. Xanthou, *The impact of CLIL on L2 vocabulary development and content knowledge*, „English Teaching: Practice and Critique" 2011, 10/4, s. 122.

19 C. Serra, *Assessing CLIL at primary school: A longitudinal study*, „International Journal of Bilingual Education and Bilingualism" 2007, 10/5, s. 582.

20 Y. Yamano, *CLIL in a Japanese primary school: Exploring the potential of CLIL in a Japanese EFL context*, „The International CLIL Research Journal" 2013, 2/1, s. 25.

As regards the pupil's positive attitudes to the new mode of instruction and their eager involvement in classroom procedures, in particular they seemed to enjoy the new lesson format and expressed fondness for teaching techniques that entailed cooperation with their peers and physical movement. Similar opinions about CLIL were voiced by pupils in other studies, for instance Massler discovered that despite some difficulties German pupils experienced during CLIL modules, their overall perception of being taught in a FL was positive[21]. In addition, except for low achievers, Catalan pupils enjoyed being able to understand the content matter in a FL and found the new approach generally useful[22]. Nevertheless, some studies indicate that in some context CLIL was met with negative reactions on the part of learners. CLIL was criticised on the grounds of cognitive overload[23], pupils' lack of interest in the subject matter and the perceived difficulty of this mode of instruction[24], which in most cases stemmed from learners' insufficient command of the FL[25].

It seems necessary to single out the conditions that contributed to the success of CLIL provision in the context of the study. First of all, the application of Model D, Type A of CLIL proved effective and age-appropriate in the case of primary pupils. Mathematics lessons in English were taught once a week and aimed to revise the content material that had been thoroughly presented and practised in the preceding four lessons. This way, during CLIL lessons the pupils were exposed to English terminology of concepts they were already familiar with. This form of CLIL instruction offered the pupils an additional opportunity to practise mathematics in an innovative, yet non-threatening way. Although the same material was introduced and practised twice, it was not perceived as trivial – being instructed in a FL posed a manageable challenge to the pupils. It suggests that the adoption of model D in this particular context was consonant with Vygotskian theory of child's cognitive growth, and that the content material the pupils were exposed to in English lay within their Zone of Proximal Development.

21 U. Massler, *Primary CLIL and its stakeholders: What children, parents and teachers think of the potential merits and pitfalls of CLIL modules in primary teaching*, „International CLIL Research Journal" 2012, s. 40.

22 E. Pladevall-Ballester, *Exploring primary school CLIL perceptions in Catalonia: students', teachers' and parents' opinions and expectations*, „International Journal of Bilingual Education and Bilingualism" 2015, 18/1, s. 56.

23 A. Otwinowska, *CLIL lessons in the upper-primary: The interplay of affective factors and CALP,* [w:] *Affectivity in second language acquisition*, 2013.

24 A. Doiz, D. Lasagabaster, J.M. Sierra, *Giving voice to the students: What (de)motivates them in CLIL classes?,* [w:] *Motivation and foreign language learning: From theory to practice,* D. Lasagabaster, A. Doiz, J.M. Sierra (red.), Amsterdam 2014, s. 124; C. Apsel, op. cit., s. 54.

25 A. Bruton, op cit.

This could not have been achieved but for the careful selection of teaching techniques and resources that guided the learners through their CLIL experience. The meaning of mathematical terminology in English was presented through a wide range of teaching resources, realia, authentic materials and other visual aids. Moreover, during CLIL lessons the pupils were engaged in numerous collaborative and game-like activities addressed to the needs of learners with different learning styles and preferences. Other studies also showed that the learners who experienced more collaborative and interactive teaching approaches tended to hold more positive opinions about CLIL[26]. In contrast, in another study conducted in the Polish context, the pupils complained about a shortage of interactive and enjoyable activities in CLIL modules[27].

The presence of two teachers in CLIL lessons was not mentioned as an advantage by the pupils; however, it seems to be one of the factors that might have contributed to the positive perception of CLIL in the present study. First of all, the mathematical content was introduced by a qualified language assistant, who, being fully aware of the process of FL acquisition, was able to adjust the teaching resources and techniques as well as the level of English used in the classroom to the pupils' cognitive, emotional and linguistic needs. Moreover, the pupils were actively involved in the discovery process and the construction of meaning. Due to the adoption of an interactive and collaborative teaching methodology that engaged the pupils on cognitive and linguistic levels, English was treated both as the content and the medium of instruction, which is in line with one of the fundamental premises of CLIL, according to which "both language and the subject have a joint role" in the CLIL classroom[28]. It can be hypothesised that in the study conducted by Otwinowska and Foryś[29] the pupils' negative perception of CLIL stemmed from the application of too conventional teaching approaches by the content teachers, who, having no formal training in FL or/and CLIL methodology, were unable to fine-tune language use to fit the pupils' level of proficiency and placed too much emphasis on the subject matter. Secondly, in the earlier case the content taught in a FL had been subjected to some forms of assessment[30], which might have posed additional stress on children, whereas in the present study the mathematical content in English was not assessed.

The teachers involved in the treatment also expressed their contentment with the presence of two teachers in CLIL lessons and seemed to be satisfied

26 D. Coyle, op. cit.; A. Doiz, D. Lasagabaster, J.M. Sierra, op. cit., s. 127.
27 A. Otwinowska, op. cit, s. 218.
28 D. Marsh, *CLIL/EMILE – The European Dimension: Actions, Trends and Foresight Potential,* Brussels 2002, s. 58.
29 A. Otwinowska, M. Foryś, op. cit.
30 M. Foryś, *Personal communication*, April 2013.

with the outcomes of the study and the pupils' enthusiasm for the new mode of instruction. Similar positive attitudes towards the CLIL experience and the need for support from other colleagues were also articulated by teachers involved in other studies[31]. In schools in which only one CLIL teacher was employed, bilingual modules were cancelled more often[32], which indicates that collaboration with other professionals is not only useful, but also motivating and stimulating for CLIL teachers.

These positive outcomes of the CLIL experience do not change the fact that the involved teachers faced multiple problems of pedagogical and administrative nature. Similar to other contexts where CLIL was introduced[33], some of the major obstacles the teachers recalled were the lack of clear and coherent CLIL methodology and teaching resources. The need to design the entire CLIL course and produce all teaching aids in English entailed additional burden and workload on the part of the teaching staff. The mathematics teacher also emphasised that if CLIL is to be implemented as a regular form of instruction in public education, some administrative measures need to be adopted by school authorities.

6. Conclusions

The predominantly positive opinions about CLIL expressed by the pupils and teachers suggest that this form of instruction may be perceived as useful and enjoyable in a primary school setting, provided it is implemented in keeping with age-appropriate, learner-oriented and collaborative teaching methodology. The success of the treatment is to a large extent attributable to the skilful handling of content material by the language assistant, who, being aware of the principles of FL acquisition and FL teaching methodology, was able to adjust the level of linguistic input to the learners' needs and capabilities. Additionally, since the CLIL sessions were devoted to mathematical content introduced and practised during earlier lessons, they did not pose excessive cognitive burden for the pupils.

We understand that this is a small-scale research and therefore cannot be generalised to other settings; however, due to administrative and financial restrictions as well as heavy time- and workload for the teachers, involving a larger number of participants was not possible at the time. Nevertheless, this

31 Np. E. Pladevall-Ballester, op. cit.

32 U. Massler, op. cit., s. 43.

33 S. Lucietto, *Writing materials for CLIL: A lost cause?*, „Folio" 2009, 13/1; O. Meyer, *Introducing the CLIL-Pyramid: Key Strategies and Principles for CLIL Planning and Teaching,* [w:] *Basic Issues in EFL Teaching and Learning*, M. Eisenmann, T. Summer (red.), Heidelberg 2011.

study constitutes an important voice in research on implementing CLIL in primary education. It suggests that it is administratively and pedagogically feasible to implement CLIL-type instruction in a group of pupils with limited level of FL competence in a state-run, non-elitist primary school. Although it is too early to claim that the model of CLIL instruction successfully implemented in the present study will be optimal and applicable in other contexts, the adopted teaching approach and organisational setup may be treated as an option to be exploited in the future.

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