CONTENT AND LANGUAGE INTEGRATED LEARNING IN SLOVAKIA

Beata Menzlová et al.

ŠPÚ ŠTÁTNY PEDAGOGICKÝ ÚSTAV

CLIL in Slovakia

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Authors:
Beata Menzlová
Silvia Pokrivčáková
Eva Farkašová
Danica Gondová

Reviewers:
Zuzana Straková
Rastislav Metruk
Michaela Sepešiová

Translation:
Anton Pokrivčák

Proofreading:
Phil Le Mottee

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The National Institute for Education, Pluhová 8, 830 00 Bratislava

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Juraj Ulický

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Introduction

CLIL (Content and Language Integrated Learning) is a widely accepted acronym that, collectively, refers to a number of different methodological approaches, the common element of which is the specific position of language in the teaching of other subjects and educational content. The term CLIL thus covers all forms of education through the teaching of a language that is not the mother tongue for most learners, meaning that the teaching of the subject content (e.g. mathematics) is integrated with the teaching of another or a foreign language. The specificity of the position of another/foreign language in this methodology lies in the fact that language is not only the goal of education, but also a means. In other words, the teacher teaches another subject/foreign language at the same time, and it becomes a teaching medium, i.e. the working language.

At present, CLIL is understood as a methodology, or even as an approach to teaching. The document of the European Centre for Modern Languages in Graz *Europäisches Rahmenprogramm für die Ausbildung CLIL-Lehrkräften* (European Framework Program for Teacher Education and Professional Development CLIL Teachers, 2018) mentions CLIL as a pedagogical approach. The aim of CLIL is not only to develop learners' subject competencies and their ability to verbalise knowledge in their mother tongue, but also in another/foreign language.

The monograph presented provides current results of research into the application of CLIL in Slovak primary schools.

The introductory part of the monograph provides a brief overview of the current knowledge about CLIL as a pedagogical approach, which has its roots in Europe and which has begun to spread very successfully in the global context in the last decade (especially in South America and Southeast Asia).

In the first chapter, we characterise the most important pedagogical and psychological aspects of CLIL. In the second chapter, a closer look at the current situation in research and the practical application of the approach in Slovakia is taken. The following core chapters provide the results of the original research whose aim was to experimentally verify the effect of the CLIL pedagogical approach in lower secondary education on the educational results of learners in a foreign language.

We believe that the publication presented will serve as an effective source of information not only for the scientific community, which deals with CLIL topics in their own research, but will also serve as inspiration for the general pedagogical public and especially the teachers who apply this approach in their daily pedagogical practice. We wish them a lot of strength and success.

Authors

1. Theoretical background

The term CLIL is used in various contexts in which subjects are taught through a foreign language. (Pokrivčáková, 2015, p. 17) claims that CLIL is applied in monolingual classes. It is usually applied by a teacher for whom - as well as for learners - the working language is a foreign language. It follows that learners speak a foreign language only within the classroom and usually do not have the opportunity to speak it outside.

In the context of primary schools, a foreign language should be used in CLIL lessons for a maximum of 50%, because it is important for learners to expand their vocabulary in individual areas in Slovak as well (Menzlová, 2019, p. 90). At secondary level, bilingual schools are also included in the network of schools in Slovakia, where the teaching of some subjects should then take place exclusively in a foreign language.

1.1 Pedagogical aspects of CLIL

There is a large number of different definitions of CLIL in theoretical literature. The first of them emphasised the dual goals of CLIL (Coyle, Hood, Marsh, 2010). Dalton-Puffer (2007) emphasises that CLIL applies to those educational contexts in which a language other than the mother tongue is used as the language of instruction. The definition of CLIL is further advanced by Ball et al. (2015) who understand language as an integral part of any learning and thus of subjects taught in learners´ mother tongue as well. According to them, CLIL is a teaching of a subject in a foreign language, which underlines the academic results of the learner from the given subject and in which the improvement in a foreign language is considered important, but at the same time perceived as a bonus. In our context, CLIL is understood as "an approach to education that has dual goals and in which subjects are taught through a foreign language, when learners do not speak a foreign language to such a degree that they can study independently. In parallel with the CLIL lessons, learners also have traditional foreign language teaching" (Gondová, 2013, p. 4).

In the 1990s, when the term CLIL came into use, it was referred to as a CLIL method (Coyle, Hood, Marsh, 2010; Wolff, 2009), while now CLIL is understood as a methodology, or even an approach to teaching that builds on constructivist principles. The aim of CLIL is not only the increase of knowledge in individual subjects, but also the development of subject competencies of learners and their ability to verbalise knowledge not only in their mother tongue but also in a foreign language. Due to constructivist principles, learners should be made active in CLIL classes, learning should be personalised, and learners should have enough space to construct subject knowledge under the guidance of a teacher in communication with classmates. Thus, working in pairs or small groups should predominate in the lessons, creating a space for all learners to verbalise and discuss their learning, either in their mother tongue or in a foreign language. Thanks to this, learners acquire new concepts along with new knowledge. However, it should be emphasised that the acquisition

of new concepts requires the help of the teacher – language support (scaffolding) - the more intensely, the younger the learners are. We would like to emphasise that when applying CLIL, it is necessary to apply the same methods and procedures, regardless of whether the given part of the lesson takes place in a foreign language or in the Slovak language. As already mentioned, the understanding of the term CLIL has changed over the years, depending on the results obtained in research. In the document of the European Centre for Modern Languages in Graz (Austria), *Europäisches Rahmenprogramm für die Ausbildung CLIL-Lehrkräften* (European Framework Program for CLIL Teacher Education, 2018), CLIL is understood as a pedagogical approach. In view of the above, we will also use this term.

CLIL is sometimes incorrectly referred to as teaching that takes place in a foreign language but in which learners do not receive any language support. Language support is a key element in CLIL that distinguishes it from conventional forms of teaching in mother tongue (Ball, Kelly, Clegg, 2015). Language support is very important because CLIL is applied in classrooms where learners have not yet reached such level of command of a foreign language that they can learn science subjects - it will help them then to better understand the content of texts in written or audio form, or help them verbalise the acquired knowledge orally or in writing.

The term CLIL is used in various contexts in which subjects are taught through a foreign language. In this publication, we accept the definition of S. Pokrivčáková (2008, p. 7), according to which "the term CLIL covers all forms of teaching the academic, arts, technical and professional subjects through the teaching of a language that is not the mother tongue of most pupils, i.e. the teaching of subject content (e.g. mathematics) is integrated with the teaching of a foreign language". In Slovakia, CLIL is applied mainly in monolingual classes (in classes where students use only one, usually their mother tongue, in ordinary communication). CLIL is also usually applied by a teacher who combines two languages of instruction (the learners` mother tongue and a foreign language) and for whom the second language of instruction is as foreign as it is for learners. Learners (and teachers) speak a foreign language only within the classroom and usually do not have the opportunity to speak it outside.

The main benefit of CLIL is that students use a foreign language in meaningful communication. They do not just learn "language for language" (as a separate academic subject), but to learn something new and say something new in a foreign language. This increases the probability that students can search for new information in a foreign language, think in it and communicate freely. Previous research conducted in Slovakia (Menzlová, Farkašová, Pokrivčáková, 2008) has shown that in the context of primary schools, a foreign language in CLIL classes should be used to a maximum of 50% of the total teaching time, because it is important for students to expand their vocabulary and academic discourse in individual subjects in Slovak and foreign languages. This proportion also applies, to a large extent, in secondary schools, but the network of schools in Slovakia also includes bilingual schools, where the teaching of some (at least three) subjects takes place exclusively in a foreign language. In this case, it is no longer a

question of applying CLIL, but of the CBI (content-based instruction) approach, which pursues other educational goals.

Finally, let us summarise the main benefits of CLIL from a point of view of language pedagogy (Pokrivčáková, 2008, p. 11):

- pupils learn a foreign language in natural conditions, acquire and present new information in a foreign language, so they really communicate,
- students do not use language in artificially induced situations,
- pupils do not focus primarily on the form of the language (to speak without mistakes), but on the content of what they say - a foreign language is the medium of knowledge here,
- a foreign language (like the mother tongue) becomes an integral part of the learning process,
- CLIL saves time - e.g. in teaching topics that learners have so far learned in two subjects in parallel,
- properly applied, CLIL allows for the use of different learning styles (not just verbal learning).

1.2 Psychological aspects in learning a foreign language

In preparing and assessment of content, organisational, methodological and other components in foreign language teaching, psychological aspects are also an important criterion - especially the age and specificity of learners and the resulting possibilities or capacity in their cognitive, social, emotional and personality areas.

The experimental verification of CLIL, which took place in Slovakia in the years 2013 - 2018, focused on teaching in the 5th – 9th grades of primary school, i.e. on learners aged 10-15 years. This age range represents the period during which individuals undergo significant developmental changes - the period of childhood and adolescence is bridged. According to Piaget's terminology (Piaget, Inhelder, 1993), the given age period is called the stage of formal operations. The beginning is approximately in 11th – 12th year, with, however, its onset and course differing interindividually. The concept of Příhoda (1977) is an example of periodisation which captures biological, psychological and social development. The period of 11 – 15 years is referred to as pubescence. This comprehensive approach does not omit other aspects that contribute to the resulting image of the adolescent with his/her individual composition of variables as a result of internal and external factors influencing ontogenetic development. During this period, significant changes occur in the level of cognitive functions, in personal, emotional, and social development.

At this point, we will not analyse in great detail the individual psychic functions (memory, attention, speech, thinking) - in the global view, the development takes place from the concrete to the general, from the mediated to the direct, from the external to the internal.

Thus, the changes concern not only the physical, but - what is of particular interest to us - the cognitive, personal, and social aspects. The development in the mentioned individual areas has an individual character, depending mainly on internal assumptions, influence of the family, educational, or, in the broader sense, social environment. As a result, interindividual differences, different onset, course and resulting picture of changes must be taken into account.

In the cognitive area, the age period can be characterised by the intensive development of speech and language skills, memory and memory based on the search for and understanding of logical and causal connections. Individuals move to a higher level of processing information or presented knowledge - thinking is more abstract, takes place at the level of symbolic thinking, uses general (abstract) concepts; in judging, deduction is applied and the acquired knowledge is verified in several ways. The child can think hypothetically, that is, thinking is not necessarily tied to reality or known facts. There are also more general thoughts - about the "world", about its future, about theoretical questions or about solving problems that are not directly related to his/her personality.

In the personal sphere, there is a greater emphasis on the development of one's own interests, which are more pronounced, and on the increase of internal motivation associated with this; on the other hand, there is a rejection of requests "from outside" if they do not correspond to one's own ideas. However, opinions and attitudes are to some extent subject to a subjective assessment of the situation and facts resulting from personal experience. A characteristic feature is independence, the importance of the "peer group" increases, and adults (especially parents and teachers) cease to be authorities automatically – there is an increase in the critical view of their activities, behaviour, their relationships to the child, to the personality.

These features do not occur immediately and in the same sequence but develop individually. Therefore, at the given age, we can observe relatively great differences within a group, a class. Teachers must be aware of the differences and adapt their work, teaching methods, forms and content to meet the sometimes-conflicting expectations of learners. Otherwise, there is a risk of loss of trust, authority, and sometimes even strict rejection.

An important component of an individual's actions is his/her motivation. This represents the driving force that leads to a certain behaviour, to the choice of strategies in specific conditions of activities. Motivation can be understood as a set of factors, drives for action, and is part of the characteristics of one's personality. It is related to interests, will, traits, emotional equipment, so with certain common features it has individual peculiarities - in similar situations the individual behaves in the same, characteristic way for him/her, chooses the same patterns for his/her actions.

Both motivated and unconscious processes are applied in motivation - a person behaves in a certain way not only intentionally, consciously choosing certain procedures, but also acts on the basis of internal motives, which express his/her personality as a characteristic feature. Motivation can be further distinguished as external - acting based on socially desirable motives, and internal,

when one's own interests are reflected, for example, in the effort to achieve good results, to be successful, to fulfil one's commitments to achieve something in the field of interests.

At the end of this stage of development, individuals decide on their future, facing a choice of further study as part of their professional orientation. The ideas about one´s success in a certain profession are for many learners, perhaps for most, not unambiguous or definitive, they are not entirely clear. They are determined only through general orientation, but not targeted at a specific profession – which is later specified due to new information, knowledge, better understanding of oneself, one`s capacities and limits, but also the influence of the environment (Langmeier, Krejčířová, 1998).

2. Current situation in Slovakia in the application of and research into CLIL

In Slovakia, CLIL has a tradition of more than fifteen years. As in other European countries, it has been implemented in several primary and secondary schools and their number is increasing.

In the years 2008 - 2012, the National Institute for Education (NIE) experimentally verified CLIL in primary schools as part of the project *Didactic Effectiveness of CLIL Methodology at the 1st Stage of Primary Schools in Foreign Language Teaching*. Based on the results of the verification, the Ministry of Education, Science, Research and Sport of the Slovak Republic (MESRS SR) recommends (under the number 2013-7494 / 31091: 3-921 of 3 July 2013) that in integrating CLIL into primary education at schools, the teaching of foreign language within a particular subject not exceed one third (33%) of the weekly hourly allowance for the subject. It is very important that the mother tongue is used extensively at the first stage of CLIL classes.

After the completion of the experimental verification of CLIL at the first stage of primary schools, the need arose to verify it at the second stage of primary schools. Therefore, the NIE developed a project of experimental verification entitled *CLIL Methodology in Lower Secondary Education,* which was approved by the Ministry of Education, Science, Research and Sport of the Slovak Republic on 11 November 2013 under the number 2013-17361 / 52642: 3-922.

The most common language of CLIL in Slovakia is English - taught in primary schools from the 3rd grade at the latest. The second CLIL language used in CLIL classes is German. In the past, there were also primary level of education where CLIL was also used to teach Spanish and French.

In primary schools, CLIL is mostly applied in foreign language lessons as the so-called soft CLIL, with its application being mostly episodic (only in selected lessons and topics). The choice of topics, teaching methods and tasks depends almost exclusively on the teacher's decision. The most numerous group of teachers who apply CLIL are non-native but qualified foreign language teachers or non-language teachers who have sufficient language competences in a foreign language.

As regards the type and grade of schools, the most widespread in Slovakia is the primary CLIL (Menzlová, 2012; Pokrivčáková, 2013d; Sepešiová, 2012a, 2012b), in which we differ from other countries (Dalton-Puffer, 2011). Similarly, high is the number of schools that apply CLIL at lower secondary level (usually those with good experience with CLIL in primary education). At the upper secondary level, CLIL is applied mainly by grammar schools, but in a much lower number compared to primary schools. It is rarely used in secondary vocational schools (Škodová, 2011).

The schools mainly make their first contacts with CLIL through the international Socrates and Erasmus projects, about which they report in detail on their websites. Many of them

also publish ready-made methodological materials and video recordings of lessons. They also present their experiences at professional conferences, workshops and seminars for schools that would like to get acquainted with the CLIL methodology and start applying it. Such events included, for example:

- *Foreign Languages and Cultures at Schools (Nitra, 2001 - 2013)*
- *Development of Foreign Language Skills of Children in the School and Family Environment (Bratislava, 2012)*
- *Content and Language Integrated Learning (CLIL) at ISCED 1 (Bratislava, 2012)*
- *Learning Together to Be a Better CLIL Teacher (Banská Bystrica, 2014)*
- *Current Challenges of Foreign Language Education in Slovakia: What Next? (Nitra, 2015)*
- *New Perspectives on CLIL, Bilingualism and Plurilingualism (Bratislava, 2016)*

2.1 Research projects

Research into CLIL is done mainly at the international level. Its results are regularly published in scientific journals, especially in *International CLIL Research Journal (ICRJ), International Journal of Bilingual Education and Bilingualism (IJBEB), Latin American Journal of Content & Language Integrated Learning* (LACLIL). The state of research into CLIL in Slovakia was mapped in detail by Pokrivčáková (2012, 2013 and 2015).

The Ministry of Education, Science, Research and Sport of the Slovak Republic financially supported several important projects the aim of which was to promote as well as scientifically verify the impacts and various aspects of the application of CLIL in Slovak schools. The projects included:

- *Innovations in Training of Foreign Language Teachers: CLIL and LLIL (KEGA 3/3036/05),*
- *Content Reform and Modernisation of Teaching Foreign Languages in Primary and Secondary Schools: Creating Conditions for Effective Application of the CLIL Methodology (KEGA 3/6308/08),*
- *Integration of Foreign Language Teaching Methodology CA-CLIL into Continuous Teacher Development at Secondary Vocational Schools (KEGA 094-024UKF-4/2010)*
- *Development of Higher Cognitive Functions of Learners in Integrated Education (KEGA 085ŽU-4/2011).*

In the years 2009 - 2013, the Ministry of Education, Science, Research and Sport of the Slovak Republic financed the project *Experimental Verification of the Didactic Effectiveness of the CLIL Pedagogical Approach in Foreign Language Teaching at Primary Schools* (Menzlová, Farkašová, Pokrivčáková, 2008; Pokrivčáková, 2010a). The research results were presented at many scientific and academic events and in several publications (Pokrivčáková, Menzlová, Farkašová, 2010; Menzlová, 2012; Farkašová, 2012; Pokrivčáková, 2013c). The experiment confirmed the positive impact of using CLIL, not only on learners' educational results, but also on their motivation (for more data, see Menzlová, 2012).

Based on the results of the above experimental verification, the Ministry formulated several recommendations for primary schools that are interested in applying CLIL in primary education (Ministry of Education, Science, Research and Sport of the Slovak Republic, online):

"In the event that a primary school decides to use the Content and Language Integrated Learning (CLIL) methodology in primary education, it shall comply with the following recommendations:

- the primary education teacher who will teach using CLIL methodology must also be qualified to teach the relevant foreign language,
- the integration of foreign language teaching into a subject in primary education must correspond to at least one quarter (25%), but not more than one third (33%), of the weekly hourly allowance of the given subject,
- knowledge from the subject matter is assessed exclusively in the mother tongue, a foreign language is not assessed in non-linguistic subjects,
- the school can choose one or more subjects (non-language); it is not recommended to use the CLIL methodology in language lessons. "

Slovak schools and institutions have also participated in several international research projects aimed at exploring various aspects of the pedagogical approach, such as:

- *Intensive Programme Crosscurricular Creativity* (ERASMUS, Žilinská univerzita),
- *eCLILt: 134321–2007–IT–Comenius-CMP* (COMENIUS, Žilinská univerzita),
- *Mobility-enhancing Science, Research and Education at UMB* (UMB Banská Bystrica)
- *Transnational Exchange of Good CLIL Practice Among European Educational Institutions 2015-1-SK01-KA201-008937* (Erasmus+, UKF Nitra).

The research into CLIL in Slovakia focuses mainly on 3 areas: learners' educational results (Farkašová, 2012; Gondová, 2012a; Kováčiková, 2013; Kubeš, 2012; Luprichová, 2013; Menzlová, 2012), needs and education of teachers (Hurajová, 2013; Luprichová, 2011; Menzlová, 2012; Pokrivčáková, 2013a, 2013b; Sepešiová, 2013), and such sociolinguistic aspects of CLIL as discourse, position of languages, code-switching, code-mixing, etc. (Gondová, 2012b; Králiková, 2013; Pokrivčáková, 2014).

In general, research has shown that respondents (learners and teachers) were convinced of the positive effects of CLIL on the quality of foreign language teaching (Gondová, 2012a, 2013; Luprichová 2013), and older learners even appreciated the more harmonious development of their communication skills in a foreign language (Kováčiková, 2013).

2.2 Teaching materials and examples of good practice

It is gratifying that as the number of research projects grows, so does the number of teaching and methodological materials for CLIL. Teachers especially appreciate materials directly adapted to the requirements of the Slovak national curriculum. At present, several methodological manuals and textbooks are available to teachers, including:

- *Active Learning Through CLIL* (Gondová, 2013a),
- *CLIL - a Dialogue Between the Language and Subject Teachers* (Cimermanová, 2017),
- *CLIL: Integrované vyučovanie obsahu a jazyka* [Content and Language Integrated Learning] (Gondová, 2013b),
- Využitie CLIL metódy v primárnom vzdelávaní: Osvedčená pedagogická skúsenosť edukačnej praxe [Use of the CLIL Method in Primary Education: Proven Pedagogical Experience of Educational Practice] (Janeková, 2013),
- Slovensko-anglicko-nemecký glosár odborných termínov obsahovo a jazykovo integrované vyučovanie v primárnom vzdelávaní CLIL ISCED 1 [Slovak-English-German Glossary of Technical Terms Content and Language Integrated Teaching in Primary Education CLIL ISCED 1] (Menzlová, 2014),
- Experimentieren auf Deutsch (Menzlová, 2018)
- CLIL, plurilingvizmus a bilingválne vzdelávanie [CLIL, Plurilingualism and Bilingual Education] (Pokrivčáková – Lauková, 2008)
- *CLIL in Foreign Language Education: E-textbook for Foreign Language Teachers* (Pokrivčáková et al., 2015).

At present, a number of examples of good practice have been published, with the authors being teachers themselves, or teacher trainers of individual foreign languages and non-linguistic subjects, including, for example, Dorotová (2012), Laučeková (2011), Lászlóová (2012), Moravčíková, Smetanová & Gunišová (2012), Pokrivčáková (2010b) and Trojčáková (2012). Inspirational materials for teaching social science subjects were published by Froľo (2011). Spišáková (2013) discussed CLIL in teaching physics. Vilčeková (2015) provided examples of CLIL application to mathematics and geography. Also Hurajová (2012) and Kubeš (2011, 2013) were concerned with the teaching of mathematics through CLIL. Suggestions for the use of CLIL in the development of reading literacy were published by Cimermanová (2015), Straková and Sepešiová (2015). The connection of CLIL and work with literary texts was tested by Pokrivčáková (2009) and Žemberová (2010).

3. Research objectives, hypotheses and methods

When defining the objectives and setting the hypotheses of the experimental verification of the project *CLIL Methodology in Lower Secondary Education*, we largely relied on the results of the previous project, since we also monitored the continuity of the application of this methodology to the first stage.

3.1 Research objectives

The primary aim of the project was to experimentally verify the effect of CLIL in lower secondary education on the educational results of learners in a foreign language.

Secondary aims included:

- monitoring the impact of the application of CLIL on the development of individual communication competencies in a foreign language,
- monitoring and analysing the dominant attitudes, methods, and forms of work of teachers who apply CLIL,
- identifying the attitudes of school managements to the application of CLIL,
- identifying the effect CLIL has on the motivation of learners to learn a foreign language.

Based on the results obtained, the additional aim was to formulate recommendations for teachers (school managements) who will decide/have decided to use CLIL in teaching process, select appropriate educational content and prepare a Slovak-English-German glossary of technical terms for certain secondary education areas at the second level of primary schools and a set of methodological materials (methodological sheets and worksheets) for teachers using CLIL in lower secondary education.

3.2 Research questions

The following research questions arise from the objectives of the experimental verification of CLIL:

- In which communication language activities will the learners of the experimental group achieve better test results than the learners of the control group?
- What will the difference be in test results between the experimental and control groups?
- How can teachers develop learners' communication language activities in CLIL lessons?
- In what way do teachers activate learners in CLIL classes?
- How can teachers motivate learners in CLIL classes?

- What will be the attitude of learners to teaching if the CLIL approach is applied?
- What will be the attitude of school management to teaching if CLIL is applied?
- What attitude will teachers have to teaching if the CLIL approach is applied?

3.3 Research hypotheses

Based on previous research findings from Slovakia and abroad, the research team formulated the following hypotheses:

H.1: Learners in experimental classes will achieve higher scores in foreign language vocabulary, in listening comprehension, in reading comprehension and in writing compared to learners in the control group.

H.2: Motivation of learners in experimental classes to learn a foreign language will reach a value above the average of a comparable age group of learners.

3.4 Research methods

The main research method was a pedagogical experiment, because the experimental method "as the only research method can prove the causal consequences of pedagogical action. It is able to prove how one educational phenomenon affects another" (Gavora et al., 2010). The experiment was also chosen because it is used to determine the effectiveness of the educational effect of a selected educational aspect (in our case, the CLIL pedagogical approach), which other research methods cannot directly prove (Gavora et al., 2010).

Variables

The integration of CLIL into teaching at the 2nd level of primary schools was an independent variable in the implemented experiment. The dependent variables in the experiment included:

- selected foreign language communication competencies of learners (measured by a test in a foreign language, which was also the working language of CLIL at a given school),
- extra-intellect factors of learners, such as interest, motivation, attitudes towards learning a foreign language / CLIL language which was also the working language of CLIL at the given school.

Secondary research methods

According to Gavora et al. (2010), in the implementation of the experiment, it is necessary to also use other research methods to obtain data on the subjects of the experiment - test, questionnaire, observation, scaling, sociometry, etc. The experiment used the following methods:

- testing learners' educational results in a foreign language,
- questionnaire,
- interview,
- observation.

Four psychological research methods were chosen (Performance Motivation Questionnaire, Our Class Questionnaire, Short Test, Interest Structure Questionnaire - their detailed description and justification are given in Chapter "Evaluation of the analysis of questionnaires within the psychological section categorised by individual years", three non-standardised pedagogical questionnaires for foreign language teachers (Annex 3), non-language teachers (Annex 4) and experimental validation coordinators (Annex 5), semi-conducted interview with teachers and school principals at the end of the project (Annex 8, 9), and direct observation in lessons with the application of CLIL (Annex 7).

The questionnaire was chosen as a research method that allows for obtaining a large amount of data from a diversified group of respondents in a short time (Gavora et al., 2010). Due to the research objectives and the limited size of the respondent group, we chose a questionnaire in qualitative design (Creswell, 2003).

For the purposes of experimental verification, three non-standardised questionnaires were prepared in cooperation with the experts involved to determine the attitudes and needs of teachers who used CLIL in their pedagogical activities as well as of coordinators of experimental verification. Their team was based on the results of current foreign (Banegas, 2012; Cammarata, 2009; Coonan, 2007; Frigols Martín, Marsh, Mehisto, & Wolff, 2011; Hunt, 2011; Pavón Vázquez & Rubio, 2010; Pena Díaz & Porto Requejo, 2008 and others) and domestic research findings (Gondová, 2012b; Hurajová, 2013; Pávová, 2015; Pokrivčáková, 2013a, 2013b, 2015).

The questionnaire for language teachers therefore consisted of five open items, a questionnaire for non-language teachers of six open items, and a questionnaire for experimental verification coordinators of eight items of which six were open and two semi-closed.

The questionnaires were piloted in April 2013 on a selected sample of 15 teachers from Slovak primary schools who had experience with CLIL. Based on their reactions and comments, several refinement adjustments were made to the questionnaires (especially in the introductory part). However, after two years of experimental verification and finding out the attitudes of the pedagogical staff involved, the questionnaire method was no longer effective because it did not bring new data. The research team therefore replaced it with an interview method. This method made it possible to "capture not only the facts, but also a deeper insight into the motives and attitudes of the respondents" (Gavora et al., 2010). Semi-structured individual interviews were conducted, taking place either directly or, if necessary (due to lack of time, long distance, inability to travel), indirectly (questions were sent to the respondents by e-mail). All final interviews with teachers and school principals (school

year 2017/18) took place in the form of direct individual interviews. Following the standard semi-structured interview procedure, some of the questions were prepared in advance, but during the interview the researcher could adjust their order and possibly add other explanatory questions as needed. No question from the fixed part of the interview could be left out. All fixed items of the interview were opened so that the respondents had the opportunity to express themselves freely on everything related to the application of CLIL in their own pedagogical practice.

Due to higher validity, the data obtained by questionnaires and interviews were confronted with the results of direct structured observation in the classes of experimental groups. Observers monitored the course of the teaching process in the experimental groups in person and recorded the observed categories in observation sheets (Appendix 7). More detailed descriptions of individual research methods are given in the relevant parts of the chapter on results of qualitative research.

The quantitative data obtained in the described experiment were processed by standard statistical procedures – the person responsible for this part (analysis of testing results in 2015 and 2018) of the research project was Prof. Pavol Prokop from Trnava University and Educational Results of Learners by Years were prepared by Beata Menzlová, National Institute for Education, Bratislava. Psychological measurements of learners' motivation (Evaluation of the analysis of questionnaires within the psychological section categorised by individual years) were conducted, and the quantitative data obtained were processed, by Eva Farkašová from Research Institute for Child Psychology and Pathopsychology in Bratislava.

The qualitative data obtained through questionnaires, interviews and direct observations were processed in accordance with procedures standard for qualitative research design (Gavora, 2010; Janíková et al., 2011; Hendl, Reml, 2017; Pokrivčáková et al., 2012; Švaříček, Šeďová, 2014).

3.5 Experimental sample

Schools
14 primary schools participated in the experimental validation of CLIL at lower secondary level (Annex 1). English was tested in 13 primary schools and German in 4, with German and English experimental CLIL classes in 3 schools.

Learners (experimental and control groups)
The composition of the experimental and control groups changed slightly during the project (departure of learners to another school due to a change of residence, transfer of learners to eight-year grammar schools, etc.), but these changes could not be influenced by the research team.

In the school year 2013/2014, 527 learners took part in the testing in October 2013 (445 learners were tested in English and 82 learners in German). The second testing was carried out in May 2014

on a sample of 554 learners (459 learners were tested in English and 95 learners in German). The control group for English and German consisted of 204 learners.

In the school year 2014/2015, the number of learners decreased significantly due to the above mentioned reasons (from 554 learners to 343 learners). The measurement was carried out by testing a group of 335 6th grade learners in October 2014 (264 learners were tested in English, 71 learners in German). The second testing was carried out in May 2015 on a sample of 343 learners (279 learners were tested in English and 64 learners in German). The control group for English and German consisted of 93 learners in October 2014 and 95 learners in May 2015.

In the school year 2015/2016, the measurement was carried out in the form of testing 337 learners of the 7th grade in October 2015. The second testing was carried out in May 2016 on a sample of 279 learners. The control group for the English language consisted of 108 learners in October 2015 and 84 learners in May 2016.

In the school year 2016/2017, the measurement was carried out in the form of testing 345 learners in October 2016. The second testing was carried out in May 2017 on a sample of 289 learners. The control group for the English language consisted of 118 learners in October 2015 and 86 learners in May 2016.

In the school year 2017/2018, we tested learners from the English language in October 2017, with 210 learners participating in the testing. The second testing took place in May 2018 on a sample of 205 learners. The control group for the English language consisted of 84 learners in October 2017 and 75 learners in May 2018. 86 learners took part in the German language test in October 2017. The second testing took place in May 2018 on a sample of 66 learners. The control group for the German language consisted of 28 learners in October 2017 and 38 learners in May 2018.

Teachers

The questionnaire survey involved pedagogical staff from all participating schools. The questionnaires (Appendix 3, 4) were filled in by a total of 22 teachers, of which 4 were men and 18 women with an average length of teaching experience of 7.25 years. Among the respondents were 5 beginning teachers with an experience of 1 year or less, but also 3 very experienced teachers with an experience of more than 20 years (the longest working teacher had an experience of 27 years). Most were teachers who had teaching experience between 3 and 12 years (14 teachers). 8 teachers were qualified to teach English as a foreign language, one teacher was a native English speaker with an international certificate authorising him to teach English. Other teachers (10) were qualified to teach subjects, especially science. 5 teachers were qualified to teach at primary level.

Coordinators of experimental verification

Each school involved was represented by one coordinator appointed by the school principal. The coordinators were teachers with longer teaching experience (14 - 22 years) and 8 of them were also chairmen of subject commissions at their school.

School principals

All 10 school principals who were in office at the time of the interviews were involved in the research (six were in office since the beginning of the project).

Research procedure

Experimental verification was carried out in the years 2013 to 2018. The National Institute for Education has cooperated since the elaboration of the project, its planning, implementation and evaluation of experimental verification, with the Faculty of Education of Trnava University in Trnava and the Research Institute for Child Psychology and Pathopsychology in Bratislava.

Planning and preparation

After the approval of the project by the Ministry of Education, a specification of concrete research conditions for primary schools was prepared. The National Institute for Education prepared agreements for mutual cooperation within the framework of experimental verification with 14 primary schools. (Annex 1).

Organisation and implementation

The experimental verification project was implemented in the years 2013 - 2018 in 14 primary schools and monitored the teaching of a foreign language within CLIL lessons in the 5th – 9th grades. The organisation of experimental verification was provided by the National Institute for Education. The implementation took place in experimental primary schools. CLIL coordinators and teachers in the individual experimental primary schools were responsible for carrying out the verification.

The attitudes, needs and experience of the pedagogical staff (teachers, principals, coordinators) of the participating schools were ascertained continuously during the experimental verification - at the end of the school year. Research methods included non-standardised questionnaires for language teachers (Annex 3), subject teachers (Annex 4) and experimental validation coordinators (Annex 5), as well as the questionnaire for learners, through which we aimed at finding out their attitude and opinions about foreign language teaching and CLIL lessons (Annex 6), direct observation in lessons with CLIL (Annex 7), and semi-conducted interviews with teachers and school principals at the end of the project (Annex 8).

It was assumed that the motivation of learners in experimental classes is influenced by various factors, e.g. attitudes of teachers, school management, organisation and implementation of CLIL lessons. In order to objectively verify the hypotheses, the author's team sought to obtain a comprehensive overview of the overall situation in schools and CLIL classes.

At the end of the 9th grade, a questionnaire was distributed to learners to obtain information about their attitudes and opinions on foreign language teaching and CLIL lessons, as well as on self-assessment, to find out what learners can do in a foreign language, how they relate to foreign language and how they assess the benefits of CLIL lessons.

Selection of schools

The involvement of schools in the project was on a voluntary basis, with most of the schools that registered also participating in the previous project. Some schools involved in the previous project could not continue since they did not have CLIL teachers, i.e. teachers of vocational subjects who would be able to teach the subject not only in their mother tongue but also in a foreign language. The condition for the school's participation in the project was its having at least one CLIL subject, that is, a non-linguistic subject. As such, any of the following could be one of the subjects within the educational areas Man and Nature (Biology, Physics, Chemistry), Man and Values (Religious Education and Ethical Education), Man and Society (History, Geography, Civics), Mathematics and Work with Information (Mathematics, Informatics), Arts and Culture (Music and Art Education), Health and Exercise (Physical Education and Sports Education). Experimental schools could choose the subject themselves according to their conditions and possibilities.

Teachers and coordinators

CLIL lessons were prepared and taught by teachers of the relevant subjects. When preparing the project of experimental verification, we also took into account the complexity of preparing CLIL lessons, especially in terms of time. For this reason, a basic condition was set, that is, teachers were required to prepare and teach a CLIL lesson at least once a month as part of an experimental verification. The topics were not predetermined, teachers could choose them by themselves. The introductory training emphasised to teachers that the choice of topic is very important from two aspects: first, it is necessary to choose a topic that is already familiar to learners, for the most part they know the information already in their mother tongue, and therefore it may be more manageable for them to discuss it and its new aspects in a foreign language. Secondly, language objectives need to be well planned and language support prepared for learners to master communication and professional terminology in a foreign language. This is because the learners' language level is not yet such that they can communicate within the subject without support. Language preparation is carried out directly in the subject lesson, in contrast to bilingual schools, where learners learn the subject in a given language and preparation for the language is usually carried out in the first year.

The organisation of teaching in individual schools and communication with the school management and the National Institute for Education were provided by the CLIL coordinators. Their role was to manage and train CLIL teachers within their schools and, if necessary, to help them prepare lessons. The coordinators participated in coordination meetings and trainings organised by the National Institute for Education. At these meetings, not only were procedures within the project discussed, but also the problems that arose continuously were addressed.

The National Institute for Education set up a portal for the duration of the CLIL project, to which not only coordinators but also CLIL teachers from experimental schools had access. A model lesson plan was prepared for CLIL teachers to help them plan CLIL lessons. In each school year, the coordinator published at least 8 lesson plans for one CLIL subject. Teachers

from the participating schools therefore had the opportunity to exchange experience and gain inspiration for their own lessons.

Learners

The research sample consisted of learners of the 5th – 9th grades of experimental and control classes. The choice of classes within a school was the responsibility of teachers and school management. In experimental classes, learners learned a given foreign language (English or German) in CLIL classes from the first year. They completed at least one lesson of CLIL per month (except for December and June), i.e. at least 8 lessons in one school year. Thus, during the project, it was at least 24 lessons of CLIL from one subject. In the control classes, the foreign language was taught from the 1st year only in foreign language classes. In several cases, the control classes merged with experimental classes after the 5th grade, as many learners from the experimental classes were admitted to eight-year grammar schools.

4. Analysis of research data

As part of the verification process, the research data were obtained from testing learners in a foreign language, from questionnaires, from interviews with teachers as well as from school management, and from observations of lessons.

4.1 Results of quantitative research

Every year, in both the experimental and control classes, input and output testing in a foreign language was performed. All test tasks were focused on the identification of language communication activities - listening comprehension, reading comprehension and writing. In addition, the test also included the testing of vocabulary in context, focusing on general vocabulary, not on technical terms from individual CLIL subjects. The aim of the testing was to find out the increase in learners' knowledge of a foreign language during the school year. In the 5th – 6th grades, tests were developed for the communication language level A1 and in the 7th – 9th grades for the communication language level A2.

Learners' results by grade
During the 5 years, the learners of the experimental and control groups were tested at the beginning and at the end of the school year at the same time; the coordinators were responsible for administering the tests. Uncorrected school tests were sent to the National Institute for Education, where they were all evaluated by one person.

4.1.1 Results in the school year 2013/2014

In the school year 2013/2014, 527 learners took part in testing in October 2013 (445 learners were tested in English, 82 learners in German). The second testing took place in May 2014 on a sample of 554 learners (459 learners were tested in English and 95 learners in German). The control group for English and German consisted of 204 learners. Tests in English and German were designed for communication language level A1.1.

English language
English language testing took place in 13 experimental schools, using the Cambridge Young Learners Test.

The initial language level of the learners of the experimental group was lower at the beginning of the school year (71.03%) than for the learners of the control group who reached up to 75.48% at the beginning of the school year. The difference between the two groups was 4.45%. At the end of the school year, we can observe balanced results in both groups. The experimental group improved by 13.34% during the school year compared to the control group which improved by 4.99%. The data are shown in Tables 1 and 2.

Table 1 Success of learners in experimental classes in the school year 2013/2014 - English language

Task	Success rate in % in October 2013	Success rate in % in May 2014
1. listening comprehension	81,55	89,85
5. reading comprehension	60,5	78,9
Average learner success	**71,03**	**84,37**

Table 2 Success of learners in control classes in the school year 2013/2014 - English language

Task	Success rate in % in October 2013	Success rate in % in May 2014
1. listening comprehension	87,07	88,35
5. reading comprehension	63,9	72,6
Average learner success	**75,48**	**80,47**

In a free description of the picture, the experimental group received a total of 11,230 points in October 2013, which represents an average of 43.35 points per student. In May 2014, the total score was 13,296 points, i.e. an average of 50 points per student.

In October 2013, the control group achieved a total of 6,574 points, which represents an average of 35 points per student. In May 2014, the control group received 7,671 points, i.e. 41.7 points on average per student. It can be stated that the description of the image without a template caused more problems for the learners of the control group.

German language

Testing in German was performed in 4 experimental schools using the model test ÖSD A1 Kompetenz in Deutsch 1.

The initial language level of the learners in the experimental group was slightly higher at the beginning of the school year (67.09%) than the level of the learners in the control group, which reached 62.64%. At the end of the school year an improvement in both groups can be seen. The experimental group improved compared to the beginning of the school year by 8.99% and the control

group by 4.4%. The experimental group achieved a 9% better score in the test than the control group. The biggest difference occurred in writing, where learners in the experimental group improved by 11.7%, while learners in the control group got 0.9% worse results. The data are shown in Tables 3 and 4.

Table 3 Success of learners in experimental classes in the school year 2013/2014 - German language

Task	Success rate in % in October 2013	Success rate in % in May 2014
1. listening comprehension	82,47	88,03
4. reading comprehension	64	73,7
5. writing	54,8	66,5
Average learner success	**67,09**	**76,08**

Table 4 Success of learners in control classes in the school year 2013/2014 - German language

Task	Success rate in % in October 2013	Success rate in % in May 2014
1. listening comprehension	86,83	91,53
4. reading comprehension	68,6	76
5. writing	34,5	33,6
Average learner success	**62,64**	**67,04**

4.1.2 Results in the school year 2014/2015

Due to objective reasons in the school year 2014/2015, the number of monitored learners decreased significantly (from 554 to 343). For experimental verification, this also resulted in a reduction in the number of control groups, and sometimes it was necessary to merge the learners of the experimental group and the learners who did not have CLIL lessons in the 5th grade.

The measurement was carried out in the form of testing 335 learners of the 6th grade in October 2014 (264 learners in English, 71 learners in German). The second testing was carried out in May 2015 on a sample of 343 learners (279 learners were tested in English and 64 learners in German). The control group for English and German consisted of 93 learners in October 2014 and 95 learners in May 2015.

English language

English language testing took place in 13 experimental schools. Learners were given a non-standardised test, created for language level A1, which contained parts for listening and reading comprehension, vocabulary and writing. The results obtained are shown in Tables 5 and 6.

Table 5 Success of learners in experimental classes in the school year 2014/2015 - English language

Task	Success rate in % in October 2014	Success rate in % in May 2015
1. listening comprehension	86,56	91,5
2. reading comprehension	68,5	76,83
3. vocabulary	72,14	69,73
4. writing	71,69	76,05
Average learner success	**74,72**	**78,53**

Table 6 Success of learners in control classes in the school year 2014/2015 - English language

Task	Success rate in % in October 2014	Success rate in % in May 2015
1. listening comprehension	73,87	86,97
2. reading comprehension	51,8	70,88
3. vocabulary	43,37	56,96
4. writing	50,46	69,24
Average learner success	**54,84**	**71,01**

In the school year 2014/2015, we can observe that at the end of the year, both groups achieved better results. However, at the end of the school year learners in the experimental group had +7.52% better scores than learners in the control group. Nevertheless, we can observe an improvement during the school year in the control group by up to 16.2% and for the learners of the experimental group by only 3.81%. It must be stated that these results were influenced by the departure of learners from the experimental group to eight-year grammar schools. The classes were merged and learners who were not in the 5th grade in the experimental group were also included in the groups.

German language

German language testing took place in 4 experimental schools. A non-standardised test prepared for language level A1 was used. The test contained parts for listening and reading comprehension, vocabulary and writing. Learner results are shown in Tables 7 and 8.

Table 7: Success of learners in experimental classes in the school year 2014/2015 - German language

Task	Success rate in % in October 2014	Success rate in % in May 2015
1. listening comprehension	72,17	88,37
2. reading comprehension	61,51	78,19
3. vocabulary	73,33	83,33
4. writing	38,3	66,5
Average learner success	**61,33**	**79,10**

Table 8: Success of learners in control classes in the school year 2014/2015 - German language

Task	Success rate in % in October 2014	Success rate in % in May 2015
1. listening comprehension	50,92	60,94
2. reading comprehension	61,11	63,33
3. vocabulary	47,03	52,92
4. writing	47,77	60,62
Average learner success	**51,71**	**59,45**

In the school year 2014/2015, in the tests from in German language, in contrast to the English language, a significant improvement of the learners of the experimental group was recorded. The control group improved by 7.74% during the school year. In the experimental group, there was a significant improvement in the second measurement, by up to 17.77%. It is assumed that the intensity of CLIL lessons was higher.

4.1.3 Results in the school year 2015/2016

In the school year 2015/2016, the measurement was carried out by testing a group of 337 learners in the 7th grade in October 2015. The second testing was carried out in May 2016 on a sample

of 279 learners. The control group for the English language consisted of 108 learners in October 2015 and 84 learners in May 2016.

English language

English language testing took place in 13 experimental schools. The learners were administered a non-standardised test prepared for language level A2.1. The test contained parts for listening and reading comprehension, vocabulary and writing. Learners' results are shown in Tables 9 and 10.

Table 9 Success of learners in experimental classes in the school year 2015/2016 - English language

Task	Success rate in % in October 2015	Success rate in % in May 2016
1. listening comprehension	87,44	85,20
2. reading comprehension	79,66	78,84
3. vocabulary	74,3	77,32
Average learner success	**80,47**	**80,45**

Table 10 Success of learners in control classes in the school year 2015/2016 - English language

Task	Success rate in % in October 2015	Success rate in % in May 2016
1. listening comprehension	68,82	76,58
2. reading comprehension	55,55	63,37
3. vocabulary	57,41	57,88
Average learner success	**60,59**	**61,88**

At the end of the school year 2015/2016, learners of the control group achieved 1,29% better results in testing (listening, reading comprehension and vocabulary) when compared to its beginning.

Nevertheless, when the results of the learners of the experimental and control groups at the end of the school year are compared, the result is that the learners of the experimental group scored 15.27% better in the three parts of the test (listening and reading comprehension and vocabulary).

The final part of the test, writing, was an open task. The experimental group obtained a total of 1,359.5 points in the first measurement, which represents an average of 5.9 points per student. In May 2016, the total score was 1,646.5 points, i.e. 8.5 points on average.

In October 2015, the control group received a total of 302.5 points, which represents an average of 2.8 points per student. In May 2016, learners scored 360 points, an average of 4.2 points per student.

It can be stated that in the description of an image, in the open task, the experimental group was over 50% more successful than the control group. It is assumed that the increased number of hours in the experimental group is most manifested in the area of writing. In CLIL lessons, learners consolidate their vocabulary, repeat certain structures, and therefore can better describe the picture.

4.1.4 Results in the school year 2016/2017

In the school year 2016/2017, a group of 345 learners was tested in October 2016. The second testing took place in May 2017 on a sample of 289 learners. .

English language

English language testing took place in 13 experimental schools. A non-standardised test for communication language level A2.1 was used. Listening and reading comprehension, vocabulary and writing were tested. Learners' results are shown in Tables 11 and 12.

Table 11 Success of learners in experimental classes in the school year 2016/2017 - English language

Task	Success rate in % in October 2016	Success rate in % in May 2017
1. listening comprehension	74,3	80,2
2. reading comprehension	65,4	76,2
3. vocabulary	68,9	74,7
Learner success	69,53	77,03

In the 2016/2017 school year, the experimental group achieved an improvement of almost 6% compared to the beginning of the school year in the parts of the listening comprehension and vocabulary. In the part of reading comprehension, it achieved the best results - an improvement of 10.8%.

Table 12 Success of learners in control classes in the school year 2016/2017 - English language

Task	Success rate in % in October 2016	Success rate in % in May 2017
1. listening comprehension	72,1	75,6
2. reading comprehension	55,6	61
3. vocabulary	56,5	51
Learner success	61,4	62,5

In the test results (listening and reading comprehension and vocabulary) of the control group, we observe an improvement of 1.1%. In the results in the vocabulary section, learners achieved worse scores, decreasing by 5.5%. It is assumed that the learners did not pay enough attention to vocabulary in the lessons.

The last part of the test was an open task testing writing.

In October 2016, the experimental group received a total of 782.5 points in writing, which represents an average of 5 correct sentences per student; in May 2017, it received a total of 1,022.5 points, which represents an average of 6.9 correct sentences.

In October 2016, the control group received a total of 192 points (on average 3.3 correct sentences). In May 2017, it achieved 226 points (on average 4 correct sentences).

It can be stated that in the open task, writing a reply to e-mail, the experimental group was more successful than the control group. It is assumed that the learners communicated more in a foreign language during the CLIL lessons and this was also reflected in the writing. Learners in the experimental group were able to formulate sentences better than in the control group.

In the school year 2016/2017, the experimental group achieved significantly better results in all parts of the test than the control group.

4.1.5 Results in the school year 2017/2018

The school year 2017/2018 was the last year of experimental verification. For this reason, more detailed results of learners in each test item are presented.

In the given school year, the English language measurement was carried out in October 2017 in the form of testing which was attended by 210 learners. The second testing took place in May 2018

on a sample of 205 learners. The control group for the English language consisted of 84 learners in October 2017 and 75 learners in May 2018. 86 learners took the German language test in October 2017. The second testing took place in May 2018 on a sample of 66 learners. The control group for the German language consisted of 28 learners in October 2017 and 38 learners in May 2018.

English language

English language testing took place in 13 experimental schools. A non-standardised English language test was developed for communication language level A2 (Appendix 9).

The first part of the test followed listening comprehension, where learners had to solve 3 tasks.

In the first task, the learners listened to Tom talk to his friend about a sports afternoon. Based on the recording, the learners had to assign what sport their friends did. In the given task, the learners could achieve the maximum number of points 5. The overall success rate of the learners of the experimental classes in this test task was 92.95% in October 2017 and 95.55% in May 2018. At the end of the school year, the results improved by 2.5%.

The success rate of learners from the control groups in this test task was 79.23% in October 2017 and 88.4% in May 2018; compared with the results at the beginning of the school year, the learners of the control groups improve by 9.17%.

In the second task, the learners had to choose the right answer from three options based on the interview between Jenny and her friend Mark talking about buying a computer game. In the given task, learners could achieve the maximum number of 5 points.

The success rate of learners in experimental classes in this test task in October 2017 was 90.45% and in May 2018 it was 93.86%. At the end of the school year, a 3.41% improvement in the results of learners in the experimental group could be observed.

The success rate of learners from the control group in this task was 79.23% in October 2017 and 90% in May 2018. Compared with the results at the beginning of the school year, the learners of the control group achieved an increase in the score by 10.77%.

Although the improvement in the control group is higher in the first and second tasks than in the learners of the experimental group, the experimental group reached 95.45% in the first task and 93.86% in the second task which means that learners reached level A2 by listening at the end of the school year.

In the third task, the learners heard an interview between an information office worker and a man who needed information about the train. Learners had to write the correct information in the table. It was possible to achieve a maximum of 5 points in the task.

The success rate of learners in experimental classes in the third test task was 66.70% in October 2017 and 67.45% in May 2018. At the end of the school year, a 0.75% improvement was observed.

In October 2017, the success rate of learners from control classes in this test task was 56.54% and in May 2018 it was 62%. Compared with the beginning of the school year, the learners of the control group achieved a 5.46% improvement.

If the experimental group in listening comprehension is compared with the control group, it can be stated that the experimental group reached the language level A2 at 85.59% and a control group of 80.13%. At the same time, in the 5th year, the learners of the control group in the A1 language level had better entry results (82.44%) than the learners of the experimental group (77.37%).

The second part of the test examined reading comprehension. In this part, learners had to solve 2 tasks.

In the first task, learners had to add missing sentences to the telephone conversation. In the given task, the learners could reach the maximum number of points (7).

The overall success rate of learners in experimental classes in this test task was 73.44% in October 2018 and 69.64% in May 2018. At the end of the school year, a slight decrease in the results of the learners in the experimental group was observed.

The overall success rate of learners from the control group in this test task was 61.54% in October 2017 and 63.51% in May 2018. Compared with the results from the beginning of the school year, the learners in the control classes achieved an increase of 2.17%.

In the second task, the learners had to read an article about a student and then decide whether the statements are true or false or the information is not given in the text. Learners could achieve a maximum of 8 points.

The overall success rate of learners in experimental classes in the task was 66.4% in October 2017 and in May 2018 it was 67.4%. At the end of the school year, we observed an improvement in the results of the learners of the experimental group by 1%.

The overall success rate of the control group learners in the task was 64.42% in October 2017 and in May 2018 it was 62.5%. Compared to the data from the beginning of the school year, the score decreased by 1.92%.

The third part of the test focused on vocabulary and consisted of 3 tasks.
In the first task, learners had to read a postcard and add missing words to the text. Learners could reach the maximum number of points (5).

The overall success rate of learners in experimental classes was 90.68% in October 2017 and in May 2018 it was 93.86%. At the end of the school year, we found a significant improvement in results by 3.18%.

The overall success rate of control class learners was 84.23% in October 2017 and 87.2% in May 2018. Compared to the results from the beginning of the school year, there was an increase of 2.79%.

In the second task, learners read descriptions of some jobs and had to decide what kind of job it was. The maximum number of points in the task was 5.

The overall success rate of learners in experimental classes in this test task was 70.34% in October 2017 and 76.02% in May 2018. At the end of the school year, we found a significant improvement in results of 5.68%.

In the third task, learners had to name the basic parts of the notebook; the maximum number of points was 5.

The overall success rate of learners in experimental classes was 81.7% in October 2017 and in May 2018 it was 85.06%. At the end of the school year, learners' results improved by 4.06%.

The overall success rate of control group learners was 76.35% in October 2017 and 81.5% in May 2018. At the end of the school year, the learners of the control group achieved an increase of 5.45%.

These data can be clearly seen in Tables 13 - 14.

Table 13 Success of learners of the control group in communication activities listening and reading comprehension and vocabulary in the school year 2017/2018 - English language

Task	Success rate in % in October 2017	Success rate in % in May 2018
1. listening comprehension	83,37	85,57
2. reading comprehension	69,92	68,52
3. vocabulary	80,91	84,98
Average success	**78,1**	**79,69**

The overall success rate of learners in experimental classes was 78.1% in October 2017 and in May 2018 it was 79.69%. At the end of the school year, learners' results improved by 1.59%.

Table 14 Success of learners of the control group in communication activities listening and reading comprehension and vocabulary in the school year 2017/2018 - German language

Task	Success rate in % in October 2017	Success rate in % in May 2018
1. listening comprehension	71,67	80,13
2. reading comprehension	62,98	63,10
3. vocabulary	74,81	77,95
Average success	**69,82**	**73,73**

The overall success rate of learners in the control group of classes in October 2017 was 69.82% and in May 2018 it was 73.73%. Compared to the results from the beginning of the school year, learners improved by 3.91%.

The fourth part of the test was devoted to independent writing. In this part, the learners had only one task: to write an e-mail to a friend from England and to describe to him the place where he lives, what he likes about the place, what can be done there. The correctness of sentences and words was taken into account in the scoring. In the given task, learners received one point for each correct sentence.

In October 2017, the experimental group received a total of 1,439 points, which represents an average of 11.42 points per student. In May 2018, it was a total of 1,157 points, which represents an average of 8.9 points per student.

In October 2017, the control group received a total of 319.5 points, which represents an average of 3.8 points per student. In May 2018 it had a total of 211.5 points, i.e., 2.82 points on average per student.

As a possible reason to explain the worsening results, CLIL teachers identify the fact that learners had fewer CLIL hours since they were preparing for entrance exams. As a second reason, they provide the difficulty of topics in a foreign / English language.

German language

Testing in German was carried out in only 2 schools with experimental groups and 1 school with a control group.

86 learners took part in the testing in the German language in October 2017. The second testing took place in May 2018 on a sample of 66 learners. The German-speaking control group consisted of 28 learners in October 2017 and 38 learners in May 2018.

The standardised Goethe Zertifikat A2 Fit test was chosen for the German language. The test consisted of three parts: listening and reading comprehension and writing.
Figures are given in Tables 15 - 16.

Table 15 Success of learners of the experimental group in communication activities listening and reading comprehension and writing in the school year 2017/2018 - German language

Task	Success rate in % in October 2017	Success rate in % in May 2018
1. listening comprehension	63,25	66,68
2. reading comprehension	56,35	67,1
3. writing	44,4	66,89
Average success	**54,7**	**66,89**

Table 16 Success of learners of the control group in communication activities listening and reading comprehension and writing in the school year 2017/2018 - German language

Task	Success rate in % in October 2017	Success rate in % in May 2018
1. listening comprehension	76,85	44,2
2. reading comprehension	63,4	48,7
3. writing	43,65	32,9
Average success	**61,3**	**41,93**

The first part of the test was focused on listening comprehension. Learners had to solve 4 tasks. In the first task, they had to read an article from a magazine and choose the correct answer. In the given task, learners could achieve the maximum number of points (5).

The success rate of learners in the experimental group was 54.6% in October 2017 and in May 2018 it was 75.8%. At the end of the school year, we observed an improvement of 21.2%.

The success rate of learners from the control group in this test task was 54.7% in October 2017 and in May 2018 it was 43.2%. Compared to the result from the beginning of the school year, we observed a 11.5% worsening.

In the second task, learners had to read the program and determine where each event took place. In the given task, learners could reach the maximum number of 5 points.

The success rate of learners in the experimental group was 66.9% in October 2017 and in May 2018 it was 79.2%. At the end of the school year, the results improved by 12.3%.

The success rate of learners in the control group was 67.4% in October 2017 and 61.5% in May 2018. Compared to the results at the beginning of the school year, we recorded a decrease of 6.3%.

In the third task, learners had to find the right information in e-mail. In the given task, learners could achieve the maximum number of points 5.

The success rate of learners in the experimental group was 57.7% in October 2017 and 54.5% in May 2018. At the end of the school year, we could observe a deterioration in the results of learners in the experimental group by 3.5%.

The success rate of the learners of the control group was 76.8% in October 2017 and in May 2018 it was 61.1%. Learners' results deteriorated by 15.7% at the end of the school year.

In the fourth task, 5 young people on the school website are looking for a job for the summer. Learners had to choose a suitable advertisement for each of the five young people. In the given task, learners could achieve the maximum number of 5 points.

The success rate of learners in the experimental group was 46.2% in October 2017 and 59.2% in May 2018. At the end of the school year, the results improved by 13%.

The success rate of learners from the control group was 54.7% in October 2017 and in May 2018 it was 34.7%. Their results had deteriorated by 20% compared to the result from the beginning of the school year.

The second part of the test was focused on understanding. Learners had to solve 4 tasks in this part.

In the first task, learners listened to 5 short texts, each text was listened to twice. In each task, they had to choose one correct answer from 3 options. Learners could achieve a maximum of 5 points here.

The success rate of the learners of the experimental group in this test task was 55.4% in October 2017 and in May 2018 it was 80%. At the end of the school year, we found an improvement in the results of learners in the experimental group by 24.6%.

The success rate of learners from the control group in this test task was 66.3% in October 2017 and 35.5% in May 2018. We observed here that compared to the beginning of the school year, the results had decreased by 30.5%.

In the second task, the learners listened to a dialogue in which they learned what Julia and her friends were doing over the weekend. They listened to the text only once. Learners had to assign pictures to people according to the text they heard. In the given task, learners could reach the maximum number of 5 points.

The success rate of the learners of the experimental group in this task was 78.3% in October 2017 and in May 2018 it was 66.7%. At the end of the school year, the results decreased by 11.6%.

The success rate of learners in the control group was 97.9% in October 2017 and 52.6% in May 2018. Learners' results decreased by 45.3% at the end of the school year.

In the third task, learners listened to 5 short texts. They only heard each text only once. When asked, they had to choose the right picture from three options. In the task, learners could reach the maximum number of 5 points. The success rate of the learners of the experimental group in this test task was 43.1% in October 2017 and in May 2018 it was 47.5%. At the end of the school year, we observed a small improvement in results of 4.4%. The success rate of learners from the control group in the task was 76.8% in October 2017 and in May 2018 it was 61.1%. For learners, the result decreased by 15.7% compared to the beginning of the school year.

In the fourth task, learners listened to an interview. They listened to the text twice. Based on what was heard, they had to decide whether the statements were true or false. In the task, learners could reach the maximum number of 5 points. The success rate of learners in the experimental group was 76.2% in October 2017 and 72.5% in May 2018. At the end of the school year, there was a slight decrease in results of 3.7%. The success rate of the learners of the control group was 76.8% in October 2017 and in May 2018 it was 61.1%. At the end of the school year, the result of the learners decreased by 15.7%.

The third part of the test focused on productive activity, on independent writing. Learners in this part had 2 tasks. In the first task, they had to write an SMS to a girlfriend, whom they were to apologise for a delay, write why they were late and suggest a new place and date of the meeting. In the task, learners could achieve a maximum of 10 points. The success rate of the learners of the experimental group in this test task was 50% in October 2017 and in May 2018 it was 50.8%. At the end of the school year, we observed a small improvement in results of 0.8%. The success rate of control group learners in this test task was 52.6% in October 2017 and 36.3% in May 2018. Compared to the result from the beginning of the school year, there was a deterioration of 16.3%.

In the second task, the learners had to write an e-mail on behalf of a new student in the class whom the teacher had invited to the party, they were to thank the teacher for that, ask how they could

help and ask for directions. In the task, they could get a maximum of 10 points. The success rate of learners in the experimental group in this test task was 38.8% in October 2017 and 52.5% in May 2018. At the end of the school year, we observed an improvement in the results of learners in the experimental group by 13.7%. The success rate of learners from the control group in this test task was 34.7% in October 2017 and 29.5% in May 2018. In comparison with the result from the beginning of the school year, we observed a deterioration of 5.2%.

When all the tasks in reading comprehension are summarised, the learners of the experimental group achieved an improvement of 10.75%, in listening comprehension by 3.43% and in writing by 22.49%. In the test, the experimental group improved by 12.19%. By contrast, the control class deteriorated by 14.7% in reading comprehension, 32.65% in listening comprehension, and 10.75% in writing. In the test, the overall control group deterioration was 19.37%.

Learners in the experimental and control groups wrote the tests after their entrance exams for a secondary school. It may be assumed that they were no longer focused or motivated to pass the test as best they could.

4.2 Analysis of testing results in 2015 and 2018

For the analysis of testing results from English and German, the 6th grade was selected as entrance testing and the 9th grade as output testing. The 6th grade was chosen because we needed respondents who participated in the entrance and exit testing. After the 5th grade, learners from experimental classes went to eight-year grammar schools. If the 5th grade were to have been analysed, the results would be significantly better. The results were also influenced by the fact that the schools merged the classes and learners who did not have CLIL lessons in the 5th grade were included in the experimental group.

Research sample

In 2015, 401 learners (205 girls and 196 boys) from 15 schools took part in the research (Table 21). A total of 243 learners belonged to experimental classes and 158 learners belonged to control classes.

After omitting respondents who did not participate in all of the tests (beginning and end of the school year of 2015 and 2018), the number of respondents was reduced to N = 111 (Table 22). These respondents were included in the statistical analyses (N = 94 from the experimental group and N = 17 from the control group).

Data reliability

The reliability of data was tested using Cronbach's alpha. Both the correlation matrix and calculation of average correlations of individual items in each year confirmed that all items correlate together (the average correlation between items in 2015 was 0.3 and in 2018 it was

0.37), i.e., if the student achieved a high score in the test of listening comprehension, then he/she also achieved a high score in writing or reading. For this reason, we evaluated all items with one reliability test. Moreover, calculating the reliability for writing would have been impossible, as this item was represented by a single task. Scores obtained at the beginning and end of the school year 2015 (α = 0.75 and 0.76) and in 2018 (α = 0.75 and 0.78) achieved high reliability. According to methodological recommendations (Nunnaly, 1978), the test-retest reliability was equally excellent (split-half α (2015) = 0.90 and α (2018) = 0.90).

Statistical data analysis

The statistical analysis was done by Pavol Prokop and complemented by Beata Menzlová.

Data distribution

The total scores obtained at the beginning and at the end of the school year were subjected to the test of normal distribution (Kolmogorov-Smirnov test for one selection) to find out whether parametric statistics could be used. The score had a normal distribution (Komogorov-Smirnov test, all P> 0.2), so parametric statistical tests were used.

Analysis of differences between groups

To analyse the impact of the experiment on the learners' final scores, we used a Linear Mixed Model (LMM), in which the type of group (experimental and control) and the test repetition time were defined as categorical predictors. The repetition time was also defined as repeated measures. Using analysis of variance (ANOVA), we found that there was a significant difference in the overall score between the experimental and control groups at the beginning of the 2015 school year (ANOVA, $F(1,109) = 7.55$, $P = 0.007$), because the experimental group ($M = 37.23$, $SE = 1.05$, $N = 94$) achieved a higher summary score than the control group ($M = 29.82$, $SE = 2.48$, $N = 17$). For this reason, we defined the score of the test (e.g. listening, reading) at the beginning of the school year as the so-called covariate (continuous predictor), which allowed us to "cleanse" the results of this potentially negative impact (Isaac and Michael, 1972). We defined the schools where the research and ID respondents took place as the so-called random factors. Averages (M) are presented with standard errors (± SE). We performed statistical tests using SPSS ver. 23.

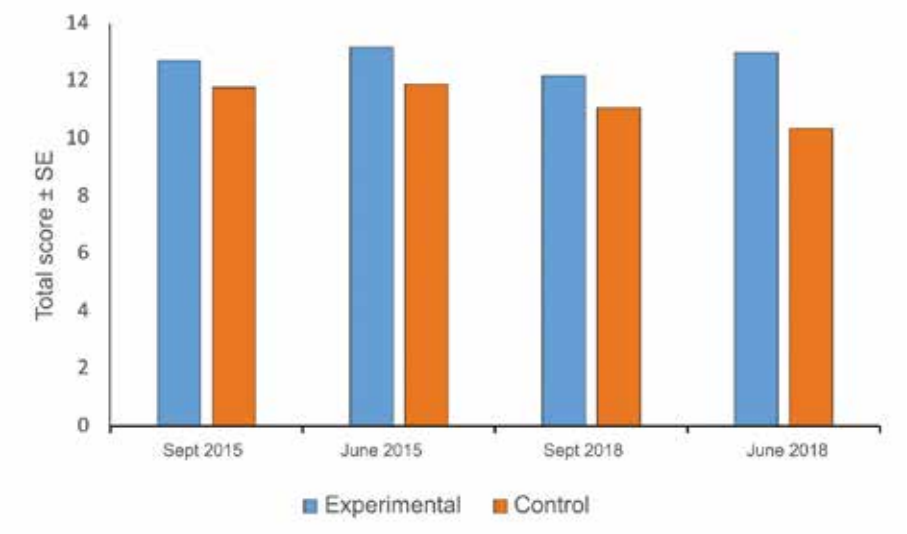
Results

Listening

Analysis by LMM confirmed that there was a statistically significant difference between the experimental and control groups ($F1.58.6 = 18.23$, $P < 0.001$). The experimental group scored higher in all measurements than the control group (Graph 1). Similarly, however, the results were affected by the time of testing ($F2,118,72 = 4,53$, $P = 0,013$) as well as by the interaction between the two variables ($F2,118,72 = 3,10$, $P = 0,049$). This means that at the end of the school year, results were better than at the beginning, which was especially true for the experimental group. In the control group, the score at the end of the 2018 school year was lower than at the

beginning (Chart 1). The results were also affected by the covariate, i.e. learners who achieved a high score in September were also highly likely to score high in June ($F_{1,19,21} = 63,78$, $P < 0,001$).

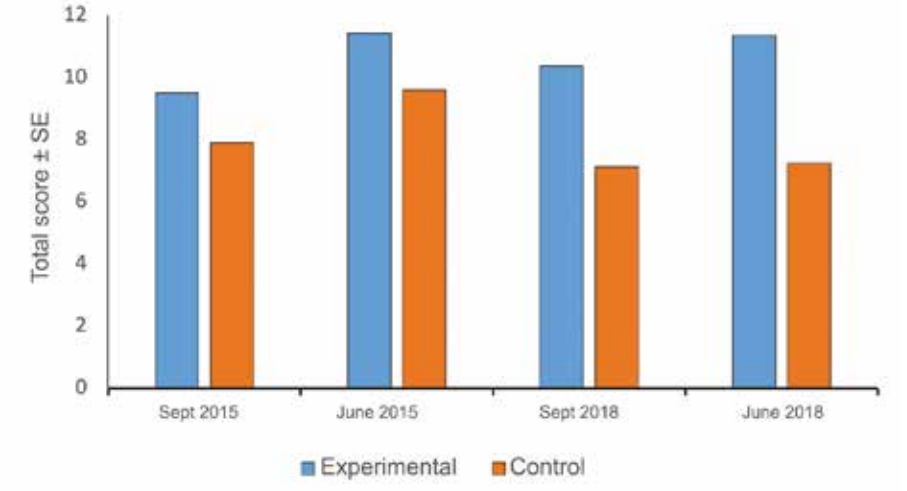
Graph 1 Total scores in groups in the category "listening"



Reading

LMM analysis confirmed that there was a statistically significant difference between the experimental and control groups ($F_{1.85.1} = 26.16$, $P < 0.001$). The experimental group scored higher in all measurements than the control group (Graph 2). Similarly, however, the results were affected by the time of testing ($F_{2.111} = 8.97$, $P < 0.001$), the interaction between the two variables ($F_{2.111} = 3.68$, $P = 0.03$). This means that at the end of the school year the results were better than at the beginning, which was especially true for the experimental group. In the control group, the score at the end of the 2018 school year was almost identical to the beginning (Chart 2). The results were also affected by the covariate, i. j. learners who achieved a high score in September were also highly likely to score high in June ($F_{1,75,4} = 36,41$, $P < 0,001$).

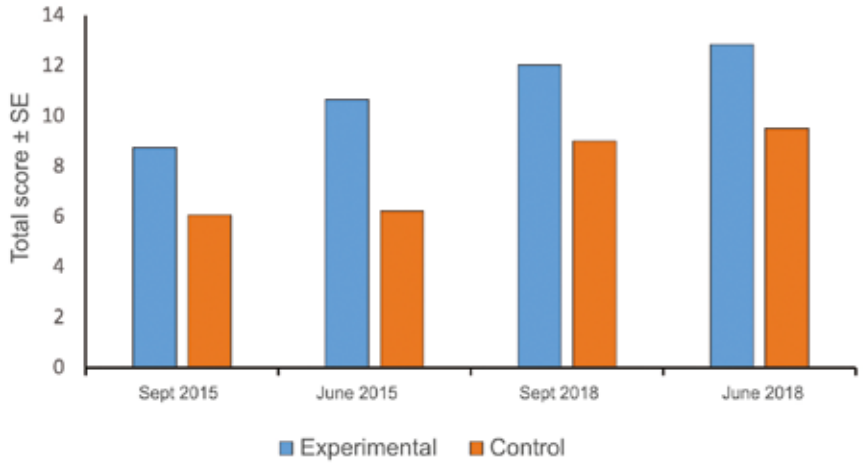
Graph 2 Total scores in groups in the category "reading"



Vocabulary

LMM analysis confirmed that there was a statistically significant difference between the experimental and control groups (F1.87.04 = 4.59, P = 0.035). The experimental group scored higher in all measurements than the control group (Graph 3). The results were affected neither by the time of testing (F2,111.3 = 2.32, P = 0.1), nor by the interaction between the two variables (F2,111.36 = 2.22, P = 0.11). They were also affected by the covariate, i.e., learners who achieved a high score in September were highly likely to score high in June as well (F1, 70.9 = 158, P <0.001).

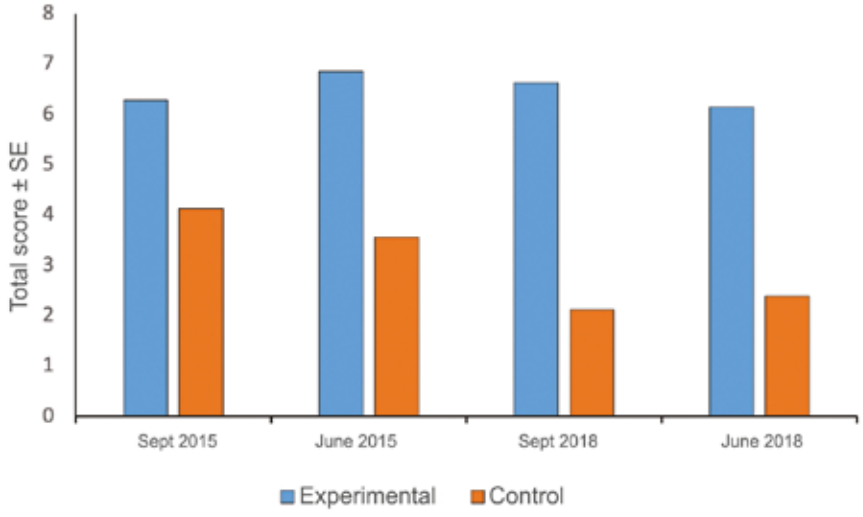
Graph 3 Total scores in groups in the category "vocabulary"



Writing

LMM analysis confirmed that there was a statistically significant difference between the experimental and control groups (F1, 10, 41 = 12.95, P = 0.005). The experimental group scored higher in all measurements than the control group (Graph 4). The results were neither affected by the time of testing (F2.94.2 = 2.65, P = 0.08), nor by the interaction between the two variables (F2.94.2 = 0.95, P = 0.39). However, they were again affected by the covariate, i.e., the learners who achieved a high score in September were also highly likely to score high in June (F1,22,78 = 129,03, P <0,001).

Graph 4 Total scores in groups in the category "writing"



Conclusions

During the test period 2015–2018, the tested learners showed a significant increase in knowledge and language skills in English, but this increase was statistically significantly stronger in the experimental group, since the initial language level of the experimental group was much lower than in the control group. We assume that the learners of the experimental group were more motivated to learn a foreign language and therefore achieved better results at the end of the school year than the control group. However, a lower number of respondents in the control group can also be considered a limitation, which may have caused differences between the experimental and control groups at the beginning of the school year. The decrease in the control group was due to the departure of learners to eight-year grammar schools.

German language

Selection of respondents

In 2015, 39 learners (16 girls and 23 boys) from 3 schools took part in the research. A total of 29 learners belonged to experimental classes and 10 learners belonged to control classes. In 2018, different respondents from three schools were included in the research (N = 41, of which N = 23 boys and N = 18 girls). As has already been stated, when learners left for eight-year grammar schools, some classes merged, and thus a situation arose in which primary schools combined a control group with an experimental group. Of course, we cannot generalise the results of experimental group learner testing to the entire population, but the secondary objectives we pursued with experimental validation provide a basis for determining certain conditions for implementing CLIL teaching.

After omitting respondents who did not participate in all of the tests, their number was reduced to N = 37 in the year 2015 and N = 41 in 2018 (Table 24). These respondents were included in the statistical analyses (N = 29 from the experimental group and N = 8 from the control group in 2015 and N = 24 from the experimental group and N = 17 from the control group in 2018).

Data reliability

The reliability of the data was tested using Cronbach's alpha. Both the correlation matrix and the calculation of average correlations of individual items in each year confirmed that all items correlate together (average correlation between items in 2015 = 0.28 and in 2018 = 0.14) scored from items for listening to the text, thus achieving a high score in writing or reading. Here, however, we point out that the correlation in 2018 was low, so it is necessary to take the analysis of these data with some reservations. Scores obtained at the beginning and end of the 2015 school year (α = 0.64 and 0.75) and in 2018 (α = 0.61 and 0.79) achieved sufficient reliability (especially at the end of the school years). According to methodological recommendations (Nunnaly, 1978), the test-retest reliability was also sufficient (split-half α (2015) = 0.91 and α (2018) = 0.42).

Statistical data analysis

Data distribution

The obtained total scores at the beginning and at the end of the school year were subjected to the test of normal distribution (Kolmogorov-Smirnov test for one selection) to find out whether we can use parametric statistics. The score had a normal distribution (Komogorov-Smirnov test, all P> 0.2), thus parametric statistical tests were used.

Analysis of differences between groups

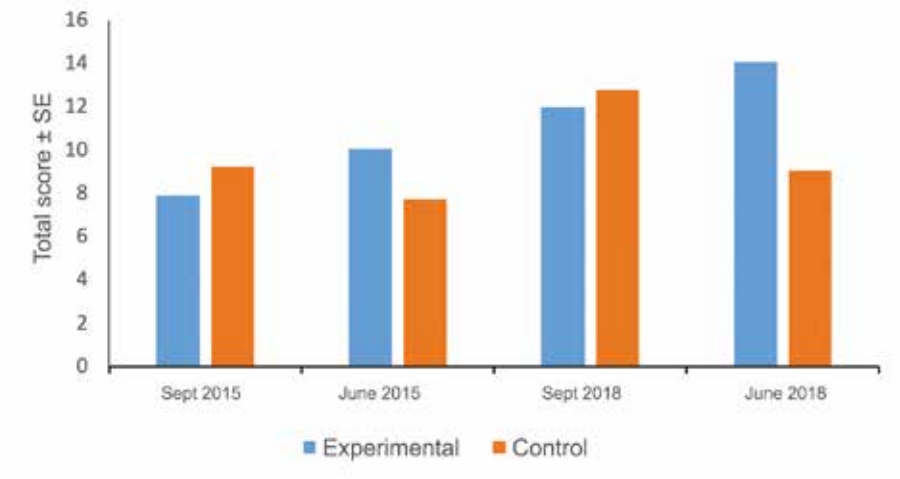
To analyse the impact of the experiment on the learners' final scores, we used a Linear Mixed Model (LMM), in which the group type (experimental and control) and testing time (2015, 2018) were defined as categorical predictors. Using analysis of variance (ANOVA), we found that there was a significant difference in the overall score between the experimental and control groups at the beginning of the 2015 school year (ANOVA, $F(1, 35) = 13.53$, $P = 0.0008$), because the experimental group ($M = 35.79$, $SE = 1.49$, $N = 29$) achieved a higher summary score than the control group ($M = 24.0$, $SE = 2.83$, $N = 8$). Interestingly, in 2018 we did not notice a similar difference ANOVA, $F(1, 39) = 1.16$, $P = 0.29$). For these reasons, we defined the scores of the tests (e.g. listening, reading) at the beginning of the school year as the so-called covariates (continuous predictors), thanks to which we "cleaned" the results from these potentially negative influences (Isaac and Michael, 1972). We defined the schools where the research took place and the ID of the respondents as the so-called random factors. In 2018, different respondents were included in the research, i.e. the analyses were this time designed for independent selections. Averages (M) are presented with standard errors (± SE). We performed statistical tests using SPSS ver. 23.

Results

Reading

LMM analysis confirmed that there was a statistically significant difference between the experimental and control groups ($F1.72.5 = 22.61$, $P < 0.001$). At the end of the school year, the experimental group always scored higher than the control group (Chart 5). The results were neither affected by the time of testing ($F1, 49.95 = 1.87$, $P = 0.18$), nor by the interaction between the two variables ($F1, 30.19 = 3.27$, $P = 0.08$). This means that in 2018 the results were similar to those in 2015, which is due to the drop in the score of the control group at the end of 2018 (Chart 5). The results were also affected by the covariate, i.e. learners who achieved a high score in September were also highly likely to score high in June ($F1,71,21 = 14,15$, $P < 0,001$).

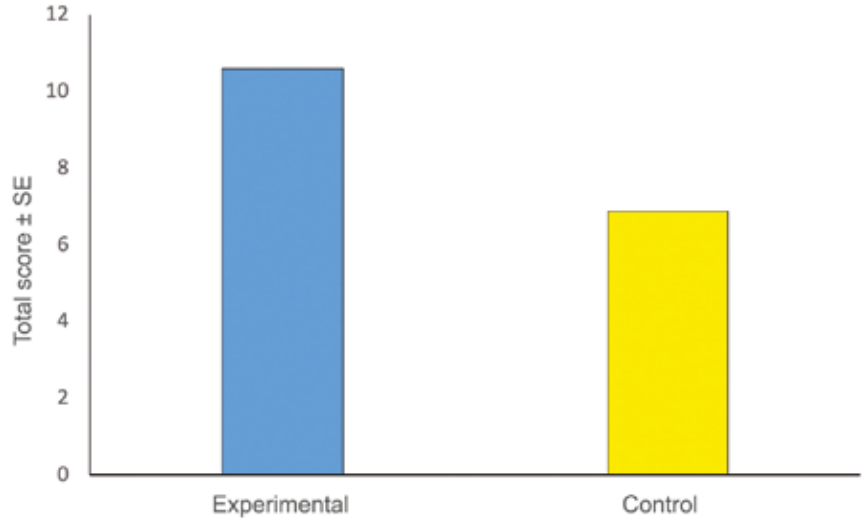
Graph 5 Total scores in groups in the category "Lesen"



Vocabulary

Analysis of covariance, in which the score from the beginning of the school year was defined as covariate, confirmed that there was a difference between the groups on the border of statistical significance ($F(1, 34) = 3.87$, $P = 0.057$), while the experimental group scored higher than the control group. (Chart 6). This result was achieved after "adjusting" the differences between the groups at the beginning of the school year, and it is true that better learners at the beginning of the year achieved higher scores at the end of the year ($F(1, 34) = 8.04$, $P = 0.007$).

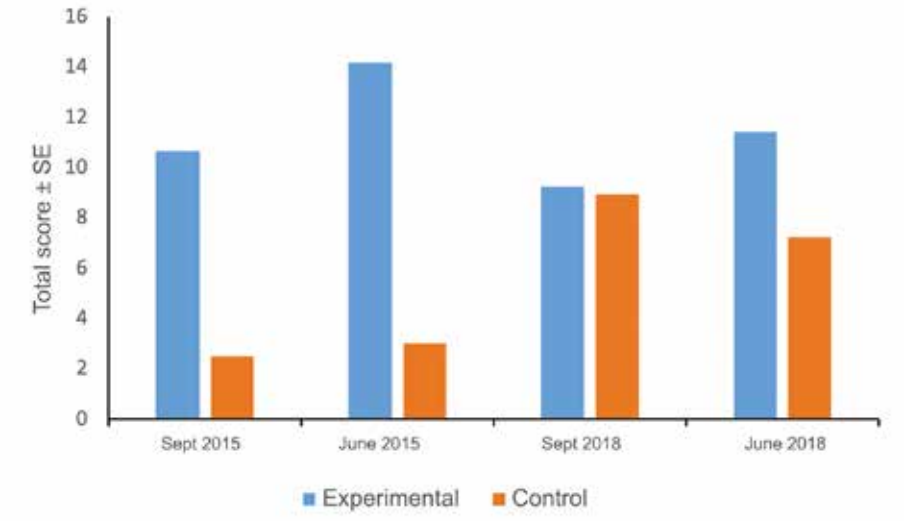
Graph 6 Total scores in groups in the category "Wortschatz" in 2015



Writing

LMM analysis confirmed that there was no statistically significant difference between the experimental and control groups (F1, 46.21 = 3.38, P = 0.07). Although the experimental group always scored higher at the end of the school year than the control group (Chart 7), to high schools, their interest in achieving good results declined. In contrast, nevertheless, due to the control of the abysmal gap between the experimental and control groups at the beginning of 2015, this difference was not ultimately statistically significant. However, a P-value of 0.07 indicates that there was a tendency in favour of the experimental group, though it was not completely statistically significant. The results were not affected by the time of testing (F1, 40, 48 = 0.48, P = 0.83). The interaction between the two variables (F1, 37.94 = 7.21, P = 0.011) suggests that at the beginning of the year the differences between the groups could only be indicated in 2015, not in 2018 (Chart 7). The results were also affected by the covariate, i.e., learners who achieved a high score in September probably also achieved a high score in June (F1,63,82 = 17,83, P <0,001). We assume that as learners wrote tests in the 9th grade after being admitted we could see very good results in the 5th year.

Graph 7 Total scores in groups in the category "Schreiben"

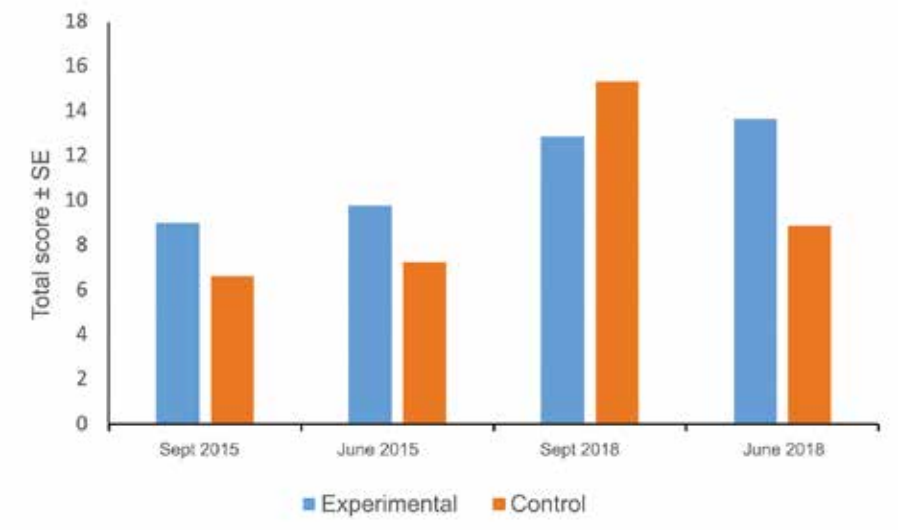


Hearing

Analysis by LMM confirmed that there was a statistically significant difference between the experimental and control groups (F1,36,37 = 65,18, P <0,001). The experimental group scored higher than the control group at the end of the school year (Chart 8), despite the checking for differences between the experimental and control groups at the beginning of the year. The results were affected by the time of testing (F1,68,3 = 5,67, P = 0,02), i.e., in 2015 the score was generally lower than in 2018 - however, this could have resulted from a different way of scoring or a different number of test items in each year. The interaction between the two variables (F1, 43.44 = 7.89, P = 0.007) means that at the beginning of 2018,

the score in the control group was higher than in the experimental group (Chart 8). The results this time were not affected by the covariate, i.e., entry score at the beginning of the school year ($F_{1,55,12} = 3,24$, $P = 0,08$).

Graph 8 Total scores in groups in the category "Hőren"



Conclusions

As a limitation in this research, one can consider the low number of respondents and independent selections in both years tested, which makes it impossible to test the knowledge score exactly for the same respondents over a longer period of time. The low number of respondents in the control group probably also caused some differences between the experimental and control groups at the beginning of the school year.

4.3 Analysis of psychological data

Psychological aspects are also an important criterion in the preparation and assessment of content-based, organisational, methodological and other components in foreign language teaching - especially the age and specificity of learners and the resulting possibilities or capacity in cognitive, social, emotional and personality areas.

Experimental verification of CLIL, which took place in Slovakia in the years 2013 - 2018, focused on teaching in the 5th - 9th grades of primary schools, i.e. on learners aged 10-15 years. This age range represents a period during which individuals undergo significant developmental changes, spanning the period of childhood and adolescence. According to Piaget's terminology (Piaget, Inhelder, 1993), a given age period is called a stage of formal operations. The beginning is approximately in the 11th - 12th year, but the onset and course differ inter-individually. The

concept of Příhoda (1977) is an example of periodisation, which captures biological, psychological and social development. The period of 11-15 years is referred to as pubescence. This comprehensive approach does not omit other aspects that contribute to the resulting image of the adolescent with his/her individual composition of variables as a result of internal and external factors influencing ontogenetic development. During this period, significant changes occur at the level of cognitive functions, in personal, emotional and social development.

At this point, we do not discuss individual psychic functions (memory, attention, speech, thinking) - in a global view, development takes place from the concrete to the general, from the mediated to the direct, from the external to the internal.

Thus, the changes concern not only physical, but - what is of particular interest to us - cognitive, personal and social aspects. The development in the individual areas mentioned has an individual character, depending mainly on internal assumptions, influences of the family, upbringing, education, or, in a broader sense, of social environment. As a result, interindividual differences, different onset, course and resulting picture of changes must be taken into account.

In the cognitive area, a given age period can be characterised by the intensive development of speech and language skills, memory and memory based on the search for and understanding of logical and causal connections. Individuals move to a higher level of processing information or presented knowledge - thinking is more abstract, takes place at the level of symbolic thinking, uses general (abstract) concepts; deduction is applied in the judgment process, the acquired knowledge is verified in several ways. The child can think hypothetically, i.e., thinking is not necessarily tied to reality or known facts. Thoughts are also considered on a more general level - about the "world", about its future, about theoretical questions or about solving problems that are not directly related to a concrete person.

In the personal sphere, there is a greater emphasis on the development of one's own interests, which are more pronounced, on an increase in the internal motivation associated with this; on the other hand, there is the rejection of requests "from outside" if they do not correspond to one's own ideas. However, opinions and attitudes are, to some extent, subject to a subjective assessment of the situation and the facts that result from personal experience. A characteristic feature is independence, the importance of the peer group increases, adults (especially parents and teachers) cease to be authorities automatically – there is increase in the critical view of their activities, behaviour, their relationships to the child, to personality.

These features do not occur immediately and in the same sequence, but develop individually. Therefore, at a given age, we can observe relatively large differences within a group, a class. Teachers must be aware of the differences and adapt their work, teaching methods, forms and content to meet the sometimes conflicting expectations of learners. Otherwise, there is a risk of loss of trust, authority, sometimes even strict rejection.

An important component of an individual's actions is his/her motivation. This represents the driving force that leads to a certain behaviour, to the choice of strategies in specific conditions of activities. Motivation can be understood as a set of factors, incentive to act, and is part of the characteristics of one´s personality. It is related to interests, will traits, emotional setup, therefore, with certain common features, it has individual peculiarities - in similar situations, the individual behaves in the same, characteristic way for him/her, chooses the same patterns for his/her actions.

Both motivated and unconscious processes are applied in motivation - a person behaves in a certain way not only intentionally, consciously chooses certain procedures, but also acts on the basis of internal motives, which express his/her personality as a characteristic feature.
Motivation can be further distinguished as external - acting on the basis of socially desirable motives, and internal, when one's own interests are reflected, for example, in the effort to achieve good results, to be successful, to fulfil one's commitments to achieve something in the field of interests.

At the end of this developmental period, individuals decide on their future - there is a choice of further study within the framework of professional orientation. The ideas about their success in a certain profession for many learners, perhaps for most, are not unambiguous or definitive, they are not entirely clear. They are determined only by general orientation, but are not targeted at a specific profession - this is later specified thanks to new information, knowledge, better understanding of themselves, their capacities and limits, as well as the influence of the environment (Langmeier, Krejčířová, 1998).

In the psychological section of the project, we mainly used questionnaire methods. It is typical for them that they provide a subjective statement, which is not subject to the possibility of verification, objectification of answers, which must be taken into account when trying to generalise the data obtained.

The methodological procedure of experimental verification that was used is in line with standard procedures applied in international context in research into CLIL. The basic pedagogical-didactic specificity of CLIL (combining two languages of instruction in the acquisition of a non-linguistic subject) is the cause of two serious methodological problems:

- increased (and difficult to control) number of experimental variables (mother tongue, foreign language, different ratios of their use, acquisition of a foreign language on various subjects, acquisition of a foreign language on a content subject, etc.);
- in the existing Slovak educational system, it is not possible to create perfect experimental conditions for measuring the impact / influence of CLIL, i.e. to form such control groups of learners which would have the same conditions in the teaching of a foreign language as a separate subject.

a) Performance motivation questionnaire

The Performance Motivation Questionnaire (hereinafter MGC) is based on the methodology of Dočkal and Palkovič (Dočkal, 1984) "Questionnaire on the Motivation of Gifted Children". It is a methodology that was created to determine the motivation of behaviour of gifted children. It monitors the general motivational factor, without taking into account the structure or hierarchy, or the distinction between motivating or discouraging motivating factors. The authors relied on the knowledge that the general components of personality are more prevalent in childhood than in the adult population, but look at manifestations of personality traits such as activity and will, which represent motivational aspects (ibid).

The MGC questionnaire consists of 28 items classified into 3 scales. It monitors the level of general motivation (scale A) - the child/learner records statements about his/her approach to responsibilities, about the manifestations of activities and the way they are fulfilled. The second area (scale B), important for this area of human activity, is the perception of limiting elements, factors hindering the activity. The third part (scale C) examines whether/how/to what extent the respondent can overcome obstacles and what is encouraging for him/her. The methodology suited our intentions with regard to the target group and age of learners, simplicity and clarity of items without differentiating in detail the type of activity - the items followed the preferred way of behaving and solving situations in which learners normally find themselves. When evaluating the questionnaire, the authors abandoned the division of items based on the validation process, as is usual in other questionnaires of (performance) motivation. The indicative comparison criteria in our case were standards in the form of walls, statistically calculated in the standardisation process (ibid).

We used the MGC questionnaire repeatedly; more detailed data are in the results section.

b) Our Class Questionnaire

The "Our Classroom" Questionnaire (hereinafter referred to as the OC Questionnaire) is focused on finding out the social climate in the classroom based on the individual answers of the student. The original questionnaire, My Class Inventory, was created by B. J. Fraser and D. L. Fisher; information about it was mediated by Lašek and Mareš (1991). In the mentioned study, a questionnaire was published in Czech (translation) together with the results of one of the studies.

The questionnaire identifies 5 areas, of which we selected 3 for the purposes of our monitoring: a) *Classroom satisfaction*, b) *Classroom competitiveness*, and c) *Learning difficulty*. Each area is represented by 5 items - statements with which respondents agree or disagree. The maximum score for the area is 15 points.

c) Short test

The schools in the project, which have their own school psychologist, gave learners a short test, which is adapted from the extensive Cognitive Abilities Test (TKS; Thorndike, Hagen, ed.

Vonkomer, 1997). For our purposes, the administration of the test is too demanding and lengthy (it takes about 4 hours) and, last but not least, the complex results obtained are not necessary for the purposes of experimental verification of CLIL.

The TKS methodology consists of 3 batteries - verbal (4 subtests), numerical (3 subtests) and pictorial (3 subtests). From the verbal battery we selected 2 sample subtests, and 1 from each of the other 2 batteries, i.e., our version contained 4 tasks/subtests.

Vocabulary - subtests Glossary and Classification of Terms monitors the knowledge and understanding of concepts, relational and analytical thinking, the ability to generalise and think logically.

The task selected from the numerical battery, focuses on finding simple numerical relationships using quantitative symbols.

The analogy of images, a task from the third battery, has no direct relation to school performance - it determines the ability to capture relationships in the details of the submitted geometric and pictorial parts, flexible creation of the required analogies.

4) Interests structure questionnaire

Questionnaire of the structure of interests (hereinafter the SI Questionnaire). To determine the area of interest, we used a modified form of the AIST-R interest structure questionnaire (Bergmann, Eder, 2018). The questionnaire is based on the theory of J. L. Holland (1997), according to which, there are 6 types or interests of people (in short: RIASEC; see the results section for more details). These types can be represented by a hexagonal diagram.

The questionnaire serves as an aid to professional counselling, it is intended for the age of 14 and more years. It contains 60 items - sentences expressing the activities that people are engaged in at work, or they devote themselves to them in their free time (e. g. "Perform work that requires physical effort" - R; "Organise some events" - E).

Our modification of the questionnaire consisted in the answers being marked in the form of consent: "yes, I would like to do it" or disagreement: "no, I am not interested in this activity", with a statement required for each item. In individual counselling, the answers for each item are given on a five-point scale that represents the intensity of interest.

In addition, the questionnaire included questions on individual popularity vs. the unpopularity of school subjects, at what secondary school the student will continue to study and how difficult the entrance exams were for him/her.

Due to the fact that the data obtained and the methods used were different in each year, the results obtained are broken down by school years.

4.3.1 Results in the school year 2014/2015
Motivation of Gifted Children Questionnaire (MGC)

Although learners from CLIL classes are not identified as generally gifted, they are expected to have some commitment and overall better management of requirements in educational environment than in regular classes.

The MGC questionnaire was sent to the schools involved in the project, where the teachers assigned them to the learners of the 6th grade of experimental classes. The questionnaire was filled in by 278 learners.

We divided the results according to individual scales. Since the wall standards are reported as the amounts A + B and A + C, we have processed our data accordingly.

In Table 11, we present the achieved mean scores (AM), standard deviation (SD) and walls in our group of learners in scales.

Table 11: Mean scores, standard deviations and walls in the MGC Questionnaire for 6th grade learners - experimental classes

Scales	AM	SD	Wall
A+B	13,10	5,20	6
A+C	16,79	5,89	6

The sixth wall (out of 10) represents a "better" average, but it does not indicate a high motivation of some learners, as can be seen from the rather large SD. A closer look at the results of individuals shows that several of them had a very low score, in several cases it was not only zero, but went down to the "minus".

The achieved results can also be divided into individual scales. Table 12 shows the average number of points (AM) and the percentage (%) of the maximum possible score.

Table 12: MGC questionnaire: average number of points and percentage of total score

Scales	AM	%
A	10,5	43,9
B	2,6	28,5
C	6,2	52,1
A+B	13,10	56,9
A+C	16,79	46,6

Learners scored highest in items aimed at finding a positive attitude to participate in various activities, to strive to excel, to the tendency to take risks (scale C). The low score on

the B scale documents that children do not avoid precarious situations, they can overcome difficulties.

With the cumulated sums (A + B, A + C) it can be seen that both data are around 50%, i.e. confirm the wall location in the middle of the span.

We were interested in the relationship between motivation indicators and school results. Here we had data on end-of-year marks, from which we selected marks from Slovak and English (SL; EL) and mathematics (M) for comparison. The correlations between the variables are shown in Table 13.

Table 13: Spearman´s rank correlation coefficient of motivation scales and school grades

	A+B	A+C	SJ	AJ	M
A+B	1,000				
A+C	0,772**	1,000			
SJ	0,111	0,098	1,000		
AJ	0,291	0,385	0,627**	1,000	
M	0,432*	0,303	0,632**	0,521*	1,000

** significant at p≤0.01
* significant at p≤0.05

The data show that the scales of the questionnaire are mutually consistent (p≤0.01), i.e. they measure the same characteristics. Due to the relationship between scales and school grades, only the A + B scale showed a significant correlation relation - to mathematics (p≤0.05).

On the other hand, school grades correlate with each other - SL highly significantly with EL and M; Mathematics with the English language shows a less close relationship, although also statistically significant (p≤0.05).

Conclusions

When monitoring non-intellect factors of learners of experimental classes, we focused on determining the level of non-specific motivation. The results show that in our group of children, motivation is around the median value expected in a given age group. However, there are relatively large interindividual differences - a wide range from highly motivated children to manifestations of cautious action or reserved attitudes and little activity to indifference. Such stratification corresponds to the conditions in the general population, i. e. children as a group represent a representative selection, without specific signs of talent.

The correlations between motivation and school grades are low in the 6th grade; it is not true that highly motivated learners achieve significantly better learning outcomes than their low-motivated peers.

It will be interesting to follow the development of motivation in learners of experimental classes with a time lag of one or more years - the mechanism of increase or decrease.

4.3.2 Results in the school year 2015/2016

Learners of schools involved in experimental verification completed the 7th year of primary school, i. e. reached the age of 13 years. Completed questionnaires were sent by 11 schools.

Questionnaire "Our class"
We evaluated the answers anonymously, for the class within the school. In statistical processing, we recorded the results in individual areas for the entire set. Incompletely filled in questionnaires and those where the method of marking the answers was inappropriate (e. g. mechanical marking of only one of the alternatives) were excluded from processing. The number of respondents was then 210.

An indicator of a positive atmosphere in the classroom and in teaching is the feeling of relatively low demands, high satisfaction and average competitiveness. The average values (AM) and percentage (%) in each area can be found in Table 14.

Table 14: Questionnaire "Our class" - average values in items (N = 210)

Item	AM	%
Satisfaction	10,41	69,40
Competitiveness	11,16	74,40
Difficulty	8,11	54,07

The study by J. Lašek and J. Mareš (1991) also presents the results of research that can be considered as "indicative standards". In them, the average value of "satisfaction" was 12.20; "Competitiveness" 12,24; "Difficulty" 8.67. When comparing these data with ours, we find less satisfaction and competitiveness and the same feeling of difficulty in the current sample of our learners in experimental classes. However, the differences between these files are not large, so we can consider the situation in the classrooms according to our learners to be appropriate. Lower satisfaction may also be related to the criticality of learners at a given age. Of course, individuals' responses varied within the classroom - some were more critical, while others were more accepting. A good feature in our set is a relatively low score in difficulty, i. e. although the subject in the 7th grade is more abstract, theoretical, it is not considered difficult to master.

Questionnaire Motivation of Gifted Children (MGC)
The items of the questionnaire follow the preferred way of behaving and solving situations in which learners are usually in. The MGC questionnaire was also used last year and we

were interested in whether and in which direction the answers changed due to the above-mentioned developmental shifts. For this reason, the questionnaire was not anonymous - we compared individual results from two years. Therefore, only the questionnaires of those learners who participated in the testing for both years were included in the statistical processing. Unsigned and incomplete forms were excluded, as well as those where the answers were obviously "misleading". The number of respondents whose answers were statistically evaluated was 142.

The mean values (AM) and standard deviations (SD) in the individual scales A, B, C and the values A + B and A + C for the learners of the 6th (1) and 7th (2) years are found in Table 15.

Table 15 Mean values and standard deviations in scales A, B, C, A + B and A + C - first and second measurement (N = 142)

Scale	AM1	SD1	AM2	SD2
A	10,430	5,0197	8,246	5,326
B	2,535	1,878	2,669	2,006
C	6,169	2,090	5,690	2,427
A+B	12,965	5,461	10,915	5,664
A+C	16,599	6,031	13,937	6,825

AM1 – average value at the first measurement (6th grade)
SD1 – standard deviation at the first measurement
AM2 – average value at the second measurement (7th grade)
SD2 – standard deviation at the second measurement

Looking at the data, we find that in the 7th year, the level of motivation, the effort to achieve good results and to present themselves with them, decreased (scales A and C), while the differences between learners increased (SD value). Scale B shows an increase, so the fears of failure are greater, or learners thus expressed indifference to their "performance"; here too, however, the interindividual differences are greater than the year before.

When merging the scales A + B and A + C, we also find a decrease in average values (and an increase in SD) between years. The combination of scales expresses the desire and energy to work, the willingness to take risks or overcome obstacles (A + C), resp. avoiding activities where there is a risk of failure (A + B).

We compared data from last year and this year for scale A by paired t-test; the data are given in Table 16.

Table 16 Scale A - comparison of the difference between the sum of average values and its significance - (t-test)

Scale	AM	SD	t	sign.
Suma A1 – Suma A2	2,183	5,393	4,824	0,000 *

AM – average value
SD – standard deviation
t – t-test value
sign. – significance of the difference, * p≤0,001

Due to the distribution of the data, the paired Wilcoxon nonparametric test (Z value) was used to determine the significance of the differences in scales B and C.; the data can be found in Table 17.

Table 17 Scales B and C - comparison of the difference of median amounts and their significance - (Z)

Scales	Z	sign.
Suma B1 – Suma B2	0,710	0,478
Suma C1 – Suma C2	1,934	0,053

Tables 16 and 17 show that significant changes occurred mainly in the level of overall motivation required for successful operation (scales A and C; in C, the result is close to significance). In scale B, the difference is not statistically significant.

Looking at the results of individual learners, we state that several achieved a very low score on the scales - in several cases it was not only zero, but went down to the "minus".

Table 18 shows the statistical significance of the differences in the sum of the scales: sum A + B1 - sum A + B2 (t-test); sum A + C1 - sum A + C2 (Wilcoxon test)

Table 18 Scales A + B and A + C - comparison of differences of means / medians of amounts and their significance - (t, Z)

Scales	t	sign.
Suma A+B1 – Suma A+B2	4,208	0,000 *
Suma A+C1 – Suma A+C2	-	-

* significant at p≤0,001

Even this view of the data shows that the year-on-year shifts in the results reached a high statistical significance in both cases.

Conclusions

The primary schools involved in the experimental verification of teaching using the CLIL pedagogical approach were approached with a request to apply two psychological methodologies in 7th grade classes - questionnaires.

The Our Class Questionnaire focused on finding out learners' opinions on classroom work, atmosphere and complexity of teaching. According to the answers obtained, most learners are reasonably satisfied in their class, the higher score was achieved by the level of competition, but the overall difficulty is relatively low. However, several learners expressed less satisfaction with the course of lessons. Critical evaluation is probably related, to some extent, to age maturity and the corresponding acquisition of insight and the ability not only to judge but also to express one's own opinions, attitudes and ideas.

Finding out the above or similar information would be useful for teachers as feedback for possible adjustments to their pedagogical practices and a better view of their learners' problems. Therefore, we recommend working with a school psychologist.

The second methodology was the MGC personality questionnaire. Through it, it is possible to look at some features that affect the motivational level in a positive or negative sense in various situations of school and extracurricular life of the individual. The questionnaire was used repeatedly after one year, because we wanted to find out whether there were changes in these areas in learners due to the expected developmental changes in the given age period.

Despite the fact that the MGC questionnaire was re-entered after one year, we found statistically significant differences in individual results. We noticed a significant shift especially in the year-on-year comparison of factors of "general" motivation (active approach, desire to work, perform assigned tasks, strive to achieve good performance, overcome obstacles, show their qualities, success, etc.), downwards, i . e. reduction of motivation. We found a slight increase in the score (insignificant) in the answers, which indicate fears of possible failure, doubts and a tendency to avoid situations with an uncertain outcome.

Higher standard deviations (SD) around the mean, i. e. greater differences between the respondents of the 7th than 6th grade mean that in our group there are more learners who are highly motivated, ready for workload and overcoming difficulties, but also learners who are careful, less active or indifferent. This distribution is not unusual in the population - each society consists of the variability of its members.

The differences in results we identify can not only be attributed to age characteristics, but can also indicate a certain disappointment if the activity or effort does not bring the expected effect, a certain disappointment, "sobering up" from the child's ideas of the past.

In this area, too, it would be appropriate for teachers to consider and re-evaluate their practices, perhaps used for years; to prepare lessons in an innovative, engaging and thus more motivating way that engages and not only revives teaching, but also supports learning processes and the development of cognitive skills (memorisation, association, logical thinking, knowledge in new situations, and so on) and will help to further improve their school results.

The data obtained provide useful information for our work, not only in connection with other procedures in the field of experimental verification, but also in a more general sense - we will use them in our cooperation with teachers from various institutions.

4.3.3 Results in the school year 2016/2017

At the end of the penultimate year in primary school, we were interested in some indicators in the area of learners' cognitive abilities.

Short test

The completed tests were sent back by 5 schools. Due to the fact that the types of schools and their location are different, they can provide us with a relatively plastic picture of learners from several parts of Slovakia. In total, we processed data from 117 learners.

The methodology used was easy to manage for a given age group, as evidenced by the total percentage of successful solutions - 91.4%, when out of the total possible point gain (35 points) learners achieved an average of 32 points. More detailed results are shown in Table 19.

Table 19 Short Test Results, N = 117

Subtest	Max. Number of points in the task	AM	SD	% success rate
Dictionary	12	10,88	1,48	90,7
Classification of concepts	12	11,06	1,46	92,2
Numerical relations	6	5,82	0,61	96,9
Image analogy	5	4,34	1,18	86,9
Total	**35**	**32**	**3,53**	**91,4**

AM – average value
SD – standard deviation

The subtest Dictionary contained 12 entries. The task was to choose one of the five offered for the specified word, which can be considered analogous, most similar to the stimulus expression. For the right solution, it is necessary to master the concepts and understand them; critically assess their meaning and find an approximate synonym. In this subtest, we recorded the largest

differences in student performance (SD 1.48) - the score ranged from 5 to 12 points.

In the subtitle Classification of Terms, the performances were slightly more compact - learners managed the task better. The subtest contained 12 items, the task was to select one of the five words that correspond to one group with three or four stimulus expressions.

Both verbal subtests involved the evaluation and selection of expressions from terms commonly used in the Slovak language.

The Numerical Relations subtest had 6 items in which an assessment of the quantity in the various tasks was required.

The Image Analogy subtest had 5 items. In them, the relationship between the sample images was to be identified and then to look for an analogous relationship to the next image among the five options.

The non-verbal tasks again involved the assessment of the submitted stimulus assignments, attention, critical and analytical thinking, understanding the relationships.

Overall, the easiest for learners was the 3rd subtest - learners achieved the highest success score - 96.9%, with the smallest standard deviation.

Picture analogies were the most difficult; the average success rate is 86.9%. The items in this subtest require attention and critical evaluation of the details in the submitted patterns, logical reasoning.

A closer look at the data obtained from verbal tasks, although generally well managed, we find that several learners were unable to fulfill the required task - to identify, select an appropriate term from among several offered. We assume that this is due to a lack of focus on instructions, not a lack of control.

There were only small differences in the average values of the test results in individual schools - they ranged from 30.95 to 32.65. This means that the observed abilities of learners from individual localities are approximately at the same level.

Using the results of the MGC questionnaire, which was applied during last year's monitoring, we were interested in whether the results expressing the approach to fulfilling their obligations and the effort to overcome obstacles (scales A and C of the questionnaire) are related to the results in the performance test. Data from both methods were available from 66 learners. Using correlation analysis, we found the independence of the compared values: correlation coefficient r = 0.037. The independence of the compared variables is probably related to the low difficulty of the tasks in the Short Test used, i.e. learners can handle such a situation without problems.

Conclusions

Primary schools involved in experimental verification of teaching using the CLIL pedagogical approach, which have their own school psychologist, were approached with a request to apply in the 8th grade classes a short test monitoring the achieved level of some cognitive abilities.

The Short Test used to some extent makes it possible to assess the ability to use and deal with abstract and symbolic relationships. The subtests are relatively simple and clear; they contain familiar words, expressions, as it is not a test of knowledge of less frequented terms, but of finding out the ability to flexibly apply the necessary thought operations.

Learners managed the requirements at an above-standard level - overall, they correctly solved more than 90% of the tasks correctly. We can state a satisfactory level of cognitive abilities observed in the Short Test. Learners from the schools in which the testing took place are prerequisites for the successful continuation of the study in the next period.

4.3.4 Results in the school year 2017/2018

Given that the oldest learners in the experimental classes in the school year 2017/2018 ended the ninth year and the current topic was the choice of further education, we focused primarily on identifying areas of interest. In this context, we also asked about the type of secondary school they will study at and some other relevant information.

In addition, we have repeatedly entered the MGC questionnaire, which we have slightly modified for our needs this year.

We sent questionnaires to those schools in an experiment in which school psychologists could co-operate. They sent the completed questionnaires back from four schools and the number of learners - respondents whose answers we processed is 55. An overview of the number of learners in the classes of individual schools is given in Table 20.

Table 20 Numbers of learners - total / girls / boys in the 9th grade of 4 schools

School	Total number of learnes	Number of girls	Number of boys
1	9	5	4
2	19	6	13
3	18	12	6
4	9	2	7
Total	**55**	**25**	**30**

Classes vary quite significantly in the number of learners; there are more boys than girls.

Interests, choice of school subjects

We were interested in the individual interests of the learners, whether these will be reflected in the choice of field of study; whether the type of education (teaching with CLIL) may be related to preferred school subjects, or with the chosen study direction; what is the current level of performance motivation.

Several individual factors contribute to the choice of field of study, focus. These include interests, motivation, abilities, but also personality characteristics (e.g. extrovert - introvert). Some of these factors may change, develop or modify during ontogenetic development, over time and under the influence of other, internal and external circumstances. The environment - family, school, peers, new information, experience and knowledge - contributes greatly to this.

To find out the area of interest, we used a modified form of the AIST-R interest structure questionnaire (Bergmann, Eder, 2018) - the IS questionnaire. The questionnaire is based on the theory of J. L. Holland (1997), according to which there are 6 types or interests of people (RIASEC):

1. Practical-technical interests (R - realistic)
2. Intellectual-research interests (I - investigative)
3. Artistic and linguistic interests (A - artistic)
4. Social interests (S - social)
5. Business interests (E-enterprising)
6. Conventional interests (C - conventional)

For most people, there is a combination of these types that are, but may not be, compatible. This fact is important in the individual counselling process.

The results

The questionnaire results, not only of schools but also of individual learners, were different: some gave many positive answers (wide range of interests), others' choices were more focused on specific areas, while others mentioned very few activities that interested them. Table 21 provides an overview of the number of positive elections in each category in the four schools.

Table 21 Number of positive answers in RIASEC categories

category/school	R	I	A	S	E	C
1	22	36	38	34	25	10
2	62	77	62	62	78	23
3	35	61	64	72	81	48
4	44	34	22	31	41	27
N (total)	**163**	**208**	**186**	**199**	**225**	**108**

Overall, the most popular category appears to be E (N = 225), which represents business, leadership, organisational, consulting inclinations and interests. It achieved the highest number of preferences in the classes of two schools.

The second in order is category I (N = 208) - investigative focus, interest in constantly learning about new ones, researching phenomena, looking for solutions.

This is followed by category S (N = 199), which is characterised by a willingness to help, to take care of people, to listen to the problems of others, to educate, to teach, to advise. We noticed a relatively high interest in art in the broadest sense of the word - **A** (N = 186). Creativity, imagination, intuitiveness, a sense of aesthetics apply in this category; includes various areas of art - verbal, musical, artistic, motional.

Category **R** (N = 163) - interest in practical and concrete things - achieved the most choices in the school 4. Those who gave a "yes" to these items are interested in technical work, machines, devices and their repair, physical work, e.g. in nature, on a construction site. In terms of qualities, it is more about conservatism, consistency, realism.

The category C (N=108) was the least attractive for nine-graders from our sample. It includes activities requiring accuracy, orderliness, systematicness, conscientiousness (working in the office, compliance with established rules and regulations).

The focus of learners' interests as a preference for certain activities may also be reflected in the interest in certain school subjects. However, other factors also interfere here. Of these, we can mention in particular the teacher's personality – his/her professionalism, expertise, ability to arouse interest and motivate learners, his/her relationship to them, the way he/she works in lessons and more - all these affect attitudes of pupils and aid to form their value system. We found out which subjects are popular with learners and which, on the contrary, they do not like. Responses differed among schools. In some negative-type responses, pupils noticed the reason - a certain reservation towards teachers (compare: the results of processed free answers of learners about positive / negative perception of lessons with CLIL were presented at the professional seminar "CLIL in practice", September 2016).

The results with the frequency of the most frequent choices of subjects in schools are presented together in Table 22.

Table 22 Favorites vs. unpopular subjects - number of answers (N)

Popular subject	N	Unpopular subject	N
Mathematics	21	Physics	30
History	17	Chemistry	26
English language	11	Slovak language and literature	16
Biology	7	Mathematics	10
Geography	6	German language	6
Slovak language and literature	3	English language	4

Other subjects were less common. A comparison of the two groups of answers shows that learners listed more subjects as "unpopular" than "favourite". Interestingly, despite the type of teaching (strengthening foreign languages), mathematics comes first among the most popular subjects. And vice versa - among the unpopular subjects are foreign languages and a higher number of Slovak language and literature.

Personal interests in the direction of studies at secondary schools can be influenced to certain extent by skills/practices and experiences gained from educational process. What types of studies learners have chosen, in which schools they will continue to focus, is shown in Table 23.

Table 23 Selection of studies - type of secondary school and number of admitted learners

Secondary school	N
grammar school / bilingual grammar school	18/5
different types of secondary vocational schools	16
art schools	7
business, hotel academy	6
pedagogical secondary school	2
secondary medical school	1

The most common choice is high school as a more general education. The bilingual form represents its more specific type. Sixteen learners chose a secondary industrial school - technically oriented education in various fields. 7 learners will study at art schools. The business or hotel academy addressed six learners. The least attractive study, or the professional area is pedagogical and medical.

In identifying the difficulties of entrance examinations, 9 learners stated that they had been admitted without "entrance examinations"; 9 learners said they seemed very easy; they were easy for 31 learners; 6 learners considered them difficult - most of them had a problem with mathematics.

However, looking at the preference for activities and the choice of the type of secondary school, we state that the connection can be observed only in some respondents. Only in general can it be said that a higher interest in the investigative category of activities appeared in the choice of grammar school studies; category A occurred in learners of art types of schools; the study of the technical field - industrial studies - was chosen by learners with a higher number of answers in category R. However, the activities listed in the questionnaire also cover areas that may be related to leisure activities and these actually form a supplement to the main, professional content.

Motivation

The MGC questionnaires are used to find out a) the pupil's approach to his/her duties, speeches in activities and the way in which they are fulfilled; b) perception of limiting elements, factors that hinder its activity; c) whether/how/how much the respondent is able to overcome obstacles, which is encouraging for him/her. We used the MGC questionnaire repeatedly; in the previous period, we mainly monitored changes in the level of motivation over time. This year, we slightly modified the questionnaire - we focused on positive elements of motivation (items of type b were omitted) and these were monitored by 20 items. With this view, we obtain information, as 90 of our group are ready to overcome obstacles with an active approach.

Results

The maximum score represents a theoretical value (in the current version of the questionnaire = 31 points), as it is not assumed that the statements of individuals reach the "optimal" form in all items. Average results (AM) vary from school to school, so we present them separately in Table 24. We also attach a percentage expression of the achieved score.

Table 24 MGC questionnaire (ed.) - average score (AM) and percentage of maximum score (%)

School	AM	%
1	14,78	47,67
2	9,32	30,05
3	12,72	41,34
4	12,78	41,22
max. score	31	

The data presented in Table 38, as well as a closer look at the learners' answers, again indicate relatively large differences between the respondents, or more generally - between schools. The "level" in percentage terms is slightly to well below 50%. This means that most learners declare caution, little perseverance or an effort to overcome difficulties in several areas, to show their strengths. Of course, there are also individuals in the ensemble who have shown high motivation. The maximum score recorded was 27 points; the minimum 2 points.

We have the opportunity to orientatively compare the current results in the MGC questionnaire with the results obtained two years ago - for learners ending 7th grade. At that time, the average of the two scales of the questionnaire reached 13.94. We record a significant decrease in AM in school 2; in school 1, learners maintain access to their responsibilities at a more stable level.

Conclusions

In the last year of education in primary school and with the prospect of continuing to study at a certain type of secondary school, we find a declining trend in performance motivation among learners in our sample. The choice of another type or direction points to the overall success in teaching - the grammar school type predominates, but also the technical orientation (industrialist) has gained a relatively high representation.

4.4 Results of qualitative research

Non-standardised questionnaires conducted by interviews with teachers and school principals at the end of the project and direct observation in lessons with CLIL were used as research methods for qualitative research (for more details see chapter 3.2 Research methods).

In the first and second years of experimental validation, school questionnaires were always administered at the end of the school year (May 2014 and May 2015), when even beginning teachers already had enough experience with the CLIL pedagogical approach to be able to evaluate their attitudes and needs. The questionnaires were administered with the help of school experimental verification coordinators, who were instructed in detail about the aims and conditions of the questionnaire research. The school coordinators approached all the teachers involved in the experimental verification at the school where they worked with a request for cooperation and the completion of questionnaires.

After two years, the method of experimental verification was replaced by the interview method (for more details, see Chapter 3.2 Research Methods).

4.4.1 Characteristics of respondents

The respondents in the experimental verification project were teachers, coordinators and school principals.

a) Teachers

In the initial phase of the experimental verification, the questionnaire survey was attended by pedagogical staff from all participating schools (in the first and second year of solving 14 schools). The questionnaires (Annex 3, 4) were completed by a total of 22 teachers, of which 4 were men and 18 women. The number and structure of the respondent group did not change, despite the fact that during the 2nd year of experimental verification one respondent transferred to another school, that was also involved in the experimental verification, and thus continued the research under the heading of a new employer. In the first questionnaire survey, the average length of pedagogical practice of the respondents was 7.25 years. Among the respondents were 5 beginning teachers with an experience of 1 year or less, but also 3 very experienced teachers with an experience of more than 20 years (longest working teacher had an experience of 27 years). Most were teachers who had teaching experience between 3 and 12 years (14 teachers). 8 teachers were qualified to teach English as a foreign language, one teacher was a native English speaker with an international certificate authorising him to teach English. Other teachers (10) were qualified to teach subjects, especially science. 5 teachers were qualified to teach at primary level. Teachers with a combined qualification marked several answers (e.g. a qualified English teacher and a qualified mathematics teacher).

Regarding the language level of the respondents, one marked their foreign language communication skills at the A2 level, 9 were assessed at the B1 level, 5 at the B2 level and 5 at the C1 level. 2 teachers indicated option C2, 1 of which is a native English speaker.

In the past, 5 teachers have completed specialised training focused on the application of the CLIL methodology. 3 of them completed trainings abroad (Erasmus, NILE Norwich) and 2 completed trainings at the National Institute for Education in Bratislava (1 respondent completed both types of education). 18 teachers stated that they had not yet received any training aimed at applying the CLIL pedagogical approach. The characteristics of the group of respondents are summarised in Table 25.

Table 25: Characteristics of the respondent group no. 1 - teachers

Gender	4 men + 18 women
length of pedagogical practice	0 – 27 years, average 7.25 year
qualification	8 foreign language teachers 10 teachers of non-language subjects 5 teachers for primary education 1 native speaker
Level of FL proficiency	A2 – 1 B1 – 9 B2 – 5 C1 – 5 C2 – 2
specialised CLIL training	continuous education in Slovakia - 2 education abroad - 3 without CLIL education – 18

The composition of the respondent groups changed every year (departure of teachers to MD, changes of workplace, arrival of new teachers, change in the position of school principal), therefore it is not possible to provide a structured description. However, this fact does not greatly affect the validity and reliability of the results achieved due to the complementary nature of this part of the experimental verification and its focus on the processes of applying the CLIL pedagogical approach in relation to the school, not in relation to individual teachers.

b) Experimental verification coordinators

The coordinators of the experimental verification formed a separate respondent group within the questionnaire survey in the school years 2013/14 and 2014/15. (Annex 5). Each school involved was represented by one coordinator appointed by the school principal. At the beginning, the group consisted of 9 women and 2 men, in the second year there was 1 male respondent in the group. The coordinators were teachers with longer teaching experience (14 - 22 years) and 8 of them were also chairmen of subject commissions at their school.

c) School principals

The opinions and attitudes of school principals were surveyed in semi-structured interviews in the last year of the project (school year 2017/18). All 10 school principals who were in office at the time of the interviews were involved in the research (only some of them - 6 - had been in office since the beginning of the project). The personal characteristics of school principals were not recorded, as they did not appear in the research as persons, but as statutory representatives of schools.

4.4.2 Analysis of attitudes, needs and experiences of pedagogical staff (questionnaires and interviews)

Organisational support of teaching with the CLIL pedagogical approach

English or German was used as the working language in CLIL pedagogical classes. In the second year of the experimental verification, all respondents indicated only English (the "dropout" of German in a given school year was related to organisational changes in the individual participating schools). The range of subjects on which teachers used the CLIL pedagogical approach was wide (a total of 10 subjects were represented). Most teachers (9) integrated CLIL in science / biology, mathematics (8 teachers) and geography (5 teachers). Data on other subjects are given in Table 40. (Teachers could mark several subjects, therefore the total number of answers is higher than N = 22.)

Table 40 Subjects on which the CLIL pedagogical approach was applied

Subject	Number of teachers	Subject	Number of teachers
sciences / biology	9	Informatics	2
mathematics	8	physics	2
geography	5	religion	2
history	2	history	1
chemistry	2	human sciences in EL	1
music education	2	total number of teachers	22

In the first year of experimental validation, the vast majority of teachers could not estimate how many lessons per month they taught on average with the CLIL pedagogical approach nor what percentage of their teaching time they worked with a foreign language in one CLIL lesson. They justified this by the large disparity between the number of CLIL hours at the beginning and the end of the school year, as well as by the "tuning" of methodological procedures. The data obtained did not allow their processing and were therefore not included in the evaluation.

In the second year of the experimental validation, most teachers (8) reported the number of CLIL hours from 7 to 8. 7 teachers taught in an integrated 1-2 hours per month and 2 teachers 7-8 hours. 5 teachers use CLIL more intensively, i. j. during 10 or more lessons per month. The highest number of hours with CLIL was recorded for the native speaker, who stated that he teaches CLIL 24 hours a month (data are given in Table 41). When asked what percentage of the teaching time they worked with a foreign language in one CLIL lesson, 3 teachers answered that they used a foreign language during the whole lesson. 7 teachers estimated that an average of 30-40% of a foreign language was used during a lesson. Most respondents (13 teachers) stated that they used a foreign language for about 50% of the lesson.

Table 41 Time frequency of lessons with CLIL pedagogical approach (monthly)

Lessons with CLIL monthly	Number of teachers
1 – 2 lessons	7
3 – 4 lessons	8
5 – 6 lessons	0
7 – 8 lessons	2
9 and more lessons	5
Total	**22**

Teaching materials

In the initial phase of the project, all 22 teachers repeatedly stated that they mainly used their own materials for teaching with CLIL. 9 of them also used modified materials from textbooks and the Internet, and 1 teacher stated that in addition to self-created materials, he also used finished materials from the Internet and textbooks.

Teachers' views on lessons using the CLIL pedagogical approach

a) Foreign language teachers

The problems that the respondents mentioned were, for example, low time allocation for a foreign language, too high pace of lessons, little time to review and consolidate the curriculum, lack of materials suitable for CLIL, difficulties of learners with grammar and reading comprehension, individual approach to learners with dysgraphia and dyslexia, unequal level of foreign language proficiency of new learners.

As advantages in using CLIL, respondents mentioned, for example, richer vocabulary, better pronunciation and better oral and written expression of learners, prompt switching from Slovak language to foreign language, better cooperation of learners in class, higher motivation.

When working with learners with SEN, teachers had to proceed individually. Gifted learners mastered the curriculum quickly, reacted quickly, independently searched for information, prepared various projects and helped teachers. Other (unspecified) learners with SEN had the following difficulties: speech dysphasia (difficulties in communication), ADHD (need to feel successful), learning disabilities (need for a slower pace, multiple repetitions of the curriculum, frequent praise).

b) Teachers of non-language subjects

Respondents state that CLIL lessons were interesting, creative, fun and dynamic for learners, if the topic was also attractive, learners who did not enjoy the subject before and learned more independence, that CLIL lessons were more fun for most learners, they were more interested, they appreciated that they were able to master knowledge in a foreign language, they better understood the context of the presented knowledge and they were more confident in

communicating on given topics in Slovak and foreign languages. Respondents stated that the use of interdisciplinary relationships had a positive effect on better vocabulary management or familiarity with the topic.

Some respondents reported problems in CLIL pedagogical classes such as learners' inattention, difficulties in memorising technical terms in a foreign language, and problems in working in pairs and in groups. It was sometimes difficult for learners to memorise technical expressions (e.g. mathematical operations), to understand abstract expressions in a foreign language or to understand a text, because some grammatical phenomena e.g. such as past tense.

Respondents felt greater demands on their work, e.g. demanding preparation for CLIL lessons and noted the need for non-language teachers to be able to speak a foreign language at a good level of communication.

In the questionnaire survey in the school year 2014/15, the answers by teachers of foreign languages and subjects were largely repeated (they were identical in the first four items). Here, too, teachers' views on the pedagogical approach naturally varied and included attitudes from extremely positive to completely negative. Frequent rewards included a positive response from learners and the motivational effect of the CLIL pedagogical approach, such as:

"These are very interesting and popular lessons, the learners love them and they themselves have said that the knowledge gained will be useful in their lives."
"Learners have the opportunity to enrich their vocabulary with technical terms and use grammar directly in context."
"It's beneficial, it develops learners' language."
"An interesting teaching method, it will expand learners' vocabulary."
"Positive benefits for learners and teachers."
"If the curriculum is interesting for children, this method is effective and children quickly and naturally acquire new vocabulary. In essence, they practice the curriculum while learning a foreign language."
"Very motivating, creative."
"Learners are more active at work."
"CLIL is a very good methodology for teaching a foreign language. The lessons are even more interesting for children than the classic ones."
"It's effective, only children perceive it as extra English."
"These lessons are more fun, they pass faster because the activities take turns. Although they are more difficult to prepare, the fact that I have been teaching by this method for three years, I have several sets of materials prepared in advance from previous school years and I only adjust according to the current needs of the current group of learners."
"The CLIL methodology is interesting, it will enrich the lessons, it's just very difficult to prepare."
"It's good if the subject has enough time allowance."

The demanding preparation as a negative aspect of the CLIL pedagogical approach was repeated for several respondents:

"These classes are very difficult for me to prepare."
"Challenging preparation, but it will liven up the lessons."
"Difficult to organise, difficult to prepare, disgusting to prepare work and methodological sheets."

One respondent described CLIL as "a big unknown."
In the school years 2015/16 and 2016/2017, teachers commented on experimental verification and CLIL in the form of semi-structured interviews.

Interviews with CLIL teachers also took place in June 2016 and 2017 at all participating schools. We received answers from the school coordinator from 2 schools.

Teachers consider CLIL to be a natural interconnection of subjects, which is very rare in our school system of teaching isolated subjects. The methodological approach creates a natural use of the English language in the context of, for example, mathematics.

The teachers who took part in the education evaluate that the education gave them a lot of stimuli.

Teachers also draw suggestions for lesson preparation from the CLIL portal. They find working through the portal more efficient than using e-mail to exchange files. The portal provides them with good accessibility and clarity of the necessary materials for all participants. Others use the portal only to upload files.

When evaluating the lessons and comparing them with the beginnings, the teachers wrote the following:

"When it comes to preparing for lessons, it's a little faster because I know where to look for materials, vocabulary - since vocabulary is specific to math, so those years have already helped me in this - I've learned something over the years."
"Although we have experience, the preparations are still demanding, because the phrases and constructions are more demanding and the content complexity of the subject is also growing. The course itself is simpler, which we attribute to the acquired experience and habits of learners."
"Today my CLIL lessons are better, I understand CLIL better and I know more activities, techniques and ways to teach CLIL lessons."

The situation in schools is different, CLIL teachers are often missing, there is a lot of fluctuation; there are few opportunities to be educated in the CLIL methodological approach.
According to most CLIL coordinators, school management is interested in being taught the CLIL pedagogical approach, but does not take any action in this direction.
In one of the schools, the situation is different:

"The school management supports CLIL, I personally work as a deputy principal and CLIL implementer, so we have no problem creating the right conditions. Teachers also have an item for the implementation of CLIL in a personal

supplement; they have the space to choose topics and link lessons as needed. Teachers' efforts in this area are highly valued."

In some schools, management also allows CLIL lessons to be scheduled. The implementation of CLIL lessons varied from school to school. Some teachers taught with CLIL once a month, some twice a month. The range is from 10 minutes per lesson to the whole lesson. In some schools, several teachers were involved in the implementation of CLIL classes, but their number varied from school year to year. There were schools where 2 to 3 teachers in one class taught CLIL lessons.

When preparing CLIL lessons, teachers tried to take into account the language level of the learners in the foreign language part of the lesson. They often consulted with the English teacher to see if the vocabulary was appropriate. They mostly focused on reading comprehension. The teachers tried to place emphasis on the natural course of the lesson, a reasonable difficulty so that CLIL would not disturb it, but complement it.

Teachers were negatively assessed mainly by the fact that they often also needed the support of English teachers. Teachers lack education. It is a problem to plan lessons and prepare language support for learners so that lessons are not difficult for them. According to them, the frequent disruption of teaching by various school actions, tests and measurements, the absence of learners was also a negative, which disrupted the smooth line of teaching and the continuity of lessons.

Teachers cited broadening their horizons in language as positive aspects. Thanks to this, the professional language was closer to the children and it also helped those who went to bilingual grammar schools. When preparing for the CLIL lesson, they also had to look for new ideas for regular lessons, due to the fact that languages are taught differently. The teachers considered the positive perception of a foreign language in the lesson of another subject, the activities of the learners, their own self-reflection with the course of the lessons to be positive aspects.

Teachers would receive help mainly from English teachers and would like to take the opportunity of joint training, i.e. good cooperation between English teachers and subject teachers. Most teachers lacked professional materials, especially in the 8th and 9th grades.

They consider the education they have completed so far to be helpful. What teachers feel when using CLIL is a lack of time, as the content of the subject increases, the time allocation of some subjects is low and the application of CLIL is not possible in every lesson.

In addition to education, some teachers would welcome publications with various activities to help them prepare for lessons.

In general, teachers feel the need for teacher education. Teachers with demanding subjects have difficulty preparing lessons and suitable language aids for learners.

The final interviews with teachers (**school year 2017/18**) involved in the experimental verification took place in June 2018. A team of collaborators visited individual schools and conducted semi-structured interviews according to a single, pre-agreed scenario of questions. (Annex No. 9). The interviews were recorded with the consent of the respondents.

The data obtained showed:
Most teachers consider the CLIL pedagogical approach to be effective and talk about "obvious" positive effects on student outcomes. When evaluating the application of CLIL, they especially appreciated better motivation, higher activity and better communication skills of learners. Teachers' personal attitudes towards the CLIL pedagogical approach ranged from mild to very positive.

"Kids really like it."
"Learners respond absolutely great."
"Kids enjoy it a lot and then I enjoy it."

None of the respondents rated CLIL completely negatively. Respondents rated working with CLIL as challenging, but also as something that "pays off". They perceived the success of their learners as the greatest reward.

"My learners from these CLIL classes are also successful at the Olympics and elsewhere."
According to both teachers and school heads, learners "receive CLIL very well", "are more active in class", "are used to working and doing different activities", are "much more communicative", "know how to use in one subject what they have learned in another".

The most significant difference between the learners of the control and experimental groups was perceived by the respondents at the level of learners' language competences.

"I see the benefit of CLIL mainly in the fact that learners are not afraid to talk."
"It is really visible on those kids. It is very visible in foreign language lessons."
"Our children have a very good level of language. If I had to compare them, many are at the level of high school graduates."

They perceived the differences as significant especially for learners who worked with CLIL from the 1st grade of elementary school.

All interviewed teachers appreciated the support of the school management and the cooperation with the CLIL coordinators. They have proved invaluable: helping beginning teachers, meetings, briefings and mutual observations. More than half of the respondents welcomed **the better cooperation between teachers** as a positive impact of applying the CLIL pedagogical approach: *"We have learned to work together".*

When evaluating how they changed their procedures and attitudes during the experiment, teachers pointed out the **initial stress**. They said it was very strenuous and felt a great responsibility. During the experimental verification, they gained a lot of new experience and often had to radically change their procedures. Many admitted big differences compared to what they did at the beginning, because they realised that in the beginning they proceeded inadequately (e.g. they translated instructions to learners, taught words in the form of a translation dictionary, etc.). Today, they are aware of significant improvements, have gained confidence and have sets of proven activities.

"I would not teach any of what I taught at the beginning today. I've reworked every worksheet."
"In the first year of my work, I actually had a big problem with choosing the curriculum, because no one told us - teach this and that. Or we didn't get any plans. We actually had to break down the curriculum ourselves, where to use the CLIL method, and this was the biggest challenge - the material security and the choice of curriculum."
"Today, in preparation, I still think that every student must master the curriculum."
"In this CLIL, after those five years, I've found that less is sometimes more."
"As for me as a teacher, I was (at the beginning) a little shocked that I basically have to do the history and I don't have the materials. Another English language - anyway, there are some CLIL sites and such. German has no support. None, none basically. I only had what I made myself. I had to draw from German sites, from German regional textbooks. But again, I had to adjust it, because the texts in those textbooks are linguistically above their level. So it was very, very demanding."

– As persistent problem areas and pitfalls associated with the application of the CLIL pedagogical approach, teachers cited:

- higher demands on the preparation of lessons,
- Lack of teaching materials that would correspond exactly to the education defined in the SEP (foreign materials are differently designed or are at a much higher language level because they are intended for native learners). In several schools, teachers have become accustomed to gradually collecting materials and creating their own workbooks,
- great responsibility in choosing topics.

b) Coordinators

No significant differences were found in the questionnaire survey of the opinions, attitudes and experiences of the EO coordinators in the first 2 years of the research.

According to the coordinators of the experimental verification project in primary schools, meetings of teachers of foreign languages and non-language subjects (hereinafter NLS) took place in individual experimental schools at various time intervals once a week or once a month. In several experimental schools they did not have a regular regime - they were implemented as needed, or as informal meetings.

Foreign language teachers and NLS discussed the preparation of lesson content, teaching materials, worksheets and presentations. Teachers often worked closely together and participated in each other's lessons.

When asked about the possibilities of education, the respondents answered that they participated in a meeting organised by the SPÚ and they educated themselves, but teachers from several schools have not yet participated in the education.

In several schools, they only accept teachers with approval of the given foreign language.

In response to the question, "How do you rate experimental verification at your school? Write 3 specific examples" respondents evaluated the process of verifying the new method positively and stated that

1) teaching is interesting for learners, they are more active, they understand the practical use of language;
2) their vocabulary is expanded, their communication language activities are strengthened. Teaching with the CLIL pedagogical principle is also beneficial for NLS teachers, as it expands their knowledge in a foreign language.

On the other hand, teachers also see the following shortcomings:

- the need for more financial support for the purchase of office supplies;
- time requirements for filling in the records of hours and preparation of methodological and worksheets.

Teachers consider the biggest problem to be to follow the thematic plan of the NLS and to prepare appropriate activities for learners.

Another problem of NLS teachers who do not have a sufficient command of a foreign language was the difficulty of preparing a lesson and the need for frequent consultations with foreign language teachers.

To the question *"What do you see as the problems in coordinating the experimental verification project?"*, teachers also made specific comments on the different "starting line" of foreign language skills of learners in individual schools, the different number of non-language subjects (1 - 3) and the frequency of CLIL application in non-language lessons (1x / month - 2x / week).

The overall evaluation by the parents was positive. Schools have seen an increase in interest in the school. Learners show satisfaction.

Schools lack the ability to financially reward teachers for increased demands on work and training.

The research team perceived the answers of the coordinators of the experimental verification as an important feedback - not only in terms of the pedagogical process, but also in terms of the organisational security of the project. Therefore, he responded to several suggestions of the coordinators by intensifying communication and increasing support activities.

c) Principals

The views and attitudes of the principals of the participating schools were ascertained in the final phase of the experimental verification in the form of semi-structured interviews, which took place in June 2018 (Annex 8). The answers obtained showed:

All directors appreciated the benefits of the CLIL methodology and are interested in continuing to apply it.

"I can only confirm that the level of knowledge of the English language and the level of communication skills of learners has increased unbelievably. Children love the English language and it is not a scarecrow for them."
"Applying the CLIL method led us to what we wanted and watched all the time for the children to communicate. It has been confirmed to us that this system is important. Our learners seem to have skipped ahead by two or three years."

All principals emphasised not only the positive attitude of learners towards CLIL, but also that the parents' have interest in maintaining it. In several schools, principals allow parents to comment regularly (once a year) on whether they want their children to continue the CLIL pedagogical approach, and parents have always chosen to continue because they see results.

"I can confirm one such experience of an interesting observation of parents, who have told us many times that when they go on holiday abroad, because they go, that their children work as interpreters for them. And they are little second-graders, third-graders and even first-graders. So they see it, those huge advances in the English language, without the stress, without the tension, that they ask in a completely natural way and spontaneously respond. So basically it really helped us a lot, a lot."

The principals emphasised the need to communicate with parents and the need to inform parents about what CLIL is and what its procedures and principles are. Several principals recalled the initial unrealistic expectations of parents (they required teaching only in a foreign language throughout the year and also in the school club) and the need to gradually correct them.

All directors appreciated the cooperation with the National Institute for Education during the experimental verification and expressed the hope that the cooperation and (information) support from the National Institute for Education will continue.

Several directors would be interested in extending the application of the CLIL pedagogical approach, but are facing the limitations of current legislation. For example, some schools have

also shown interest in the German language. But as the German language is an optional subject, they do not know how to teach it in the first grade.

Most school heads appreciated the "visible" improvement in the quality of foreign language teaching, which they attributed to their involvement in the experimental validation of the CLIL methodology. They pointed out that their learners are successful in various language competitions and Olympiads. One director stated that, thanks to the experience gained during the experimental validation with the CLIL pedagogical approach, they had decided to get involved in a challenging international project.

Like teachers, they emphasised the need for information and education of teachers - not just teachers.

4.4.3 Analysis of learners' attitudes and opinions towards foreign language teaching and CLIL lessons (questionnaires)

Aim

The aim of the pupil questionnaire (Annex 6) was to verify the effectiveness of the CLIL pedagogical approach, the recognition of the pupil's relationship to foreign language teaching and CLIL lessons, the learners' self-assessment and the extent to which CLIL's pedagogical approach improved their communication language competences.

Description of respondents

The respondents were 9th grade learners. The total number of completed questionnaires was 167 from 12 experimental schools.

The identification variables were student; gender; school; region; the founder of the school; foreign language taught; general education subjects in which CLIL has been applied.

Most schools were represented from the Banská Bystrica Region 34.7% and the least from the Košice Region 4.2%. At the same time, 83.2% were state schools, 12% private and 4.8% church. Questionnaires were completed by 54.8% of boys and 45.2% of girls (Annex 11).

After connecting the questionnaire databases and performance tests, 135 learners were generated. We assume that this group of respondents, who passed the entrance and exit tests, reached the communication level A2 in a foreign language. The slant on the right in the histogram indicates that learners who have had integrated foreign language teaching in the subject for five years are at a very good language level in the foreign language (Annex 12).

Methodology of research

A non-standardised questionnaire was used as a research method (Appendix 6). The questionnaire

had 31 items. Learners could answer each item with a scale: strongly agree, partially agree, partially disagree, completely disagree. For the negative item, the scaling was reversed.

Questionnaire analysis

The individual items of the questionnaire, which were statistically evaluated, were divided into the following categories:

1st category	Learners' relationship to foreign language teaching
2nd category	Degree of difficulty of teaching general education subjects CLIL
3rd category	Rate of improvement of FL command by introducing CLIL lessons

Recognition of learners' relationship to foreign language teaching

The results of the factor analysis as well as the analysis of individual items make it possible to generalise how learners are involved in teaching a foreign language.

The following items of popularity of foreign language teaching were asked in the questionnaire within the first component:

1. I enjoy learning a foreign language.
2. I wish I did not have to learn a foreign language.
3. English / German is boring.
4. I like English / German.
5. I like to speak English / German in class.
6. I like to write in English / German lessons.
7. I like to read in English / German lessons.
8. I like to listen to various recordings in English / German in class.
10. A foreign language is one of my favourite subjects

As for the item *I enjoy learning a foreign language*, 52% answered that they enjoy learning a foreign language very much and 41% that they partially agree with the statement, only 3% of learners do not like learning a foreign language.

68% of learners did not agree at all with the statement *I wish I did not have to learn a foreign language*, that is, they expressed interest to learn a foreign language, as well as further 20% of learners who did not partially agree with the statement. Only 3% of learners would like not to have to learn a foreign language.

English or German language is boring: 42% of learners completely disagreed with the statement and 37% partially disagreed, so they did not consider a foreign language boring. 18% of learners partially agreed and 3% of learners found English or German boring.

50% of learners completely agreed with the statement *I like English / German* and 36% partially agreed, only 5% said that they did not like English / German.

38% of learners completely agreed with the statement *I like to speak English / German* in class and 35% of learners partially agreed. 19% partially disagreed and 8% did not agree with the statement at all. We can state that 27% of learners do not like to speak and 73% like to speak English / German in class.

35% of learners completely agreed with the statement I like to write in English / German in the lessons and 40% of learners partially agreed. 19% of learners partially disagreed and 7% did not agree with the statement at all. We can state that 26% of learners do not like to write and 75% like to write in English / German in the lessons.

35% of learners completely agreed with the statement I like to read in English / German in lessons and 41% partially agreed. 18% of learners partially disagreed with the statement and 7% did not agree at all. We can state that 25% of learners do not like to read and 76% like to read in English / German in lessons.

36% of learners completely agreed with the statement *I like to listen to various recordings in English / German* in class and 40% of learners partially agreed. 17% of learners partially disagreed and 8% did not agree with the statement at all. We can state that 25% of learners do not like to listen and 76% like to listen in English / German in lessons.

When comparing individual language activities, we can state a balance in the popularity of a foreign language, which ranges between 73% - 76%.

The last item in this category was *Foreign language is one of the favorite subjects*. 36% of learners fully agreed with this statement, 37% partially agreed, 17% partially disagreed and 10% did not agree at all (Annex 13).

Conclusions

We can state that the respondents have a mostly positive attitude towards teaching a foreign language. Although a higher foreign language popularity score was obtained for girls (7.9) than for boys (6.0), the t-test did not indicate that the differences were statistically significant. The average values of the gross foreign language popularity score by gender are comparable. The popularity of foreign language teaching varies from school to school, but there have been significant differences in the negligible number of school pairs (Annex 14).

In general, we can say that the 12 values of the popularity of a foreign language were not fundamentally different among the 12 schools in the popularity factor.

The level of difficulty of teaching general education subjects CLIL

In the questionnaire within this component, questions were asked in which the student evaluates the difficulty of teaching general education subjects using integrated teaching of a subject and a foreign language.

15. I can explain the things we learned in CLIL classes only in Slovak.
25. I understood everything we did in the CLIL class.
26. I had to study a lot at home for CLIL lessons.
21. We often translated (e.g. texts) in CLIL lessons.
22. In CLIL classes, I often solved the tasks myself.
27. My parents helped me when I didn't understand something we were doing in the CLIL class.
28. It was easy to understand our teacher(s) when he/she spoke English / German.

14% of learners completely agreed with the item *I can explain the things we learned in CLIL classes only in Slovak*, 28% partially agreed, 29% partially disagreed and 29% disagreed. We can state that more than half of the learners would be able to explain what they also learned in a foreign language in CLIL lessons.

41% of learners completely agreed with the item *I understood everything we did in the CLIL class*, 35% partially agreed, 18% partially disagreed, and 6% did not agree at all. We can state that despite the fact that 76% of learners understood everything in CLIL lessons, 24% of learners had little or no understanding. For this reason, it is necessary for CLIL teachers to pay more attention to learners who, due to the language barrier, have little or no involvement in CLIL activities.

60% of learners absolutely did not agree with the item *I had to study a lot at home for CLIL lessons*, 23% partially disagreed. 11% of learners answered that they partially agreed and 6% of learners completely agreed. We can state that 83% of learners did not have to study much at home for CLIL lessons and 27% prepared more intensively for CLIL lessons.

30% of learners completely disagreed with the statement *We often translated (e.g. texts) in CLIL lessons,* 37% of learners partially agreed, 24% partially disagreed and 9% completely disagreed. This is probably the difference between schools. Translation still persists in schools, although all trainings have emphasised that CLIL teachers use different visual aids or descriptions to understand and only in the final stage of translation. The aim is for learners to understand the text without translation.

24% of learners completely agreed with the statement *In CLIL classes, I often solved the tasks myself*, 41% partially agreed and only 28% did not agree at all. These percentages also indicate that

learners did not always have to work alone. This is also proved by the item in the 3rd category In CLIL classes, I often spoke with my classmates in English / German, where 19% of learners completely agreed and 31% partially agreed. Nevertheless, 65% of learners do not work largely with classmates, but alone.

57% of learners did not agree with the statement *My parents helped me when I didn't understand something we were doing in the CLIL class*. 22% of learners partially disagreed, 13% partially agreed and 9% of learners completely agreed with the statement. We can state that parents (though only 22%) still have to help learners understand the curriculum.

56% of learners absolutely agreed with the statement *It was easy to understand our teacher(s) when he/she spoke English / German*, 31% of learners partially agreed, 10% partially disagreed and 4% did not agree at all.

Comparing the results of the item *It was easy to understand our teacher(s) when he/she spoke English / German* with the results of the item I understood everything we did in the CLIL class, Pearson's correlation coefficient ($r = 0.484$) shows a very close relationship between them. We can explain this in such a way that if the teacher could explain the subject matter in a foreign language well to the learners, then the learners understood everything in class (Appendix 15).

Conclusions

The majority of learners did not find CLIL lessons difficult. 41% of learners rated CLIL lessons as fully comprehensible and 35% as partially comprehensible. The difficulty for boys is comparable to that for girls; differences by school were statistically significant for only six pairs of schools. The difficulty of teaching in individual general education subjects can only be estimated, as the learners did not express themselves directly and the representation of subjects taught by the CLIL methodology was very disproportionate. We can assume that learners consider CLIL lessons in biology and physics to be more demanding than CLIL lessons in art education and computer science. The popularity of foreign language teaching determines the difficulty of teaching - the higher the popularity, the lower the difficulty. However, the variability of difficulty is explained by the popularity of only 26%, so the difficulty is also influenced by other factors (Appendices 16, 17, 18, 19).

Rate of improvement of foreign language command by introducing CLIL lessons

The questionnaire within this component contained items in which the student assessed his enrichment with the CLIL pedagogical approach.

14. I can explain some of the things we learned in CLIL lessons in a foreign language (AJ / NJ).
15. I can explain the things we learned in CLIL classes only in Slovak.
16. CLIL lessons helped me learn a foreign language.
19. In CLIL classes, I learned how things work in the world.
12. I really liked CLIL lessons.
20. In CLIL classes, I often spoke to my classmates in English / German.

37% of learners completely agreed with the statement *I can explain some of the things we learned in CLIL lessons in a foreign language (AJ / NJ)*, 39% partially agreed, 16% partially disagreed, and 8% completely disagreed.

29% of learners absolutely disagreed with the statement *I can explain the things we learned in CLIL classes only in Slovak*, 29% partially disagreed, 28% partially agreed and 14% of learners completely agreed. We can state that more than half of the learners can explain the things they had learned in CLIL lessons not only in Slovak, but also in a foreign language.

34% of learners fully agreed with the statement *CLIL Lessons helped me learn a foreign language*. 41% of learners partially agreed with the statement. 16% of learners chose the answer partially disagreed and 10% of learners completely disagreed.

25% of learners completely agreed with the statement *In CLIL classes, I learned how things work in the world*, 47% partially agreed, 18% partially disagreed and 10% strongly disagreed.

36 % of learners completely agreed with the statement *I really liked CLIL lessons*, 41% partially agreed, 16% partially disagreed and 8% strongly disagreed.

19 % of learners completely agreed with the statement *In CLIL classes, I often spoke to my classmates in English / German*, 31% of learners chose the option partially agree, 25% partially disagree and 24% strongly disagree.

Conclusions

37% of learners say that they can explain some things learned in CLIL lessons in a given foreign language and only 8% cannot explain them in a foreign language. Learners expressed a positive opinion on CLIL, but only slightly.

We can state that only 11 - 20% of learners rated the benefit of CLIL as below average. Most learners consider the CLIL pedagogical approach to be beneficial, which means that learners consider CLIL lessons for their language development to be positive. Learners involved in experimental validation do not consider CLIL hours unnecessary.

According to the tightness of the relationship between performance and opinions in the questionnaire, it can be seen that CLIL lessons were considered (naturally) by less demanding learners in a foreign language, or for undemanding learners who were better proficient in a foreign language ($r = 0.609$). Similarly, the contribution of CLIL ($r = 0.415$) and the popularity of CJ ($r = 0.249$) are statistically significantly related to proficiency in a foreign language (Appendices 16, 17).

4.4.4 Observations of CLIL lessons in the school year 2017/18

At the end of the experimental verification, we analysed 12 hours of CLIL in the schools involved in the project. We observed various subjects: 3 hours of geography (one in German), 2 hours of mathematics, 2 hours of civics, 2 hours of physics, evangelical religion, biology and music education, which was the only lesson with a soft CLIL. The lessons were observed by 4 different observers at 8 schools in different regions of Slovakia. 5 hours were taught in the 9th grade, another 5 hours in the 8th grade, and 1 lesson in the 7th - 6th grades. The choice of class and subject was decided by the school management together with the teachers.

Observers recorded their observations on the same observation sheets (Appendix 7). In order to ensure the objectivity of the observations, detailed notes were made on the observation sheets as to what the observers should record. In addition, we analysed 11 preparations for CLIL lessons prepared by teachers on request (1 teacher did not prepare). Teachers worked according to a common scheme, in which they were to record the name of the subject, the language in which they teach, the topic of the lesson, subject and language objectives, new vocabulary in a foreign language and planned activities, or the course of the lesson and the method of evaluating the lesson. The preparations also included worksheets provided to us by 7 teachers. We conducted an interview with each observed teacher, in which we asked about their impressions of the learners' work in the class, about meeting the goals and their satisfaction or dissatisfaction with the course of the lesson.

Providing language support (scaffolding)
As mentioned above, CLIL is CLIL only if the lesson includes language support (scaffolding), so when analysing lessons, preparation and worksheets, we tried to answer the question of whether teachers provide language scaffolding that would allow learners to learn the terminology and target language more effectively. Within a language, it is possible to provide scaffolding when expanding vocabulary by visualising it or verbally clarifying the meaning in a given language, while learners can solve different types of tasks to either understand or consolidate vocabulary.

It is of great importance to provide language scaffolding in the acquisition (not explicit learning) of language structures that express various academic functions and help learners to verbalise answers orally and in writing. Teachers can either carefully formulate questions that learners then use in their answers (e.g. *What **are** stars **made of**?*), Or they can provide learners with a basic structure in which learners then change only the keywords, or terminological terms, e.g. ***Stars are made** of gases*. Planets ***are made of** rocks*. When presenting such structures, they focus on their meaning, not on the grammatical form. In other words, the CLIL teacher does not explain the structure from a grammatical point of view, he teaches it as a phrase.

In the same way, vocabulary that is above the pupil's level, but important for the new subject, can be presented in the structure and the pupil must use it repeatedly, e.g.: *The number is **divisible***

by 3. Such examples can be written on the board throughout the activity so that learners can return to them if necessary. Given that primary school learners have a language level according to the European Framework of Reference for Languages A1 - A2, learners need such scaffolding in order to be able to produce language and verbalise their knowledge in controlled or partially controlled activities (Gondová, 2013).

Language support (scaffolding) can also be provided to learners when reading or listening to texts or watching videos from which learners are to obtain information about the new curriculum. There are many possibilities, e.g. identify learners' preconceptions; learn in advance some of the keywords (not terminology) needed to understand the text.

Vocabulary development

The analysis of the lessons showed that 10 teachers tried to provide learners with language support in the presentation and acquisition of new vocabulary related to the curriculum. They mentioned this vocabulary in their plans and usually prepared the tasks they gave to the learners on the worksheet. The most common activities of this kind were assigning words to pictures (at 3 o'clock) and assigning words to their definitions (at 5 o'clock). For 1 lesson, learners listened to new terminological concepts from a recording on the Internet. These concepts were also visualised and the task of the learners was to write them in English. 2 learners wrote the terms on the back of the board, the others in notebooks. Although we believe that the activity was good, it was not completed because many learners had difficulty understanding and writing the terminological expressions, but still did not return to the expressions after the activity. Another interesting activity was the construction of a tree composed of various geometric shapes, which had terminological terms written in the edges in English and Slovak. The learners' task was to assign English terms to their Slovak equivalents.

Vocabulary was included in the plans of 10 lessons out of 12, and in all these lessons, teachers prepared language support (scaffolding) for learners to help them acquire vocabulary. In most cases, however, learners worked with the new vocabulary only at the word level and did not have the opportunity to use new expressions in sentences to solve other tasks. We must therefore state that the vocabulary is presented in the lessons, but not acquired, for which it is necessary to implement the process of automation. However, he was absent from almost all classes. We assume that this arises from the fact that teachers are not teachers of a foreign language, but of a subject, and do not know the forms of how to practice vocabulary with learners in context.

Another problem with working with vocabulary is the fact that some teachers had trouble choosing vocabulary. Most of them were new terminological terms or key terms, but there were also cases where the teacher considered as keywords those words that appeared only by chance in the assignment, but the content was not related to the subject, e.g. *the words rocket, chair lift and aircraft* when calculating distance and speed. The incorrect choice of vocabulary given in the plan was also reflected in the fact that the teacher did not pay any attention to it in class in the end.

However, he also did not pay attention to key concepts that learners did not master and could not use in verbalising the solution of word problems. These lesson observations indicate that more attention needs to be paid to working with professional text, selecting key vocabulary, practicing vocabulary and using it in communication when training CLIL teachers.

Development of academic language

Teachers devoted only 2 hours of the development of the academic language to those we had the opportunity to observe. During one of them, while repeating the curriculum from the previous lesson, the teacher wrote a sentence on the board: *"It's a type of triangle that has all sides equal."* It was the answer to the question *What is an equilateral triangle?* Subsequently, the learners used it in answers to similar questions as scaffolding and, according to her, formed other sentences about triangles and angles. This type of task allows learners not only to automate new vocabulary, respectively, concepts that they have to learn within the curriculum, but also allows them to realise how to talk about these concepts, that is, how to verbalise your knowledge. So it helps them master the language. The disadvantage, however, was that the task was solved frontally, so only some learners had the opportunity to answer the teacher's questions aloud. If they solved the same task in groups of 3 or 4 learners, each of them would have the opportunity to repeat the target structure several times and, in addition, would have the opportunity to ask questions in which to use the target vocabulary (terminology) productively.

In addition to this activity, we observed 2 other activities in the lessons that enabled learners to produce academic language. In the same lesson, learners obtained information from the video to answer questions they had received in advance. The problem was that the learners did not have the space to discuss their answers in small groups. During such a discussion, they could practice the target language, supplement and consolidate the acquired knowledge. However, immediately after the end of the video, the teacher asked questions to the whole class, which significantly limited the learners' opportunities to work independently with new knowledge and to use the new language. In another lesson, the learners worked in pairs and, on the basis of the text, added information to the sentences they had in the worksheet and which contained structures … *is called … is made from … was introduced to* … and so on. Subsequently, they read them to the whole class, but did not get the opportunity to use these structures in spoken speech.

The other 10 teachers paid no attention to the development of the academic language. The structures that learners should learn during the lesson to be able to verbalise their knowledge were not included in teachers' plans or worksheets, nor were they used in the lesson, although there would be space because teachers included an activity or game in the lesson which required the use of the language. Because the learners did not know it, in one of the activities instead of *My definition is … What does this definition stand for?* used e.g. I have … and they read their definition and the question did not come up. The answer of the student who had the required term on the card was one word, because he could not formulate a sentence as The / Your definition stands for ….

We encountered the same problem in the next lessons. Because the scaffolding of the target language was absent, the learners could not express themselves and the answers to the teacher's questions were only one-word. It is probable that this was the reason why some learners did not even try to answer, but it would be necessary to conduct an interview with the learners so that we could confirm this assumption.

Some teachers did not provide scaffolding to learners even if they were asked to do so. At one lesson, the student said she could not say the necessary word. The teacher spoke her word, wrote it on the board, but did not say it. At another lesson, several learners quietly complained that they did not understand the tasks, but the teacher did not return to them, although she said in an interview that she noticed that some learners did not catch up and did not understand the subject matter. In another lesson, during the frontal repetition of concepts, the learners could not explain some of them, so the teacher did it for them without helping them with the language. In the next lesson, the teacher wrote the terminology on the board only when the learners had a problem with its use. Nevertheless, learners could not use it in the sentences they had to create when describing graphs, creating them or presenting problem solving. Even in this case, scaffolding was missing when using the target language to help them describe the graph. There was also no opportunity to work in small groups, which would allow learners to learn the target language structures.

Overall, we can say that the teachers observed worked with the language in the CLIL lessons as if they assumed that the learners would deal with it themselves and start using it without the purposeful help of the teacher. Some of them even expressed this in an interview when they said that learners do not need help with the language because they are already at a good level. Learners worked with the language mainly on a receptive level - reading texts, listening - mainly to the teacher or each other, but they had very few opportunities to produce the language. In this way of teaching, the learners did not develop the language sufficiently and did not even get the space to learn the language in class.

Development of language competencies

In most lessons, learners received new information mainly from teachers, but it was positive that we also observed work with other sources of information, which were mainly made up of different types of texts. In three lessons (at three different schools), learners read texts to get information. In one of them, the teacher presented the meaning of the keywords before reading the text, and in addition, the content of the text was visualised, which helped learners understand its meaning. However, we considered the task for the text itself to be the problem, which was to assign individual parts of the text to the pictures and explain their decision. The task was focused only marginally on the subject matter, because when assigning pictures and justifying their decision, learners did not work with the information that they had to obtain from the text according to the subject goal. Therefore, it would be appropriate for this task to be followed by another, with which the learners would obtain the required information. In solving

this task, the teacher did not provide learners with language scaffolding, with which they could explain their decision. This was subsequently reflected in their answers. Despite the fact that in this case they had the opportunity to work in pairs, they did not always solve the task correctly and could not verbalise their decisions in English. In the observed lesson, the teacher did not return to the subject goal, so the learners did not obtain the information needed to achieve the goal in the lesson.

We also observed the work with the written text in the next lesson, in which the aim was for the learners to learn the basic concepts related to the new curriculum. All of them were included in the text and with the right task the learners could achieve the goal. Learners worked on the text frontally, with one of them reading the paragraph aloud, and then the teacher asked the paragraph questions to verify its comprehension. In such frontal work, however, only some learners answered the questions, or the teacher answered the questions. In the next activity, the learners worked with vocabulary and did not pay more attention to the key term from the text, so they did not learn new terms from the text.

We met another source of information in math class. Learners received questions about the new curriculum on the worksheet and their task was to watch the video and answer the questions. It was a very good task, but after the video, the learners were not given the space to discuss the answers in small groups, they answered the questions in front, and therefore it was not clear whether all of them managed to achieve the goal.

We did not encounter the interpretation as such in the lessons observed. In 6 lessons, the aim of which was to present the new curriculum, teachers used texts as sources of information or had a dialogue with learners, asked them questions, and gradually presented them with new information, which they then supplemented in worksheets. They prepared them either themselves or used worksheets from the Internet. However, the worksheets were mostly focused on the presentation of new vocabulary and the task of the learners was to assign new concepts to pictures or definitions. However, tasks to use the new vocabulary in problem tasks were absent. The next 6 hours were focused on repeating the curriculum and the learners either answered the teacher's questions or solved application tasks.

Based on the above facts, we believe that teachers paid little attention to language acquisition and learners did not learn it effectively in the observed CLIL lessons.

Learner-oriented teaching

CLIL is based on constructivist principles and therefore it is essential that teaching is student-centred and that learners are as active as possible during the lessons. Teaching should be managed in such a way as to allow all learners to learn in class and to construct their own knowledge, which can only be achieved if learners work independently of the teacher in small groups that allow learners to work at their own pace and allow learners to differentiate. The teacher acts as a

facilitator, providing learners with information about the objectives of the lesson and providing them with subject and language scaffolding, without which learners would not be able to work independently and achieve the set goals. The lesson should be planned so that all activities are aimed at achieving the stated goals and so that it is focused on the process of learning, acquisition of cognitive skills and automation, respectively, acquisition of language structures that help learners to verbalise acquired knowledge and skills.

For this reason, they need to solve not only tasks aimed at understanding and applying the curriculum, but also those that require processes to analyse, evaluate and create. In the learning process, the teacher provides individual feedback, continuously evaluates learners formatively, uses various learning strategies, which learners gradually get acquainted with and discuss. In this process, learners have the opportunity to learn from each other, help each other, provide feedback and also have the opportunity to self-assess.

Learning objectives

The first aspect of student-centred teaching, which we would like to take a closer look at, is to inform learners about the objectives of the lesson. In order for learners to develop their knowledge and different competencies independently of the teacher, they need to know what to achieve in class, what to strive for, so they need to know the goals. The presentation of goals is therefore a prerequisite for a successful CLIL lesson.

However, in the observed lessons, the teachers only partially told, or did not tell at all, the learners about the goals. They were also not mentioned in the student worksheets we had available. Most often, learners learned the topic of the lesson, but the teacher did not inform them about what they should be able to do with the information obtained, e.g. *We will take over the new state. We will talk about* .... . Other teachers informed learners about the various activities they would do in class, such as: *We will repeat the previous subject matter; we will have a quiz; you will work in groups*, etc. In the plans, the goals were formulated similarly and some of them were not even expressed in terms of student performance, such as: *To teach learners the basic ... concepts. Explain to learners ... Introducing learners to interesting things* .... . Teachers did not inform learners about language goals at all. Thus, learners did not know what to learn, what to achieve in class, what performance they should be able to give at the end of the lesson, so that they could evaluate the learning process themselves as successful or unsuccessful at the end of the lesson.

We believe that teachers paid insufficient attention to the formulation of goals. Because their formulation was not correct and sufficient even in the preparations, the individual activities were not always aimed at achieving them. E.g. learners read a text in which they first encountered new concepts, which according to the preparations were one of the aims of the lesson. The control questions, which the teacher asked only after reading the text, did not make it possible to verify whether all the learners understood the individual terms. In other activities, however, the learners did not address this concept at all; they were focused on additional vocabulary and

new content. In several lessons, learners tackled typical language tasks (global comprehension of the text), but teachers did not pay explicit attention to achieving subject objectives. E.g. in one lesson, learners assigned short texts to pictures, but the object was to understand the reasons for certain actions of people. These were mentioned in the texts, but the learners (and the teacher) did not pay any attention to them in class.

Overall, we can say that although teachers have goals stated in their plans (required by the form), they are not always formulated in terms of student performance and teachers do not consider it necessary to thoroughly acquaint learners with them. The objectives of the subjects are planned more explicitly and more precisely than the language objectives, but they are all oriented only to the development of lower thought operations. Language goals are often set too broadly, especially when it comes to developing receptive or productive skills. Teachers do not explicitly state the goals in the lessons and maybe this is the reason why they do not pay enough attention to their fulfilment.

Development of higher thought operations

Another aspect we would like to focus on is the development of the student's higher thought operations. The analysis of the objectives that teachers stated in their preparations points to the differences between the planning of subject and language objectives. The subject goals are focused on the development of lower thinking operations of the student, they require from them especially the ability to remember and / or apply, for example: *learners can calculate ..., teach learners to recognise ..., learners can identify ..., learners can define ..., learners repeat basic concepts ..., etc*. Like the goals, the tasks that learners solve in class require learners to have either factual or conceptual knowledge at the level of remembering or understanding. In mathematics and physics classes, we also encountered application problems, where learners had the task of counting different types of examples, which they had solved similarly before.

The teachers asked the learners mainly reproductive questions and the tasks that the learners solved had a convergent character. These types of tasks place small demands on the independent thinking of the student, who only reproduces the knowledge he has previously acquired either from the teacher or from another source. We did not see problematic or creative tasks that would help learners develop a divergence of their thinking in the observed lessons. The two tasks, which had a divergent solution, were not part of the observed lessons - the teachers assigned them to the learners for homework. One task required learners to consider how sects differed from official religions. In the next lesson, the teacher asked the learners to express their views in writing regarding the publication of their photos on the Internet without their consent. Both tasks were individually new for the learners, they had to come up with their own solution, and therefore they developed higher thinking operations of the learners. It is a pity that their teachers did not enroll in classes, because in solving these tasks with classmates, learners would not only express their own opinion, but they would have the opportunity to learn to argue, evaluate classmates' opinions, look at the same problem from several points of view, tolerate each other,

etc. The range of competencies that learners would acquire would be much wider than the range of competencies that learners acquire in frontal teaching and solving convergent tasks.

The subject objectives, as set in the teacher training, were thus oriented towards the development of lower thought operations. We did not observe tasks aimed at developing higher thought operations and developing learning strategies in class.

Language goals were also largely focused on lower thought operations and focused on developing learners' vocabulary. However, in contrast to the subject objectives, there were more among the language objectives, which were focused on either receptive (reading and listening comprehension) or productive (oral and written expression) creativity. The 4 teachers had the goals for the development of communication activities, reading and comprehension of the text, but only 1 managed to achieve this goal (learners had the task of supplementing the missing information from the text in sentences and worked in small groups, so they were activated and could also help). Another teacher achieved the goal only partially, because the output to the task to the text (assign short texts to the pictures) only verified his global understanding, but did not allow learners to achieve the subject goal (know the reasons why ...). For the next 2 lessons, the learners translated the texts, so they did not acquire the skill of reading comprehension in a foreign language. Learners also read in other lessons, but it was not about getting information from the text, but rather about understanding the definition that had to be assigned to the correct concept. We consider the activity during which the learners watched the video and were expected to get answers to the questions from the commentary to the visual presentation, whose aim was to find out to what extent they understood the new concepts, very good. From a linguistic point of view, understanding the text was a matter of receptive creativity and thus a higher thought operation.

The 4 teachers also planned the development of speaking skills in their training, but their goal was set too broadly: *To practice the ability to speak and use language. Talk about...* . However, in the lessons, the learners did not have enough space or scaffolding to really practice speaking, because the lessons were conducted in front and the learners only answered the teacher's questions, so there was no interaction between them. The communication activity of the teacher prevailed in all lessons, individual learners only spoke sporadically, so it is not possible to talk about the development of speaking skills in all learners. In some lessons, we observed activities in which learners were socialised and their task was to work on solving a problem in small groups, but it was about working with vocabulary. The learners' task was to assign words to definitions or pictures. These were receptive tasks that did not provide much space for speaking. We did not observe language scaffolding, which would allow learners to use the language when working in small groups and which would develop learners' skills in using the target language in verbal or written expression at all.

Part of the development of higher thought operations is also the ability to evaluate their learning and the achievement of goals and learners must be gradually led to this. However, the evaluation

of the lesson and the achievement of the goals were planned very formally in the teacher training, e.g. *continuous oral evaluation of the solution, continuous evaluation of results*, etc.

Due to the fact that the teaching was mostly frontal, teachers did not have enough space for formative evaluation of individual student performance. Therefore, they could not know them and could not tell them where they had problems, they could not help them with a subject matter they did not understand, and therefore they could not even provide them with subject or language scaffolding to move them further in their learning. For learners, this also meant that they did not learn to understand the learning process and did not acquire the competencies needed for self-assessment.

At the end of the lesson, the 3 teachers asked the learners what they liked or did not like about the lesson, which part of the lesson was the most difficult for them and why. Such feedback is useful and provides the teacher with valuable information to increase the effectiveness of teaching. However, due to the nature of the lessons, we did not have the opportunity to observe whether and to what extent teachers would take into account learners' comments and opinions.

Overall, we can state that the development of higher thought operations of the student was insufficient at the observed CLIL lessons. The subject objectives did not include such a development at all; all the activities we observed were focused on the development of lower thought operations, which is not in accordance with the principles of CLIL. Teachers did not explicitly address the development of learners' metacognitive competencies. As for language goals, in some classes they also included the development of higher thought operations. However, the objectives were not sufficiently specified, and perhaps that is why their implementation was not consistent.

Activation of learners

One of the basic principles of CLIL is student activation. This means using methods that activate learners' thinking and creativity. In their application, the teacher uses the experience and previous knowledge of learners, personalises the curriculum as much as possible, leads learners to independent knowledge and problem solving, as well as to evaluate their own learning process. Of course, this is only possible if the teacher's approach to learners is individualised.

Active participation of learners in the lesson is enabled by activating methods that have an interactive character, that is, they enable learners to interact with each other and support their productive activities. However, we observed very little use of such methods in CLIL lessons and the goals of such activities were focused on lower thought operations. As we have already mentioned, the lessons were conducted frontally, the learners mostly did not work independently, but under the guidance of a teacher whose main role in the lesson was the role of the controller, not the facilitator. Learners answered the teacher's questions, worked out the tasks assigned to them, but did not have many opportunities to participate actively in the teaching process, which did not contribute to the development of their positive affective qualities. The observed teachers

tried to keep the class under control throughout the lesson, and only 4 of them included work in small groups in the lesson.

Interviews with teachers showed that they understand student activation differently. Some see its manifestation in the fact that learners are eager to answer the teacher's questions, others understand the student's activity in the fact that the student completes all assignments, that is, he/she has them written in a notebook. However, they do not try to assign them tasks in such a way that they solve them independently of the teacher and at their own pace, so they do not give them much room to learn. One of the teachers states that when activating learners, the output is important for the activity to work. Although he believes that the teacher must control the activity of the learners, he also states that *it is necessary to build responsibility in the learners for their work, that the teacher should not be like a supervisor ....* According to him, the individual parts should be activating, learners should be able to work, but still cannot formulate exactly what he understands the term student activity is and cannot implement activating methods in class. The observations of the lessons showed that the lessons are not sufficiently oriented towards the learners. Teachers do not activate them for most of the lessons; learners do not know the learning objectives and the lessons are mostly frontal. Thus, learners do not have enough space for an active learning process.

Another problem is the fact that frontal teaching does not provide a safe environment for the learning process. We observed that learners were often afraid or ashamed to present their answers, or needs and shortcomings. If teachers called on learners who did not report, they answered in Slovak in the English part of the lesson because they were afraid to answer in a foreign language. If they were called to the Slovak part without a report, they often did not respond at all. Some teachers accused learners of unwillingness to engage in activities, of unwillingness to prepare for lessons at home, of refusing to speak English, but did not think about the causes of such behaviour of learners.

Overall, we can say that the learners in the lessons were not activated, or were activated very little. They did not have enough opportunities to work independently of the teacher and solve assignments independently. They also did not have the opportunity to work with the teacher to determine learning objectives, to define content, to choose methods, to monitor the whole learning process and to evaluate and self-evaluate. Therefore, they did not learn to take responsibility for learning, they did not acquire learning strategies and metacognitive competences, which is not in line with the principles of CLIL, and of course it did not contribute to the development of learners' autonomy.

Conclusions

Observations of CLIL lessons in primary schools, which participated in the experimental validation of CLIL's pedagogical approach, showed that there are still large gaps in the implementation of CLIL. On the positive side, teachers made extensive use of visual support (photographs,

drawings, pictures and/or videos) to help learners understand or illustrate the new curriculum. Some teachers tried to provide learners with information about the new curriculum from various sources, not only from the teacher's interpretation, but also from reading texts or videos.

Because CLIL has dual goals, we also looked at how teachers helped learners develop language skills in the lessons we observed. It is good that they often used exercises that helped learners understand the meaning of the target vocabulary and subject-specific terminology. On the other hand, only two of the observed teachers tried to help learners notice what structures are used in a foreign language to express meanings, that is, they explicitly helped them to notice and use the various academic functions of language to define and describe. Other teachers did not pay attention to academic language.

However, we must state that in the observed classes, CLIL lessons did not take place in accordance with its methodology, but were conducted very traditionally. Teachers did not use activating methods and teaching was not student-centred. Teachers did not formulate questions related to higher thought operations, which would help learners to better understand the curriculum, actively process information and use language effectively. The volume of work in pairs or small groups was not sufficient and the interaction between learners, which would allow them to verbalise the acquired or acquired knowledge, or to deepen them, was very rare.

We believe that school teachers who choose to offer CLIL pedagogical access to learners should have the opportunity to attend training courses on the foreign language acquisition methodology, academic language and academic functions. This would help them to linguistically analyse different texts and identify the language that is necessary for learning and interaction in a foreign (but not only) language.

Teachers also need more information and skills on student-centred teaching and activating methods. It is also necessary for them to become more deeply acquainted with the formulation and implementation of goals that help learners develop higher thought operations; further with methods of group or cooperative teaching; with methods for detecting preconcepts, using various graphs, Venn diagrams, mind maps or tables, or with methods for taking notes. The observations also pointed out that teachers should be explicitly familiar with subject and language learning strategies and the methods that allow them to be presented, as learning strategies have not been addressed by teachers in the lessons observed. In frontal teaching, learners had very few opportunities to speak; teachers generally did not explicitly support the development of this skill (with the exception of two). Therefore, we think that they should also acquire a repertoire of activities that develop not only communicative language activities, namely oral expression, but also writing, to which they did not pay any attention in the observed lessons.

CLIL teachers should take on the role of facilitators. The facilitator needs to have competencies and skills that were not required of teachers in a traditional classroom. He/she is responsible

for formulating questions that will interest learners and stimulate their curiosity. Other competencies of the facilitator are the creation of problem situations and tasks that will help learners master the subject and language, the ability to provide learners with scaffolding, which will help prevent problems arising in the learning process and manage them. The facilitator provides learners with feedback, teaches them to become responsible for their own learning and to understand the learning process. We believe that unless the approach to teaching in CLIL classes is changed, its results will not live up to expectations.

Experimental verification was perceived by teachers and school principals as a positive experience. CLIL assessed the pedagogical approach as effective and especially appreciated better motivation, higher activity and better communication language activities of learners. None of the respondents assessed the CLIL pedagogical approach negatively and do not plan to end its use. All respondents emphasised the need for intensive cooperation between teachers and support from school leaders (assistance to beginning teachers, workshops, mentoring and peer reviews). We state that there is still a lack of teaching materials, a lack of teachers who speak a foreign language at a sufficient language level and the need for quality continuing education, which was also pointed out by the results of direct observations.

5. Conclusions and recommendations

5.1 Research conclusions

Experimental verification of the CLIL pedagogical approach in lower secondary education took place in the years 2013 - 2018 in 14 primary schools in Slovakia, gradually in grades 5 - 9. For objective reasons, the sample of tested learners decreased during the project, as we state elsewhere in the report, and therefore it is not possible to draw conclusions across the board. Nevertheless, based on the findings from interviews with pedagogical staff - project participants, observing CLIL lessons, observing the whole process over 5 years, we can define the most important knowledge and experience with the implementation of CLIL pedagogical approach.

As part of the hypothesis verification, we focused on various methods to obtain the most objective results possible. We conducted both quantitative and qualitative research.

Testing in a foreign language took place every year, always at the beginning and end of the school year. Learners in experimental and control classes were tested. The aim was to verify communication language activities. The tests did not include vocabulary that learners acquired on professional subjects. Overall test results were averaged for all experimental and control classes. The aim was not to evaluate individual primary schools separately.

From the analyses of the test results, we found annually that, on average, the learners of the experimental classes had better results in communication language activities than the learners of the control class. The biggest differences were mainly in the general vocabulary and writing section. The learners of the experimental classes were able to formulate sentences in a clearer way in written speech; they could describe things or situations in more detail. On the contrary, in the control classes, the learners wrote sentences that were often incomprehensible; their meaning could not be understood.

We were unable to provide an oral presentation during the verification due to capacity reasons. The oral presentation of the learners of the experimental classes can be partially assessed only within the observed CLIL lessons. CLIL teachers evaluated the learners of the experimental group more positively in questionnaires and in interviews, they stated that the learners were able to react more quickly in CLIL lessons, they also partially understood the professional text and were able to work with them. We saw different groups of learners in the observed lessons. In some schools, the level of oral learners was very good, but we did not observe this fact in every school. There were classes where a certain part of the learners were very actively involved in the activities within the CLIL lesson, but some learners were more passive in the lesson and had only a limited effect. Sometimes they didn't even have the opportunity to speak, because only more active learners got a word out.

When comparing the test results between individual schools, we found that not every school achieved the same improvement. We think that, assuming that each experimental primary school had the same conditions, such as in the number of CLIL lessons taught, in the quality of CLIL lessons taught, the learners would achieve a much better score in the individual items. The intensity of CLIL lessons during one school year is one of the factors influencing not only the achievement of better results, but also the motivation of learners. Learners also better observe their learning progress during regular CLIL classes.

Progress in learning (achieving better educational outcomes for learners) is also influenced by a factor such as an organised CLIL lesson - the extent to which learners understand the subject matter, practice and be able to learn it in CLIL lessons.

In CLIL lessons, we observed over the course of 5 years that most teachers spend very little time practicing and consolidating new curricula. They make little use of methods such as cooperative learning or the critical thinking method. Not every school had the opportunity to observe in CLIL lessons the use of methods that support the development of critical thinking or problem solving. There was often a lack of alternation of different social forms such as work in pairs or groups. Teaching was mostly more frontal. We observed a difference when the teacher was also a foreign language teacher. He was able not only to practice new vocabulary with learners in various activities, but learners also had the opportunity to use new vocabulary in context. We state that the difference in test results between individual schools is also related to the quality of CLIL lessons.

In the school year 2017/2018, we analysed twelve hours of CLIL. Due to the low number, we cannot generalise the following statements to all teachers and experimental schools. Based on the observed CLIL lessons, we can conclude that the teachers largely assumed that the learners were at a good language level, that they could use a foreign language without their teacher's help. Learners worked largely with a foreign language receptively - they read texts, listened, but had very little opportunity to produce themselves. We observed these not only in CLIL classes, but also in foreign language classes. Learners had only minimal space to practice a foreign language directly in class.

In CLIL classes, we observed that teachers often teach frontally. We observed this mainly in those teachers who did not participate in the offered CLIL trainings, or in teachers who have only a very short or no pedagogical experience.

Teachers often set subject goals by focusing on the development of lower thought operations. We did not observe tasks aimed at the development of higher thought operations and the development of learning strategies in CLIL classes. According to the teachers, they take over these tasks in their mother tongue, as if they did not trust the learners to master them in a foreign language.

Observations of the lessons showed that the lessons are not sufficiently oriented to the learners, the teacher often does not point to the connection with the practice, the learners are not familiar with what they will learn in the lessons. We must state that the hours observed were conducted very traditionally.

Here we see insufficient training of teachers in their studies at pedagogical or philosophical faculties as well as insufficient practice, as lesson planning, goal setting, activities to support and develop language and subject content, the use of various social forms do not only apply to CLIL lessons.

The experimental schools were organised by CLIL lessons themselves. During the verification, they adjusted not only the intensity but also the forms of the CLIL lessons. Some primary schools have taught with the CLIL pedagogical approach in vocational subjects such as biology, geography, physics, chemistry and other subjects. The choice of subject depended on how the school management was able to provide teachers of professional subjects who also spoke a foreign language. Some schools have set aside extra CLIL lessons as part of their teaching by introducing a CLIL course from the available lessons.

From the analysis of interviews with CLIL teachers, we can conclude that most teachers consider the pedagogical approach to be effective. They observed an increase in learners' interest in a foreign language and in the subject itself.

At the beginning of the experimental verification, the biggest problems were in the preparation of CLIL lessons, in the selection of a suitable topic, vocabulary, in the preparation of worksheets. CLIL teachers also had problems with the correct professional terminology, or were unable to correctly assess the language level of the learners, what the learners at the given level can already do and where they need language support. As part of the experimental verification project, CLIL teachers had at their disposal the CLIL portal, where each school published at least one CLIL lesson per month. Teachers could exchange views, experiences and "learn" from each other. They had another educational opportunity within an accredited program, in which attention was paid to the preparation of the lesson.

The biggest problem occurred in the upper grades (in the 8th - 9th grades), where several teachers stated that their language level in a foreign language was insufficient. The preparation of CLIL lessons was very difficult for them. CLIL teachers had to work closely with foreign language teachers.

Experimental verification of the CLIL pedagogical approach in lower secondary education was continuously monitored in terms of some psychological aspects. The information obtained from learners in the form of free and bound answers provided us with an insight into the issues addressed, which can be transformed into relevant recommendations.

Learners were also able to comment in a questionnaire distributed at the end of the 2017/2018 school year on their relationship to foreign language teaching and CLIL lessons, and to assess the extent to which CLIL's pedagogical approach contributed to improving their language competence.

We state that the learners perceived the CLIL lessons positively, the vast majority did not find them demanding. Almost half of the learners (41% of learners) considered them completely understandable. At the same time, we can state that there was no big difference between boys and girls. The popularity of a given CLIL subject also depended on the complexity of the subject. It was confirmed that the integration of a foreign language into subjects has its justification in the teaching process. A foreign language is becoming a working language and thus they have the opportunity to gradually prepare for the labour market, where every year, the need for experts with excellent communicative language competence increases, even in professional language.

It can be concluded that **both research hypotheses were verified** even though CLIL teachers in some cases struggled to keep the required quality of their lessons.

Primary schools and especially CLIL teachers had to deal with many problems during the experimental verification. Therefore, it is necessary to further develop and research the issue of the CLIL pedagogical approach.

In this sense, we consider it necessary to:

- look for ways of effective and quality training of teachers,
- create methodological materials for teachers that are in line with the State Education Program,
- implement other research projects focused on the CLIL pedagogical approach.

Conclusions

Although the sample of learners was not sufficiently representative and the test results could not be generalised to the whole population, experimental verification confirmed that:

- learners learn a foreign language in natural and communicative situations, i.e. they do not use the language in artificially induced situations,
- learners do not focus primarily on the language itself, but on the content they want to communicate about, which they learn,
- a foreign language (like the mother tongue) becomes an integral part of the learning process.

A properly organised and applied CLIL pedagogical approach is usually very motivating for learners.

5.2 Recommendations

Based on the qualitative analysis of data from pedagogical research carried out in the field of integrated language and subject teaching, we can conclude that the research results contributed to the following conclusion: CLIL teaching is effective for schools and all participants and is beneficial when the school prepares for its implementation conditions. For this reason:

1. We recommend that the school management take the following steps before introducing teaching with CLIL:

- provide qualified staffing (CLIL teachers); when choosing a CLIL teacher, emphasise not only his/her expertise in his/her subject and a foreign language, but also a sufficient level of communication language;
- create a space for planning CLIL lessons within the school and cooperation between CLIL teachers and school management;
- Incorporate CLIL lessons into the school curriculum;
- create conditions for teaching with CLIL;
- to support the professional development of CLIL teachers both linguistically and professionally;

2. We recommend that school management place emphasis on its expertise when selecting a CLIL teacher. We consider it important for a CLIL teacher to be able to provide a CLIL lesson so that learners are not only motivated to learn the subject but also a foreign language. For this reason, a CLIL teacher should be able to:

- appropriately select the subject, topics where it will use the CLIL pedagogical approach (for example, according to the difficulty, number of hours);
- define its language level in the target language in relation to the Common European Framework of Reference for Languages and should be motivated to further its education and improve its language skills;
- qualitatively assess their pedagogical and professional competences and should be motivated to further their education and improve their pedagogical and professional competences;
- develop their own personal development plan and further improve their skills;
- incorporate CLIL teaching into the school curriculum;
- explore possibilities for cooperation with other teachers or with school management and in particular with collaborators who are directly involved in the teaching process with a CLIL pedagogical approach;
- adequately choose a suitable subject, a suitable topic from the state educational program with regard to language intensity, practical applicability;
- adequately formulate the goals of the lesson - language and subject goals;

- correctly select and plan the CLIL lesson methodologies in order to be able to identify the common social, socio-cultural, personal and professional needs of learners and strategies that take into account key competences;
- prepare appropriate language support (language structures) so that learners can communicate independently with each other in order to improve their target language;
- find a balance between general and professional vocabulary, between key and passive vocabulary and implement strategies for acquiring new and key vocabulary;
- develop different strategies for learners to listen to and read professional texts appropriate to the age and language level of the learners;
- to develop oral interaction in learners, as well as independent oral expression and writing, taking into account the language level of learners.

We assume that universities and colleges would also contribute to the quality of CLIL teaching by training future CLIL teachers. The CLIL teacher should not only have pedagogical and professional competencies in his/her subject, he/she should master the target language at an appropriate level. Not only is the command of the target language important, but CLIL teachers should also master the methodology of teaching a foreign language.

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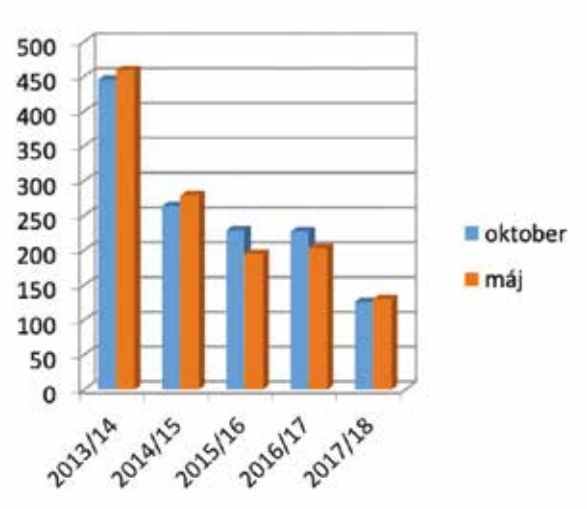
Annex 1: List of primary schools involved in experimental verification

1. Súkromná základná škola, Oravská cesta 11, Žilina
2. Základná škola, Hradná 22, Nové Zámky
3. Evanjelická základná škola, M. R. Štefánika 17, Martin
4. Základná škola Slobodného slovenského vysielača, Skuteckého 8, Banská Bystrica
5. Základná škola s materskou školou, Za Kasárňou 2, Bratislava
6. Súkromná základná škola, Starozagorská 8, Košice
7. Základná škola, Hlboká cesta 4, Bratislava
8. Základná škola, Ul. P. Križku 392/9, Kremnica
9. Základná škola, Nábrežie mládeže 5, Nitra
10. Základná škola, Hrnčiarska 2119/1, Zvolen
11. Základná škola Alexandra Vagača, Štúrova 12, Detva
12. Základná škola, Odborárska 2, Bratislava
13. Základná škola, Martinská 20, Žilina
14. Spojená katolícka škola. Farská 19, Nitra

Annex 2: Number of tested learners within individual school years in English



Annex 3: Questionnaire for foreign language teachers

Experimental CLIL verification 2013/2014

Primary school: ....
Year: fifth / experimental class
Date: ....

Name of teacher (s) English / German (delete as applicable)	
Number of children (please break down by class and girls and boys)	
From which year do children learn English / German?	
Textbook used:	

Brief evaluation of students' work in foreign language lessons (in experimental classes):

Where you see problems (please give 3 specific examples)	
Does the use of CLIL methodology have an impact on students' work in foreign language lessons (please give 3 specific examples)?	
Does the use of the CLIL methodology have an impact on working with gifted children (please also indicate the number of gifted children)?	
Does the use of the CLIL methodology have an impact on working with children with special needs (please also indicate the number of children with special needs)?	
Other (children's opinion on teaching with CLIL methodology)	

Annex 4: Questionnaire for subject teachers

Experimental verification of CLIL 2013/2014
Primary school: ..... Grade: 5th
Date: .....

Name of teacher	
Subject	

Brief evaluation of students' work in classes with CLIL methodology:

Where do you see problems when using the CLIL methodology? (please give 3 specific examples)	
How do you rate lessons with the CLIL methodology? (please give 3 specific examples)	
How do you evaluate the work of learners in lessons with CLIL methodology? (please give 3 specific examples)	
If you have gifted children in the experimental classroom, how does the use of CLIL methodology affect their work? (please give 3 specific examples)	
If you have children with special needs in the experimental classroom, how does the use of CLIL methodology affect their work in class? (please give 3 specific examples)	
Other (children's opinion on teaching with CLIL methodology)	

Annex 5: Questionnaire for coordinators

Experimental verification of CLIL

2013/2014

Primary school: .....

Name :.....

Date: .....

Do you organise regular meetings with subject teachers (who teach using CLIL methodology in an experimental classroom) and with foreign language teachers? If yes, how often?	
What is the form of cooperation at your school between foreign language teachers and subject teachers (who teach using CLIL methodology in an experimental classroom)?	
How you organise experimental verification at your school. Briefly write how it is done, e.g. It is taught by a subject teacher who speaks a foreign language. It is taught by a teacher who does not speak a foreign language, but works closely with a foreign language teacher ..., or a foreign language teacher goes to classes, ...	
Do teachers who teach with the CLIL methodology also participate in education? If so, indicate the specific training.	
How do you rate experimental verification at your school? Please write 3 specific examples.	
What do you see as the problems in coordinating the experimental verification project?	
How do children and parents perceive the use of a foreign language in non-language subjects?	
Other	

Annex 6: Questionnaire for learners

QUESTIONNAIRE
FOR PUPILS INVOLVED IN EXPERIMENTAL VERIFICATION OF CLIL
IN THE FRAMEWORK OF THE NIE PROJECT

Dear learner,
we would like to know your opinion on lessons where you learned not only in Slovak, but also in English or German (fo example in mathematics, history, geography lessons ...). In the questionnaire, we call them CLIL hours. Your answers ar very important to us. By filling out the questionnaire, you will help us find out whether this form of language learning i beneficial for students.
Thanks for cooperation

Please fill in the information about yourself.
Basic data
Name: .....
School: .....
City:.....
Grade:.....
Foreign language I studied: English / German *delete as applicable
Subjects where I also studied in a foreign language:.....
Boy / girldelete as applicable***

To what extent do you agree with the following statements about studying a foreign language?
Make a cross in only one box on each line.

	I completely agree	I partially agree	I partially disagree	I completely disagree
I enjoy learning a foreign language.				
I wish I didn't have to learn a foreign language.				
English / German language is boring.				
I like English / German language.				
I like to speak English / German in class.				
I like to write in English / German in class.				
I like to read in English / German in class.				
I like to listen to various recordings in English / German in class.				
I like to play various games in English / German in foreign language lessons.				
Foreign language (English / German) is one of my favourite subjects.				

To what extent do you agree with the following statements about learning a foreign language in CLIL classes?
Make a cross in only one box on each line.

	I completely agree	*I partially agree*	*I partially disagree*	*I completely disagree*
I liked to learn CLIL subjects.				
I really liked CLIL lessons.				
Using two languages (Slovak and foreign language) in CLIL classes was easy for me.				
I can also explain some of the things we learned in CLIL classes in a foreign language (English / German).				
I can explain the things we learned in CLIL classes only in Slovak.				
CLIL lessons helped me learn a foreign language.				
I liked to write in CLIL class in English / German.				
I liked to watch videos or listen to recordings in English / German in CLIL classes.				
In CLIL classes, I learned how things work in the world.				
In CLIL classes, I often spoke to my classmate/s in English / German.				
We often translated (e.g. texts) in CLIL classes.				
In CLIL classes, I often solved tasks on my own.				
We often read English / German texts in CLIL classes.				
At CLIL classes, we had a lot of worksheets in English / German.				
I understood everything we did in CLIL classes.				
I had to learn a lot at home for CLIL classes.				
My parents helped me when I didn't understand something we were learning in CLIL classes.				

To what extent do you agree with the following statements about your CLIL classes?
Make a cross in only one box on each line.

	I completely agree	*I partially agree*	*I partially disagree*	*I completely disagree*
It was easy to understand our teacher when he/she spoke English / German in CLIL classes.				
I knew what our teacher expected from me in CLIL classes.				
Our teacher gave me interesting assignments in CLIL classes.				
Our teacher did various things to help us improve in English / German.				

Please write at least 5 sentences for each question.

1. *Describe what you liked most about CLIL lessons and why.*

.....
.....
.....
.....
.....
.....
.....

2. *What did you not like about CLIL lessons? What would you recommend to improve?*

.....
.....
.....
.....
.....
.....
.....
.....

Thank you for completing the questionnaire.

Annex 7: Observation in lessons with CLIL (Observation sheet)

Grade, class: **Teacher:**

Number of learners in the class:

SUBJECT: **language (English or German):**

Theme of the lesson:

Goal of the lesson:

	Give examples
Goals of the lesson	
Were students informed about the goals at the beginning of the lesson? How?	
Did the teacher verify the achievement of goals at the end of the lesson? How?	
Have the goals of the lesson been achieved? On what basis can it be judged?	
Did the teacher provide students with feedback on the achievement of the lesson's goals? How?	
Integration of language	
How is the language goal set?	
How is the language integrated into the lesson?[1]	
Do students receive language support? Give specific examples.	
What communicative language activities do students practice in the English / German part of the lesson?	
Proportion of use of Slovak and English / German language in percentage:	

	Give examples
Entering instructions	
Does the teacher enter all instructions in the English / German part of the lesson in the given language, does he/she translate them into Slovak, or does he/she enter them in Slovak? Does he/she use intelligible language?	.
If necessary, can he/she paraphrase the instructions (in the target language)?	
Other:	
Classroom management	
To what extent can the teacher involve all students into the learning process?[2]	
Does the way students sit facilitate good classroom dynamics? How?[3]	
Other:	

Work methods	Give examples
Is the lesson student-oriented? [4]	
In what proportion are the different forms of work (individual, paired, group and frontal) in class?	
Do all students have enough opportunities to use the target language (structures) in pairs or groups?	
Do students have the opportunity to learn in class, or is it an exposition?	
Other:	
Homework assignment	
Did the teacher prepare learners for the task?	
Other:	

Please describe the course of the lesson

Time (from – to)	The course of the lesson - activities

Interview with the teacher after observing the lesson:

Teacher:

Name:

Qualification:

Language qualification:

1.Teacher's reflection on a taught CLIL lesson
Brief statement of the teacher about the learners' work in the class:
How satisfied are you with the learners' work in the class?
Brief statement of the teacher about the goals (subject, language), their fulfilment (non-fulfilment):

Do you think that you managed to achieve the subject and language goal? How did you try to verify that the goal was met?

What did you manage in class (what are you satisfied with) / what did you not manage to fulfil and why? If you did not manage to achieve everything in class - why?

Annex 8: Suggested questions for interviews

Suggested questions for the school principal (management):

1. Introduction

- Introduce yourself and state the purpose / goal of the interview
- Request written consent to record the interview and process the data.
- Could you describe how long you have been working at this school and what subjects you are teaching? What is your qualification, possibly teaching qualification? How long have you been in school management?

2. First experience with CLIL

• Did you have any experience with CLIL before starting the experimental verification?
• If yes:
- what?
- since when?
- in which subjects?
- what results?
- what reactions of teachers / students / parents?
- where did you get your expertise from?
- what teaching materials did you use?

3. Involvement in the experimental verification project

• With what expectations did you participate in the experimental verification project?
• Have these expectations been met?
• if so, which ones?
• if not, what do you see as the cause?
• How did you select the class in which you apply CLIL?
• What criteria did you apply when selecting the subject in which CLIL is used?
• Could you tell me everything you needed to do to ensure that the experimental verification project could be successfully completed in 5 years?
• In which subjects and grades did you use CLIL during the project?
• How would you characterise the necessary conditions that the school must ensure in order for CLIL to be used at school?
• What were you satisfied with during your experimental verification project? What do you see as the biggest benefits of this project?
• In what way were your expectations not met? What would you change in the future?
• How do you evaluate the organisation of the project?

4. Final evaluation

- Please describe how you perceive the introduction of CLIL into teaching in your school? Would you recommend this approach to other schools?
- How is CLIL perceived, based on your own experience, by:

(a) teachers involved in experimental validation
b) other teachers
c) parents
d) students?

- Based on your experience with CLIL, would you recommend a modification of the organisation of teaching (e.g. modules)?
- Do you plan to apply CLIL after the experimental verification? Why?
- Would you like to emphasise any aspect of experimental verification that we did not mention?
- What would you recommend to other school principals?

Thank you very much for your cooperation.

Suggested questions for a CLIL teacher

1. Introduction

- Introduce yourself and state the purpose / goal of the interview
- Request written consent to record the interview and process the data.
- Could you describe how long you have been working at this school and what subjects you are teaching? What is your qualification, possibly teaching qualification?

2. First experience with CLIL

- Did you have any experience with CLIL before starting the experimental verification?
- If yes:
  - what?
  - since when?
  - in which subjects?
  - what results?
  - what reactions of students / parents?
  - where did you get your expertise from?
  - what teaching materials did you use?

3. Involvement in the experimental verification project

- What led you to actively participate in the experimental verification project? What were your expectations.
- What were your first impressions of introducing CLIL into your experimental verification lessons?
- Have you noticed any significant changes that CLIL teaching has undergone during the experimental verification?
- organisation of teaching, or lesson;
- materials;
- activities;
- methods of work in classes,
- children's reactions to lessons and their motivation, etc.
- Compare your experience when you started with this approach and now.
- How did you proceed in preparing the lessons, from what sources did you draw, how did you practically incorporate CLIL into the lessons?
- What do you find most difficult when using CLIL in your lessons?
- What do you consider to be the easiest in using CLIL in your lessons?
- What was your experience with the parents of learners who were educated using CLIL?
- What forms of support do you have when teaching with CLIL?
- How would you describe the ideal CLIL lesson? What is needed to ensure that the lesson runs smoothly?
- What do you think should be the qualification requirements for a good CLIL teacher?
- What do you think a good CLIL teacher should be like?
- Do you plan to use CLIL after the experimental verification? Why?
- What do you see as the biggest benefits of this project?
- In what way were your expectations not met? What would you change in the future?
- How do you evaluate the organisational security of the project?
- What would you recommend to colleagues who are preparing to introduce CLIL in other schools?

4. Final evaluation

Please describe how you perceive the introduction of CLIL into teaching in your school? Would you recommend this approach to other schools?
How is CLIL perceived, based on your own experience, by:

(a) teachers involved in experimental verification
b) other teachers

c) parents
d) students?

- Based on your experience with CLIL, would you recommend a modification of the organisation of teaching (e.g. modules)?

Do you plan to apply CLIL after the experimental verification? Why?
Would you like to emphasise any aspect of experimental verification that we did not mention?

Thank you very much for your cooperation.

Annex 9: Final test in English language

A: Tom and a friend are talking about a sports afternoon. Based on the recording, decide what sport their friends did. Write a letter next to each person. There are two additional sports.

Example:

0 Tom .....D.....

PEOPLE		PRESENTS
1 Sam	.....	A basketball
2 Jane	.....	B football
3 Paul	.....	C golf
4 Susan	.....	D horse-riding
5 Anne	.....	E skiing
		F table-tennis
		G tennis

B: Listen to a conversation between Jenny and her friend Mark, who are talking about buying a computer game. Based on the recording, select the correct answer from the offered options A - C.

Example:

0 The name of the computer game is
A City 2010
B City 2001
C City 2100 Answer: A

---

6 The game is not good for people under
A eight.
B ten.
C twelve.

7 Black's PC shop is in
A Cambridge.
B London.
C Peterstown.

8 **The address of the shop is**

A 29 Hunter Road.
B 29 Walker Street.
C 29 Marsden Street.

9 **The last day you can get a free game is**

A Monday
B Thursday
C Friday

10 **The computer game cost**

A £26
B £30
C £48

C: Listen to an interview between an information office worker and a man who needs information about the train. Fill in the correct answer based on the recording.

TRAIN	
To:	Newcastle
Day of journey:	11 ....
Train leaves at:	12 .....
Return ticket costs:	13 £.....
Food on train:	14 Drinks and .....
Address of Travel Agency:	15 22 .... Street

Part 2: READING

A: Read the telephone conversation between two girlfriends and fill in the spaces 1 - 7 with missing sentences A - H. You will not need one of them.

Kim: Hi Anita, it's Kim calling.
Anita: Hi, how are you?
Kim: 1 _____ I wanted to ask what you are going to do at the weekend.
Anita: Well, I'm going to London. Would you like to come as well?
Kim: 2 _____ I guess you want to go on Saturday, not on Sunday.
Anita: Yes. I must study on Sunday. I'll be happy if you go with me. 3 _____
Kim: What do you want to do there?
Anita: First, I'd like to go shopping.
Kim: 4 _____ I need some books for school and a pair of shoes.
Anita: Oh, I can help you choose them. Is there anything else you want to do?
Kim: Yes, I'd like to go to a cinema afterwards.
Anita: 5 _____ It always has the newest films.
Kim: Fine. Do we need to book tickets?
Anita: 6 _____ But I'll phone and ask. I'm really looking forward to that. I know we'll have a good day.
Kim: Yes, definitely. 7 _____
Anita: See you.

A. I'd love to.
B. I'm not sure.
C. I'd like to buy a present.
D. Me, too.
E. Fine.
F. OK, there's a good one in Oxford Road.
G. See you on Saturday, then.
H. It'll be great fun.

B: Read an article about a student. Based on the text, decide whether sentences 8 - 15 are true (T) or false (F). If there is not enough information in the text to answer that the sentence is true (T) or false (F), select the option not listed in the text (NS).

TAKING A YEAR OUT

Eighteen-year-old Lauren is a student, but she isn't at university yet. When she finished her secondary school she decided to take a year off. "I decided not to start studying maths immediately, but I haven't given up the idea. I hope I'll begin my university studies next year. During my year off, I wanted to do some voluntary work in Africa. Now I'm here in Ghana for six months. I'm teaching English and maths to school children. I'm also helping to build the school library. I'm so surprised I can actually do all of this. I'm developing qualities I didn't know I had. I'm more patient and polite – and I'm certainly not lazy here! I think I'm growing up and learning to be responsible.

Another student, John, has finished his secondary school, but isn't studying at university. He wanted to spend a year working when he left school. It wasn't just because he needed money to pay for his university studies. He also wanted to gain some experience before he studies computer programming. Therefore, he was looking for jobs at IT companies. First he did a training course in programming. It took two months and helped him find a better job. Now he is working as a programmer in an IT company.

In Europe, taking a gap year is very common. This means that many learners do not go to university after they finish their secondary school, but they take a year off to travel, work, explore special interests or volunteer.

"Universities find that learners who made this choice are more confident and mature when they arrive and do better on their courses," says Dr. Edwin Chance, Rector of York University.

	True (T) / False (F) / Not stated (NS)
8 Lauren doesn't want to study at university.	T / F / NS
9 Lauren is helping Ghanaian children with their maths.	T / F / NS
10 Lauren's character is changing in Africa.	T / F / NS
11 John wants a career in IT after university.	T / F / NS
12 John training course was three months long.	T / F / NS
13 John's training course was expensive.	T / F / NS
14 Lots of young people are doing a similar thing to Lauren and Eve.	T / F / NS
15 When learners take a gap year, it's not good for their studies.	T / F / NS

Part 3: VOCABULARY

A: Read the postcard and add the missing words to the text. You won't need one of them.

places	swim	mountains	sea	pity	days

Dear Jane,
I'm sitting on the beach at the moment. Soon, I'm going to have a 1_____ . I arrived here three 2_____ ago with my family. We will be on holiday together here for two weeks. It is a beautiful place. The beach is very near the hotel. The sea isn't cold and there are many interesting 3_____ to visit. Yesterday we walked to a village in the 4_____. I took lots of photographs. It's a 5_____ that you didn't come with us.

Love,
Peter

B: Read descriptions of some jobs. Write down what kind of job it is. The first letter is given and the number of other letters is indicated.

Example:

0 I help people to learn things.	T _ _ _ _ _ Answer: teacher
6 I show customers the menu and bring them their food.	w _ _ _ _
7 People come to my shop to buy medicine.	c _ _ _ _ _
8 I will repair your car for you.	m _ _ _ _ _ _
9 If you want to change the colour of your room, I will do it for you.	p _ _ _ _ _
10 I help doctors take care of sick people in hospitals.	n _ _ _

C: A notebook consists of several basic parts. Name the marked parts.

Example: oo camera

11 _____

12 _____

13_____

Read the sentences and decide if they are true (T) or false (F). Circle the correct answer.

14 Not every laptop has a battery. T / F

15 You can use a computer to browse the Web. T / F

Part 4: WRITING

Susan in Britain would like to know more about the place where you live. Write an email to Susan and answer the questions.

From: Susan

To:

Hi,

Thank you very much for your last email. You mentioned that you like the place where you live. Could you tell me more about it? What do you like about the place? And how do you spend your free time there? Can you play any sports or do some other activities?

Looking forward to your answer.

Susan

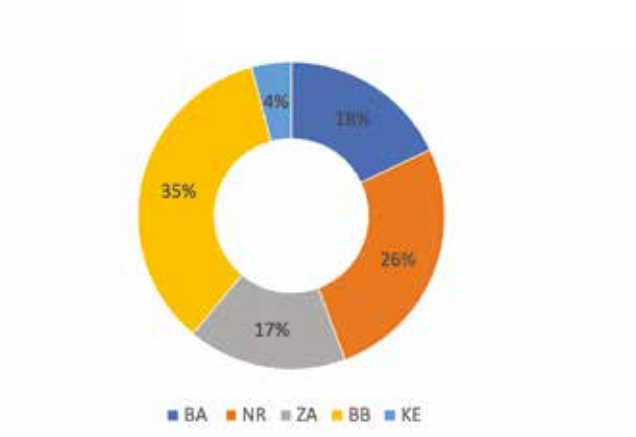
From: Alex

To: Susan

Annex 10: Representation by region, founder and sex

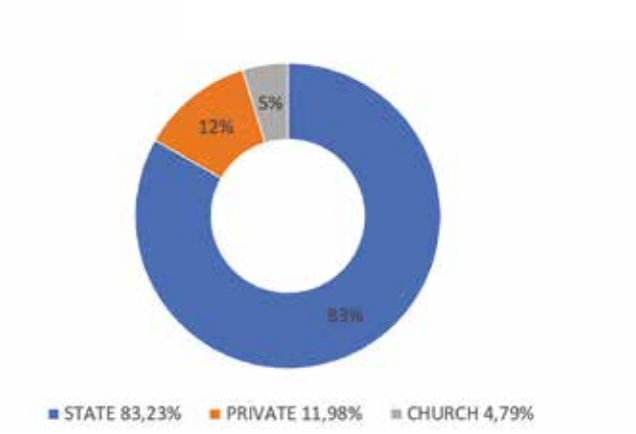
REGION

BA	17,96%
NR	26,35%
ZA	16,77%
BB	34,73%
KE	4,19%



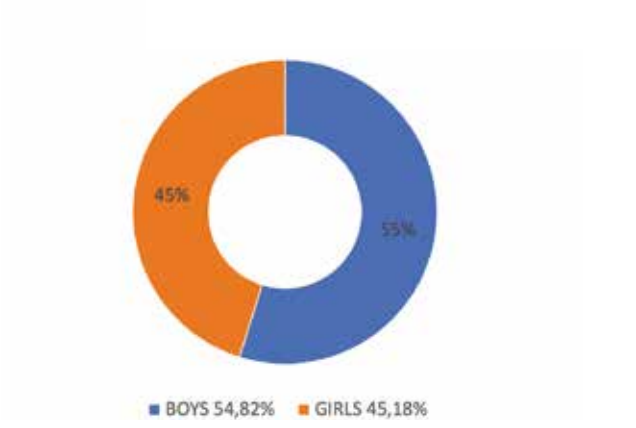
FOUNDER

STATE	83,23%
PRIVATE	11,98%
CHURCH	4,79%

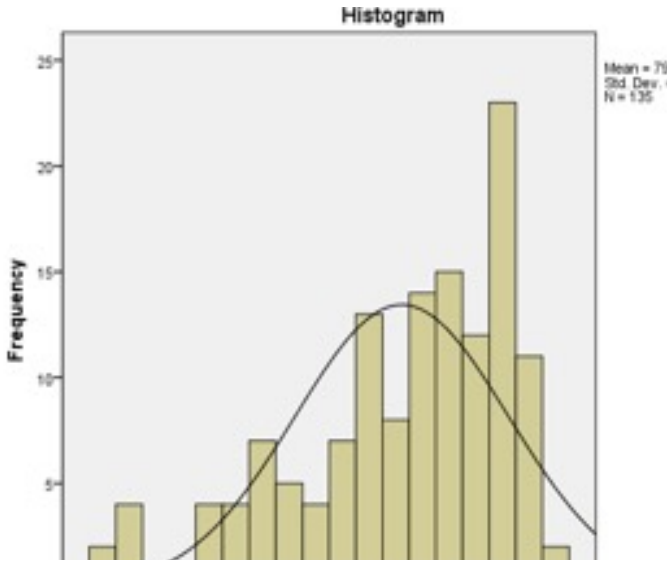


SEX

BOYS	54,82%
GIRLS	45,18%



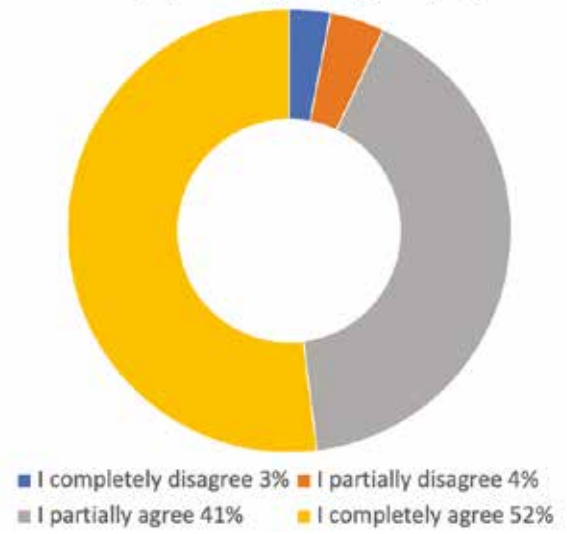
Annex 11: Histogram on the distribution of abundance in proficiency in a foreign language.



Annex 12: Representation of answers in individual items

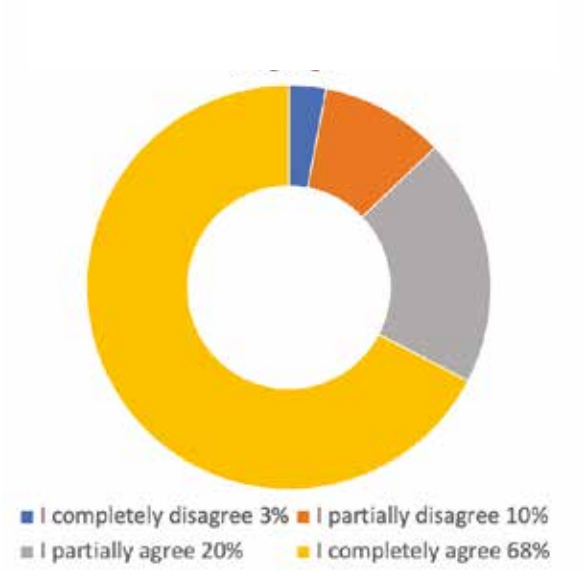
1. I enjoy learning a foreign language.

I completely disagree	3%
I partially disagree	4%
I partially agree	41%
I completely agree	52%



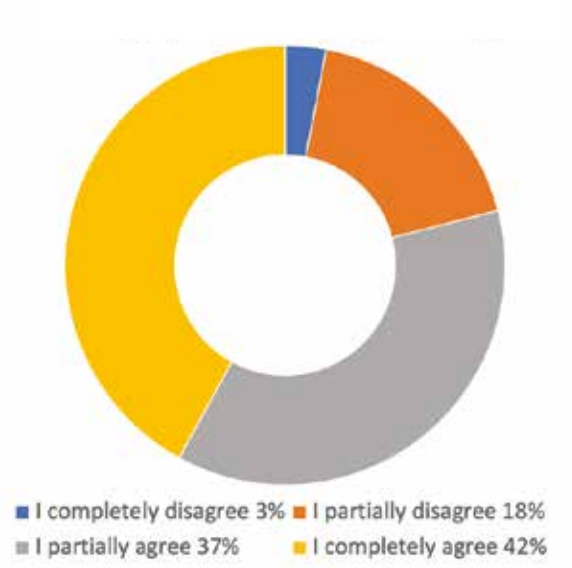
2. I wish I did not have to learn a foreign language.

I completely disagree	3%
I partially disagree	10%
I partially agree	20%
I completely agree	68%



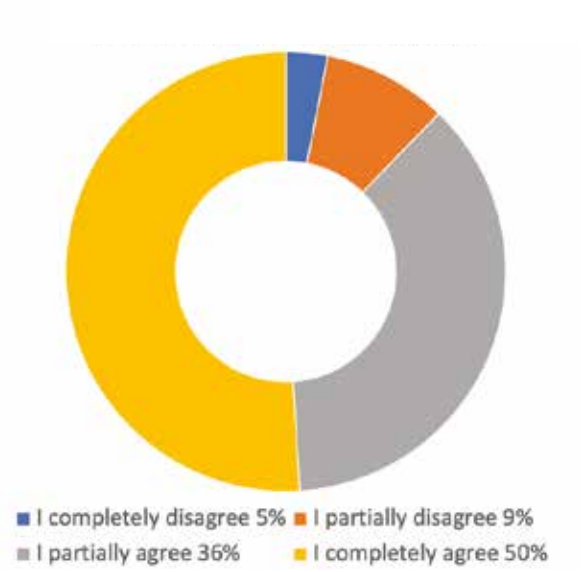
3. English/German language is boring.

I completely disagree	3%
I partially disagree	18%
I partially agree	37%
I completely agree	42%



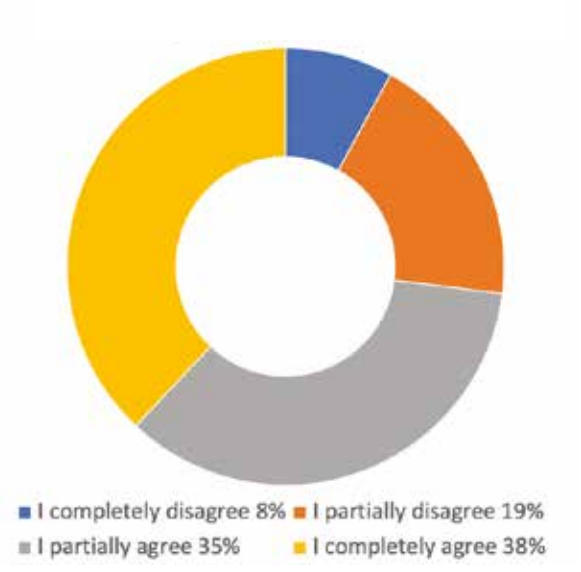
4. I like English / German language.

I completely disagree	5%
I partially disagree	9%
I partially agree	36%
I completely agree	50%



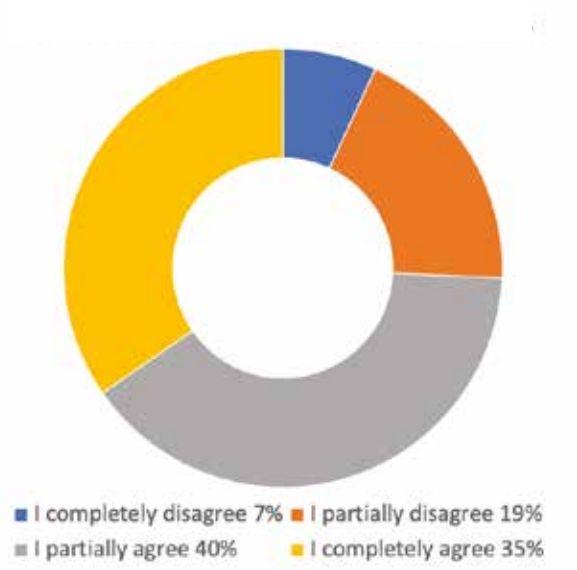
5. I like to speak English / German in class.

I completely disagree	8%
I partially disagree	19%
I partially agree	35%
I completely agree	38%



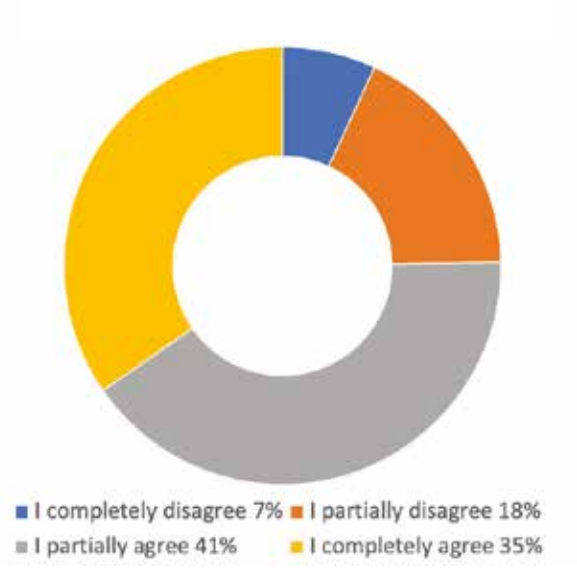
6. I like to write in English / German lessons.

I completely disagree	7%
I partially disagree	19%
I partially agree	40%
I completely agree	35%



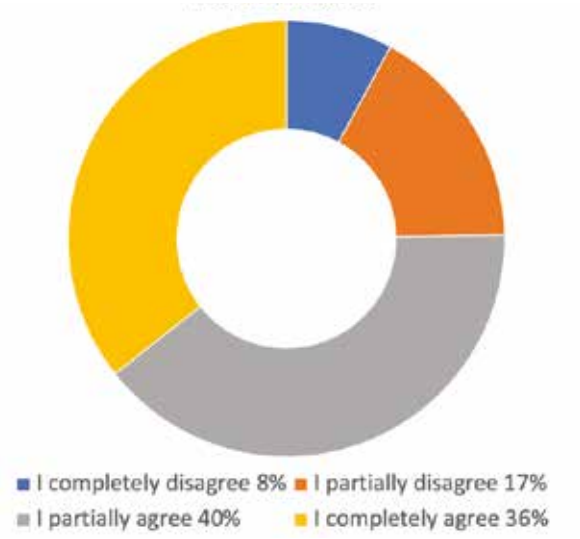
7. I like to read in English / German lessons.

I completely disagree 7%
I partially disagree 18%
I partially agree 41%
I completely agree 35%



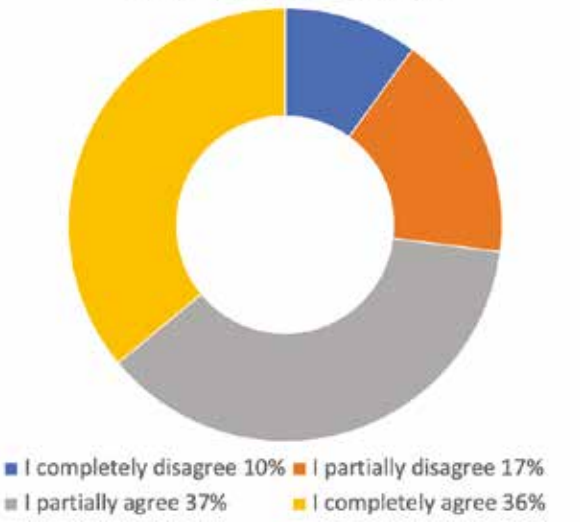
8. I like to listen to various recordings in English / German in class..

I completely disagree	8%
I partially disagree	17%
I partially agree	40%
I completely agree	36%

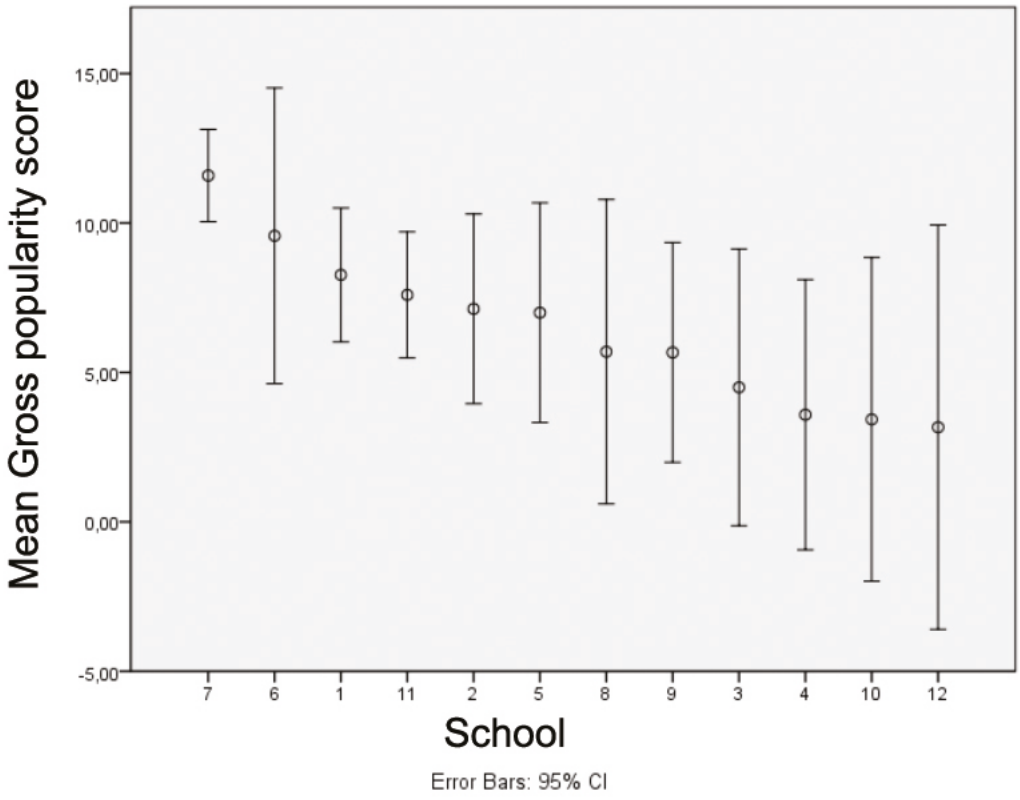


9. The foreign language (English / German) is one of my favourite subjects.

I completely disagree 10%
I partially disagree 17%
I partially agree 37%
I completely agree 36%



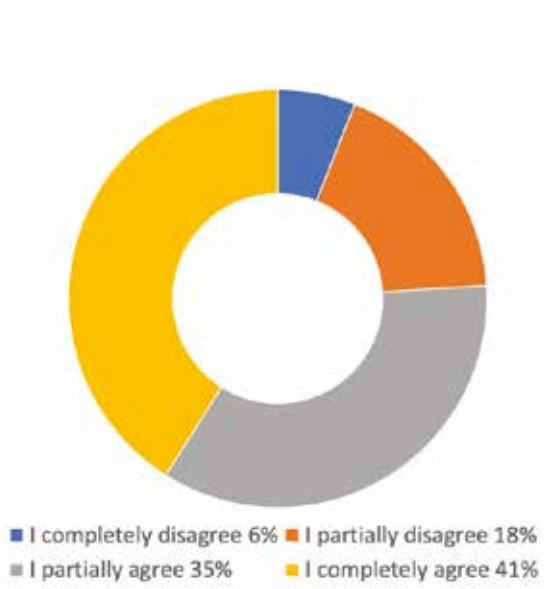
Annex 13: Popularity difference by gender



Annex 14: Representation of answers in individual items

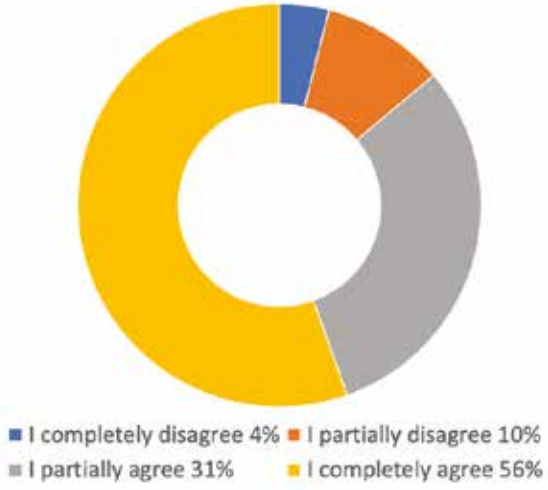
10. I understood everything we did in CLIL lessons.

I completely disagree	6%
I partially disagree	18%
I partially agree	35%
I completely agree	41%



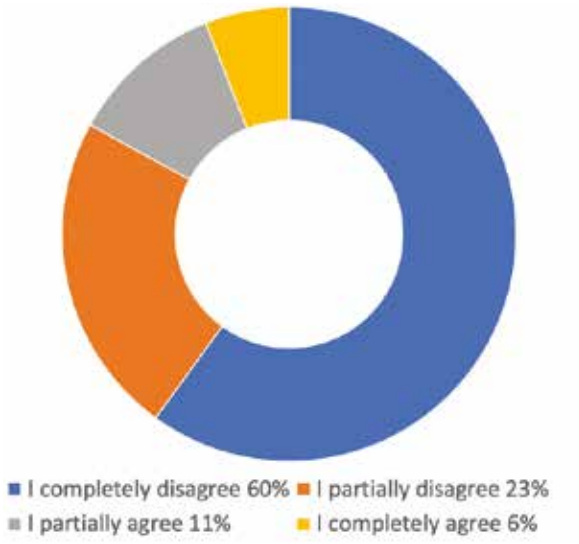
11. It was easy to understand our teacher(s) when he/she spoke English / German in the CLIL lesson."

I completely disagree	4%
I partially disagree	10%
I partially agree	31%
I completely agree	56%



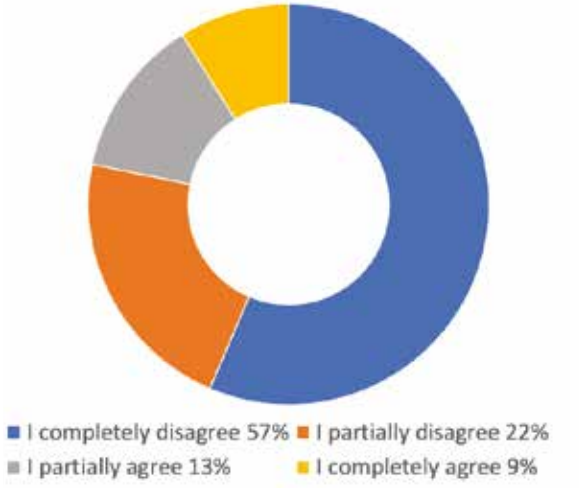
12. I had to study a lot at home for CLIL lessons.

I completely disagree	60%
I partially disagree	23%
I partially agree	11%
I completely agree	6%



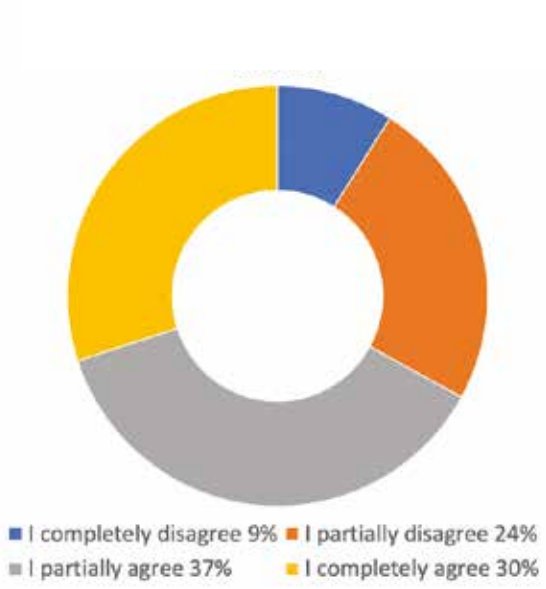
13. My parents helped me when I didn't understand something we were doing in the CLIL lesson."

I completely disagree	57%
I partially disagree	22%
I partially agree	13%
I completely agree	9%



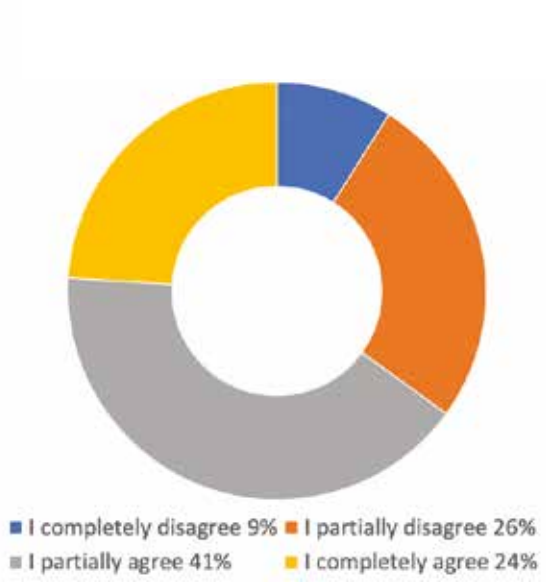
14. We often translated (e.g. texts) in CLIL lessons.

I completely disagree	9%
I partially disagree	24%
I partially agree	37%
I completely agree	30%



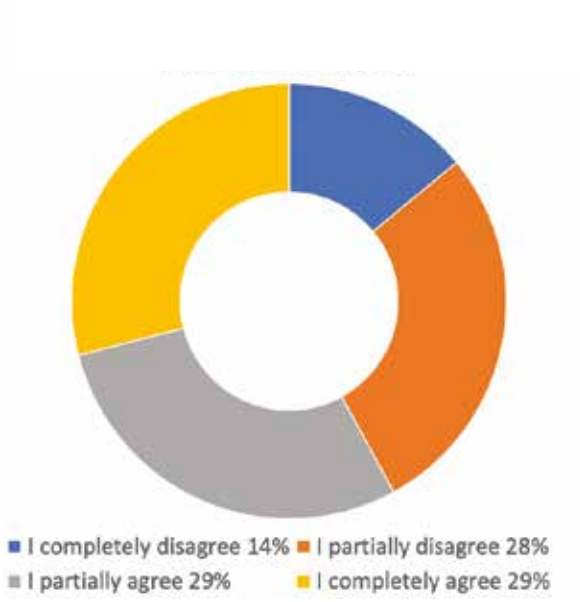
15. In CLIL lessons, I often solved the tasks myself.

I completely disagree	9%
I partially disagree	26%
I partially agree	41%
I completely agree	24%

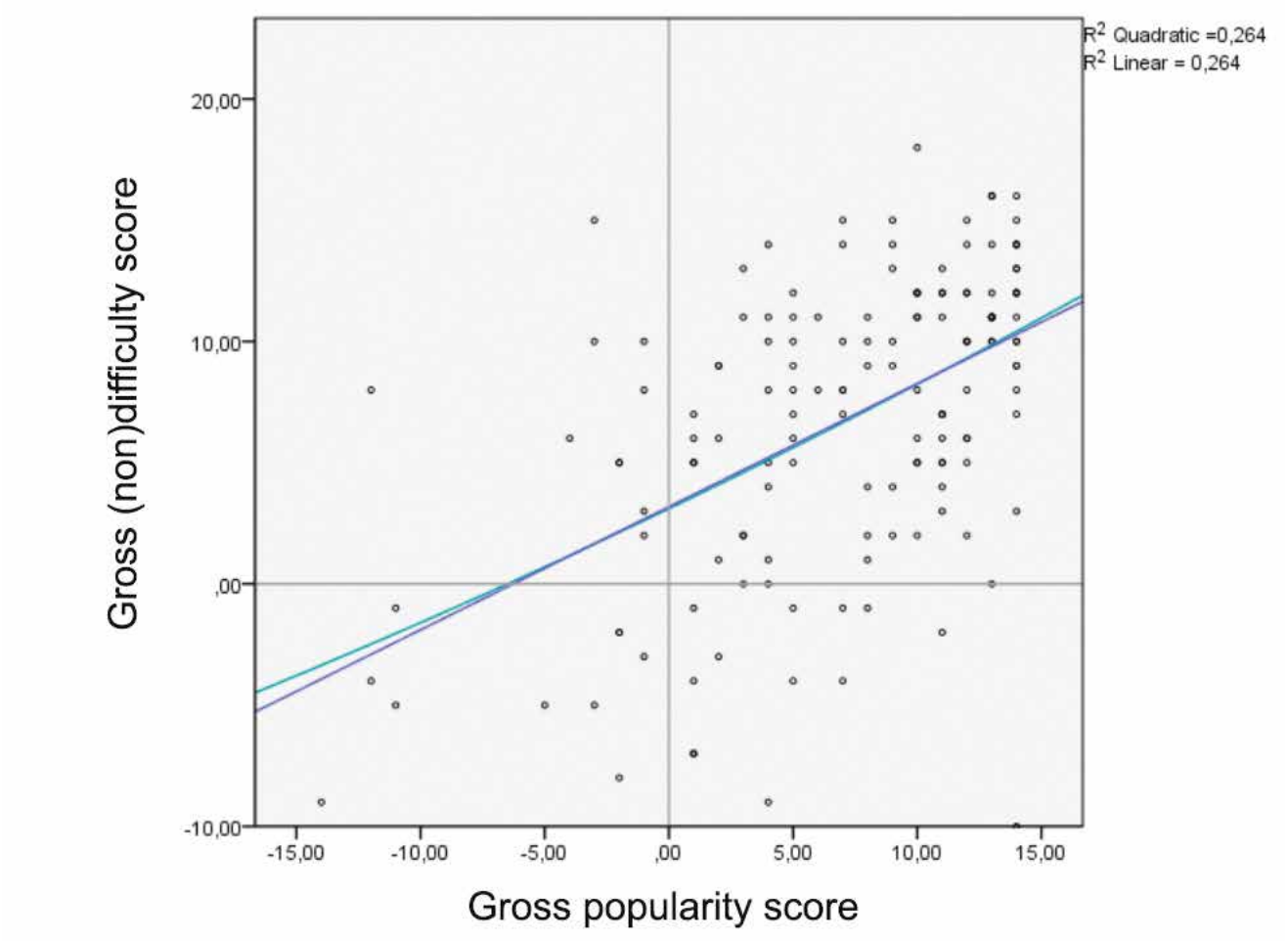


16. I can explain the things we learned in CLIL lessons only in Slovak.

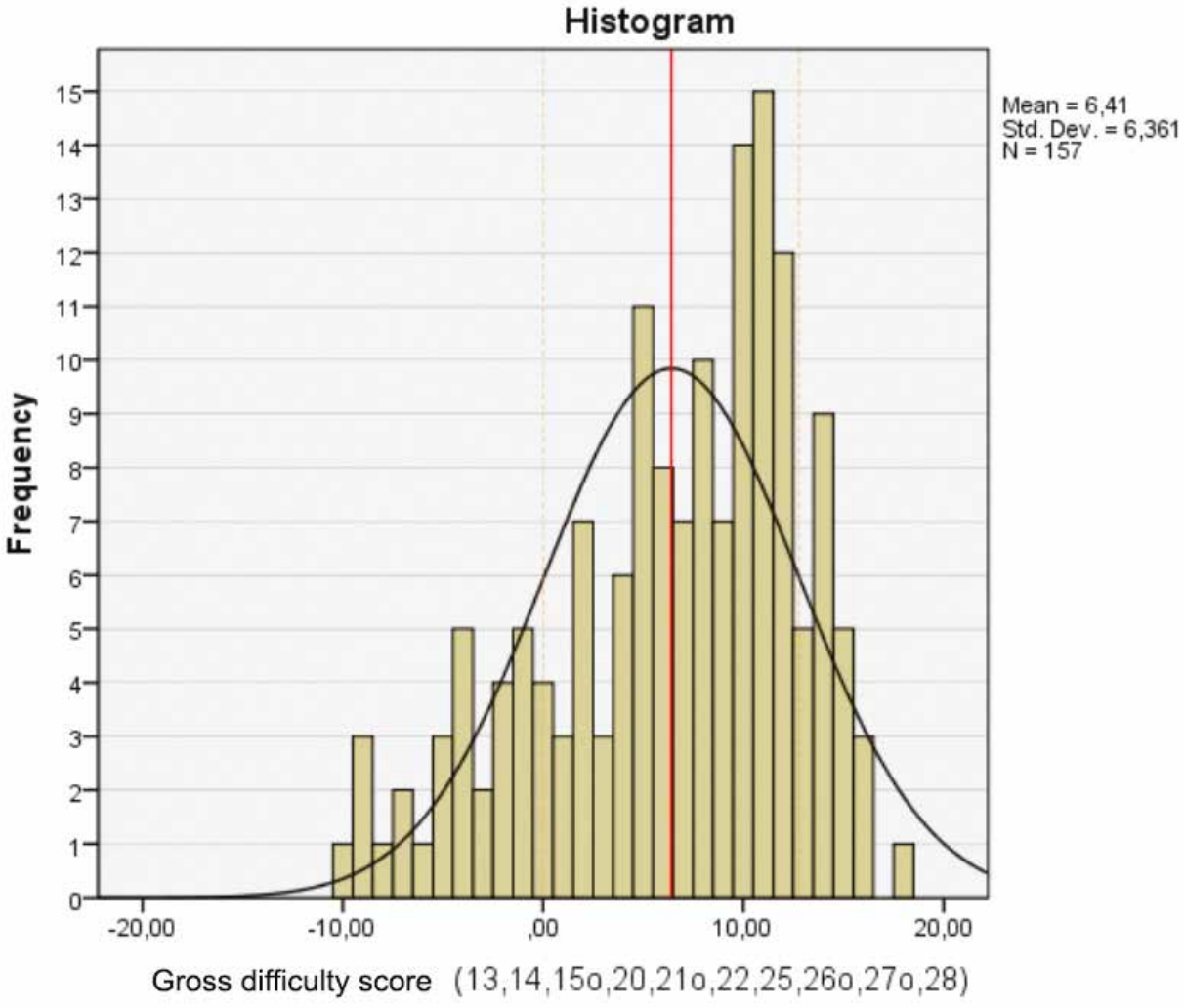
I completely disagree	14%
I partially disagree	28%
I partially agree	29%
I completely agree	29%



Annex 15: The relationship between the popularity and difficulty of foreign language teaching and CLIL



Annex 16: Correlation between interest in and difficulty of teaching a foreign language and a teaching approach



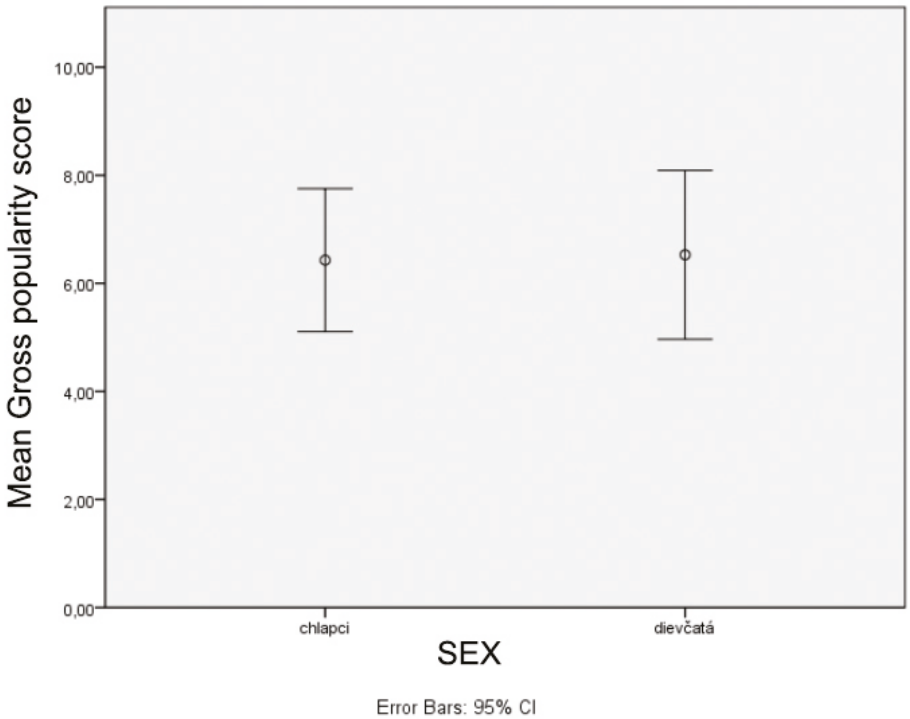
Annex 17: Difficulty by sex

Group Statistics

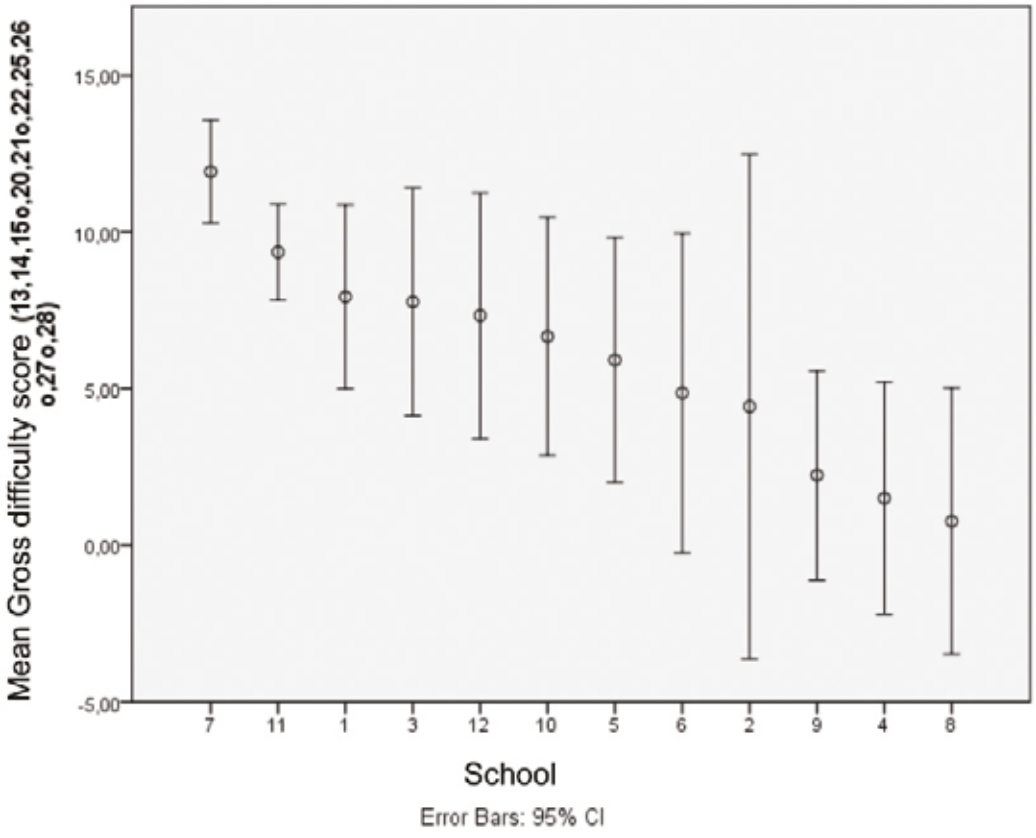
	Sex	N	Mean	Std. Deviation	Std. Error Mean
Gross difficulty score (13,14,15o,20,21o,22,25,26o,27o,28)	boys	84	6,4286	6.09026	.66450
	girls	72	6,5278	6.65439	.78423

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
			e.g.		f	e.g. (2-tailed)	ean Difference	td. Error Difference	ower	pper
Gross difficulty score (13,14,15o,20,21o,22,25,26o,27o,28)	Equal variances assumed	353	553	,097	54	923	,09921	,02089	2,116	,918
	Equal variances not assumed			,097	45,4	923	,09921	,02790	2,131	,932



Annex 18: Difficulty by school



Annex 19: Average values of (non) difficulty according to general education subjects taught through CLIL and distribution of the gross difficulty score

Subject	N valid	N missing	Mean	Std. Dev.
Mat	50	6	8.18	6.17
Phys	22	3	6.95	5.77
Che	15	2	7.07	3.63
Bio	62	5	6.44	6.90
Geo	89	6	8.55	5.42
Inf	17	2	10.71	4.38
Dej	55	2	7.31	5.82
On	32	1	7.16	6.81
Enab	4	0		
Hv	8	0		
Vv	15	1	12,07	3,15

CLIL in Slovakia

Content and Language Integrated Learning in Slovakia

Authors:
Dipl.- Ing. Beata Menzlová
prof. PaedDr. Silvia Pokrivčáková, PhD.
PhDr. Eva Farkašová, CSc.
PaedDr. Danica Gondová, PhD.

Reviewers:
prof. Zuzana Straková, PhD.
PaedDr. Rastislav Metruk, Ph.D.
Mgr. Michaela Sepešiová, PhD.

Translation:
prof. PhD. Anton Pokrivčák, PhD.

Proofreading:
Phil Le Mottee

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Mgr. Juraj Ulický

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