Katarzyna Papaja
University of Silesia in Katowice, Poland
Marzena Wysocka-Narewska
University of Silesia in Katowice, Poland

https://orcid.org/0000-0003-2808-443X

https://orcid.org/0000-0003-2787-8676

Investigating Code-switching in a Content and Language Integrated Learning (CLIL) Classroom

Abstract

The aim of this article is to provide an outline of the research on code-switching in CLIL, including the use of mother tongue vs. target language by CLIL teachers, as well as teacher perception of CLIL learners' language use and language problems, attention being given to spoken and written discourse difficulties and ways of overcoming them. The study was conducted among 29 Secondary School CLIL teachers teaching geography, biology, mathematics, chemistry, physics, or history in English, and was based on a questionnaire especially prepared for this study. The main aim of the study was to investigate the situations of switching the codes and reasons for particular linguistic behaviours in CLIL classrooms, especially through the prism of teacher and learner code-switching functions, and find out both positive and negative aspects of this phenomenon.

Keywords: code-switching, CLIL, CLIL teachers, CLIL learners

Switching between languages (the target language) and the native language in the FL learning classroom is a common practice when the learners' proficiency in a given FL is incomplete, and the teacher feels it necessary to use the first language in order to make his or her learners understand certain concepts. Even though the term Content and Language Integrated Learning (CLIL) may create an image that all instructions in a given course should take place in the target language, it is not true as CLIL learners often face many challenges with acquiring content-specific terminology and there is a need to translate certain concepts into their native language.

Code-switching: Definitions and Types

Classroom code-switching most often refers to the alternating use of more than one linguistic codes by any of the classroom participants for many different reasons and purposes. According to Grosjean (2010, p. 51), code-switching is "the alternate use of two languages, that is, the speaker makes a complete shift to another language for a word, phrase, sentence and then reverts back to the base language."

Poplack (1980) distinguishes three types of code-switching:

- Inter-sentential switching (a whole sentence, or more than one sentence, is produced in one language before there is a switch to another one. It is usually done at sentence boundaries).
- Intra-sentential switching (consists of a switch within the same sentence or sentence fragment. The shift is done in the middle of a sentence, with no interruptions, hesitations, or pauses to indicate a shift. Different types of switches occur within the clause level and the word level. The speaker is usually unaware of switching).
- Extra-sentential or tag-switching (the switching of either a single word or a tag phrase (or both) from one language to another. This type is common in intra-sentential switches. It involves the insertion of a tag from one language into an utterance in another language).

The very forms of switches vary, still, each of them reflects a "verbal skill requiring a large degree of linguistic competence in more than one language, rather than a defect arising from insufficient knowledge of one or the other" (Poplack, 1980, p. 240).

Language deficits, on the other hand, give rise to the unintentional switching, stemming from communicative pressures and/or temporary inaccessibility of elements of the currently used language, and may be regarded as a manifestation of interference. Unintentional code-switching, according to Poulisse (1999), is common with less fluent and less balanced bilinguals (including language learners in particular). However, even balanced bilinguals may be unfamiliar or less familiar with the vocabulary of certain specific registers, exceptions in grammar and/or phonology in general in either of their languages.

Functions of Code-switching

Language switching processing serves a few functions, which may be beneficial in language learning environments from teachers' and learners' perspective.

Teacher Functions

According to Mattsson and Burenhult-Mattsson (1999, p. 61), the teacher functions involve:
- topic switch,
- affective functions,
- repetitive functions.

In *topic switch* cases, teachers alter their language according to the topic that is under discussion. This type of switching is mostly observed in grammar instruction, namely, when teachers shift language to students' mother tongue in dealing with particular grammar points taught at that moment. The students' attention is directed to the new knowledge by making use of code-switching and, accordingly, making use of the native tongue. In such a situation, by code-switching, teachers construct a bridge from the known (native language) to the unknown (new foreign language content) in order to transfer the new content and meaning (Sert, 2005). In other words, this is just exploiting students' previous L1 learning experience to increase their understanding of L2.

Affective functions serve the purpose of expressing emotions. For example, code-switching is used by the teacher to build solidarity and intimate relations with the students or to create a supportive language environment in the classroom. Modupeola (2013) claims that code-switching helps learners to enjoy their learning due to their ability to comprehend the teachers' input. Understanding what is being said constitutes psychological support for the learners, allows them to feel less stressful and anxious, and makes TL more comfortable for them. At that state, learners can focus and take part in classroom activities in a more successful way.

Finally, a *repetitive function* of code-switching allows the teacher to use code-switching in order to transfer the necessary knowledge in further clarity. Following the instruction in the target language, the teacher code switches to the native language, clarifying meaning for efficient comprehension.

Learner Functions

When it comes to students and functions of their language shift, Eldridge (1996, pp. 305–307) enumerates:
• equivalence,
• floor-holding,
• reiteration,
• conflict control.

As far as the function of *equivalence* is concerned, the student makes use of the native equivalent of a particular lexical item in the target language, and code switches to the native tongue. In other words, the student uses the native lexical item when he or she does not have the competence for using the target language equivalent for a particular lexical item. Therefore, *equivalence* functions as a defensive mechanism for students as it gives them the opportunity to continue communication by bridging the gaps resulting from foreign language incompetence.

Floor-holding consists of conducting a conversation in the target language and filling in the gaps with the native language use, as a mechanism to avoid deficiency in communication. Code-switching deriving from the need to hold the floor indicates the lack of fluency in the target language or inability to recall the appropriate target language structure or lexicon.

Reiteration is a situation where "messages are reinforced, emphasized, or clarified where the message has already been transmitted in one code, but not understood" (Eldridge, 1996, p. 306). In this case, the student repeats the message in the native tongue, either because he or she may not have transferred the meaning exactly in the target language or because simply it is more appropriate to code switch in order to indicate the teacher that the content is clearly understood.

The last function, namely *conflict control*, involves using code-switching in order to avoid misunderstanding. It is a strategy to transfer the intended meaning whenever there is a lack of some culturally equivalent lexis among the native language and the target language.

Content and Language Integrated Learning

Content and Language Integrated Learning (CLIL) is a common term for a number of similar approaches in Europe to teach content subjects through a foreign language. Other terms used are *Bilingual Content Teaching*, *Bilingual Subject Teaching*, or *Content-based Language Teaching* (Wolff, 2003, p. 211).

The term CLIL is now the most commonly used and "it is based on the assumption that foreign languages are best learnt by focusing in the classroom not so much on language but on the content which is transmitted through language. The novelty of this approach is that classroom "content is not so much taken from everyday life but rather from content subjects e.g. mathematics, biology, geography, etc." (Wolff, 2003, pp. 211–222).

The term CLIL may create an image that all instruction in a given course should take place in the target language. A key development issue relates to how the use of different languages can be manipulated within the classroom. According to Wolff (2005, p. 18), "CLIL lessons should not be monolingual. The use of L1 during the CLIL lessons may help CLIL learners in widening their content knowledge." The L2 should not become a linguistic burden for the learner. If the situation demands that a switch from the L2 to the L1 is required, then it should be done. If learners are forced to use the L2 only, especially in cases in which they need to use their mother tongue, problems may occur (Marsh & Marsland, 1999). In fact, CLIL offers choice, two languages may be used, and as a result, the CLIL classroom may be natural and positive. The extent to which L2 and L1 are used depends on the aims and CLIL approach adopted. "It is useful to consider the L1/L2 ratio of 75%/25% as a minimum starting point for CLIL. This is very low in terms of L2 usage, but it allows for teachers to see CLIL as a means of enriching rather than constraining the learning context" (Marsh & Marsland, 1999, p. 51). In other words, the CLIL teachers need to gradually reduce the use of L1 during the CLIL lessons but should not abandon it completely as it may be a very useful tool.

The Current Study

The current study aims to investigate the situations in which CLIL teachers and learners switch codes. Based on the literature review and our observations of CLIL lessons, we assumed that both CLIL teachers and learners changed codes. Therefore, the research questions were the following:
1. When do the teachers use Polish during the CLIL lessons?
2. When do the learners use and overuse Polish during CLIL lessons?
3. 3. What are the language difficulties in spoken and written language that the learners face during the CLIL lessons?
4. What are the ways of overcoming the learners' language problems during the CLIL lessons?

Participants and Procedure

A total of 29 CLIL teachers participated in the study; 25 females and four males. The data concerning teaching experience in CLIL education is presented in Figure 1.
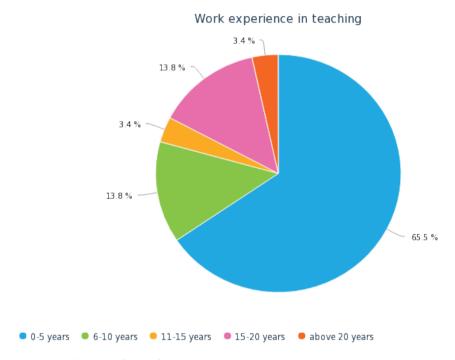

Figure 1. Work experience in CLIL

As it is demonstrated in Figure 1, most teachers do not have much experience in CLIL. 65.5% of the research participants have between zero and five years of teaching experience in CLIL. 13.8% have between six and ten years of experience in CLIL, and the same percentage of the research participants have between 15 and 20 years of experience in CLIL. Only 3.4% of the teachers have between 11 and 15 years of experience in CLIL, and the same percentage of the CLIL teachers has been working in CLIL education for more than 20 years. One of the reasons why most of the research participants do not have a lot of experience in CLIL is that CLIL is still treated as an innovative approach, and schools have been gradually introducing it within the last 15–20 years.

All the research participants were working in Secondary Schools teaching geography, biology, mathematics, chemistry, physics or history in English.

Data Collection Instrument

The teacher questionnaire has been especially designed for the purpose of the current study. The questionnaire consisted of 14 questions in the main section. Eight questions were closed-ended, and six questions were open-ended ones. Additionally, the CLIL teachers were asked to indicate their sex, age, teaching experience in CLIL, and the subject they teach. The questionnaire was in English.

The research was conducted in Spring 2019 during the CLIL teacher training. After having been given clear explanations and instructions, the CLIL teachers were kindly asked to fill in the questionnaire via the Internet.

Study Results

In the following part, the results of the study will be discussed, and the graphic representation of the obtained data will be presented in cases when it is necessary.

The first two questions that the participants were asked concerned the usage of Polish during CLIL lessons. Most of the CLIL teachers (89.7%) stated that they were using Polish during CLIL lessons and enumerated the following situations:
– "to explain grammar rules";
– "while explaining difficult vocabulary in biology—terminology";
– "only at the beginning of CLIL education—the students look terrified";
– "when I give them back their tests I switch into Polish";
– "when we do some experiments";
– "when I explain safety rules before doing experiments in physics";
– "when I have problems with discipline—students don't react to English";
– "when I don't have time and need to explain complicated terminology in chemistry";
– "when we do difficult equations";
– "when talking about Polish history."

In the case of the learners, most of the CLIL teachers (82.8%) stated that the learners were also using Polish during CLIL lessons in the following situations:
– "when asking questions";
– "when they don't understand difficult terminology in chemistry";
– "when they work in pairs or in groups they switch into Polish";
– "when they discuss difficult, very specialised topics";
– "in the situation when they can't find English equivalent";

– "when doing experiments and asking for necessary tools";
– "when they talk about things which are not related to the topic of the lesson";
– "when they do Matura tasks";
– "when they ask about grades";
– "when they ask about homework."

As can be noticed from the answers provided by the CLIL teachers, Polish is usually used in some difficult situations, for example when explaining complicated terminology or when the learners lack some content knowledge. In fact, it is not forbidden to use L1 in CLIL education. As Marsh and Marsland (1999) state, both mother tongue and target language should be used interchangeably, especially when new concepts are introduced.

The research participants were also asked if learners were overusing Polish during CLIL lessons. Most of the respondents (65.5%) provided a negative answer, however, 34.5% stated that their learners were overusing Polish in the following situations:

– "sometimes they ask too many questions in Polish. I'm sure they can ask the same questions in English";
– "when they work in pairs or groups they definitely overuse Polish";
– "when talking about something private";
– "when they are stressed e.g. before the test";
– "at the beginning of their CLIL education";
– "when they are lazy and don't want to put too much effort into explaining some terminology in biology."

The circumstances in which CLIL learners overuse Polish are usually connected with the CLIL learners feeling of insecurity or laziness. Additionally, Wong-Fillmore (1991) points out that the overuse of mother tongue in bilingual education might be due to the teachers' inconsequentiality as it is the teachers' role to show the learners the functions of the mother tongue and control the use of it during the lessons.

As for the other languages, which might be used during the CLIL lessons, most of the CLIL teachers (93.1%) answered that their learners were not using other languages. Only two CLIL teachers indicated Russian and Ukrainian to be used by their learners.

Next, the research participants were asked to indicate how much percentage of Polish should be used during CLIL lessons. As can be seen in Figure 2, 24.1% of the CLIL teachers chose 5%, 20.7% chose 10%, and the same percentage of the CLIL teachers chose 20%. 17.2% of the respondents chose 30%, and 6.9% chose 40%. As the data indicates, the CLIL teachers are fully aware of the fact that only a small percentage of the mother tongue should be used during CLIL lessons. However, the research conducted in Polish schools shows that the reality is different, and still, many teachers overuse the mother tongue during CLIL lessons (Muszyńska & Papaja, 2019).
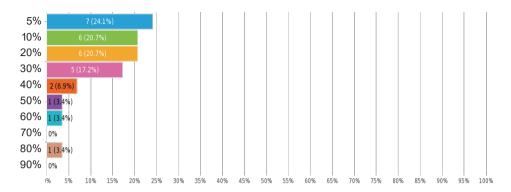
5%	7 (24.1%)
10%	6 (20.7%)
20%	6 (20.7%)
30%	5 (17.2%)
40%	2 (6.9%)
50%	1 (3.4%)
60%	1 (3.4%)
70%	0%
80%	1 (3.4%)
90%	0%

Figure 2. The percentage of Polish that should be used during CLIL lessons

The CLIL teachers were also asked to specify when, in their opinion, Polish should be used during CLIL lessons. The answers varied. As many as 82% of the respondents think that Polish should be used when explaining complex grammar, 55%—to help define new vocabulary items (e.g., some abstract words), 41%—to explain concepts or ideas, 31%—to practice the use of some phrases and expressions, 13%—to give instructions, and 10%—to give suggestions on how to learn more effectively. Nobody suggested any other answers. It is quite surprising that such a significant percentage of the research participants think that Polish should be used when explaining grammar. The main aim of CLIL is to provide the learners with content-specific knowledge not to teach them grammar. CLIL classes are usually accompanied with additional language classes during which grammar should be explained. During CLIL classes, certain grammatical structures can be practiced with the use of content-specific vocabulary (Wolff, 2007). This high percentage suggests that there are still CLIL teachers who do not know what the main goals of CLIL are.

When being asked why, in their opinion, the use of Polish was necessary in the CLIL classroom, most of the respondents (82%) indicated the first answer, namely "it helps learners to understand difficult concepts better." The next answer chosen by the research participants was that it did not make them feel lost (58%). 41% of the CLIL teachers chose answer c—"it makes learners feel less stressed" and 34% of the respondents claimed that it helped learners to understand new vocabulary items. All the reasons chosen by the research participants are mentioned when discussing the use of the mother tongue during CLIL lessons (Dalton-Puffer, 2006; Iluk, 2000; Marsh, 2001) and the first answer which seems to be the most popular among the research participants is often quoted as a solid argument for using the mother tongue during CLIL lessons.

The CLIL teachers were also asked to enumerate language difficulties in spoken and written language that CLIL learners need to face in CLIL educations. The answers were the following (Table 1):

Table 1.

Spoken and written language difficulties

Spoken language difficulties	Written language difficulties
"they keep translating the concepts from English into Polish and vice versa"	"using proper tenses when writing"
they have problems with pronunciation of some difficult terminology in physics"	"spelling of specialised terminology in chemistry"
"language barrier at the beginning of their CLIL education— they are not used to using English all the time"	"handwriting – oh, my God!"
"false friends"	"lack of specialised vocabulary in physics"
"they are scared and shy, when I ask a question there is silence"	"spelling mistakes—they sometimes write the words the way they pronounce them"
"they think that in a CLIL class their English has to be perfect so they are afraid of making mistakes"	"wrong structure of the sentences—they translate literally from English into Polish and vice versa"
"lack of specialised vocabulary in geography—they get stuck"	"wrong word order e.g. adverbs of frequency"
"they mix the tenses when they talk, they don't pay attention to grammar"	"problems with forming proper English sentences–they use too many contractions, slang words and Internet vocabulary"
"they have problems with asking questions in general"	"they don't pay attention to the stages of writing. They think that in CLIL it is not important. They are wrong"
"problems with fluency in English"	

Most of the CLIL learners tend to have problems with specialized vocabulary both in spoken and written language. When they lack content-specific vocabulary, they often get stuck and lose fluency. Some of them still tend to have problems with grammar, namely, the tenses or the structure of the sentences.

After having enumerated the language difficulties, the CLIL teachers were also asked to suggest the ways in which they could help the CLIL learners overcome these difficulties. The answers were the following:

– "by being patient";
– "I try to explain difficult concepts over and over again";
– "I give them a lot of additional exercises";
– "practice makes perfect";
– "I prepare a lot of additional language exercises e.g. fill in the blanks, transformations, language debates, etc.";

– "I give them more pair or group work so they don't feel that shy";
– "I always talk about their language difficulties and try to come up with suitable exercises";
– "I try to motivate them and tell them that making mistakes is something natural even in a CLIL class";
– "I switch into Polish when some concepts are too difficult to my students";
– "we talk about learning styles and some strategies they should use when studying difficult vocabulary in biology."

As can be noticed from the answers provided above, the CLIL teachers try to help the learners overcome language difficulties by providing them with additional exercises, designing pair or group work activities and making them aware of various learning strategies. One of the ways to help learners overcome language difficulties is to support them, motivate, and give them autonomy at each stage of their CLIL education (Dale, van der Es & Tanner, 2011).

Limitations of the Study

The interpretation of the above-presented findings is limited by certain methodological constraints connected with the selection and use of research instruments. The study was mainly based on a questionnaire, which did not contribute to its reliability. A recommendable direction for future studies could be the adoption of a mixed-methods approach enabling a combination of quantitative and qualitative tools that would lead to a cross-verification of the obtained results, thus allowing potential researchers to look at code-switching from a wider perspective.

Finally, it has to be underlined that the limitation of the present study is also a small number of CLIL teachers under investigation. It would be a good idea to investigate both CLIL teachers and CLIL learners so as to receive more data, which could be compared.

Conclusions

Basing on the current study and its findings, it is clear that almost 90% of the teachers code switch during CLIL lessons; in the form of the topic switch (to explain grammar, terminology or Polish history), affective functions (when the students "look terrified," misbehave or to explain safety rules before ex-

periments, as well as repetitive functions (in complicated equations). Teachers switch into Polish because it helps learners to understand difficult and new concepts better, overcome fear, and the feeling of being lost.

Almost 83% of the teachers claim that their students use Polish during CLIL lessons, most often making use of the reiteration function (asking for clarification and explanation), and equivalence (looking for English equivalents). Almost 33% of them report on their learners' overuse of code-switching while "talking about something private," at the beginning of their CLIL education or during group as well as pair work. In trying to find the reason for the very situation, the teachers provide examples of language difficulties the learners face during CLIL lessons. Their switches resemble a careful strategy, which has positive and facilitating functions, such as explaining notions, reducing learners' stress, and establishing a pleasant atmosphere.

In spoken language, these are manifested by means of problems with pronunciation, lack of specialised vocabulary, relying on false friends, translating concepts from one language to another over and over again, and being silent/ getting stuck. When it comes to writing, the learners have problems with sentence structure and spelling, mixing both, keep translating literally from English into Polish and vice versa, use too many contractions, slang, and Internet vocabulary. As a result, learners' code-switching is more often than not the evidence of poor competence lacking appropriate forms and features, a compensation strategy and/or a certain defensive mechanism thanks to which the learners follow the content of the course successively, though infrequently at the expense of language advancement.

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Katarzyna Papaja, Marzena Wysocka-Narewska

Diagnostizierung des Sprachcodewechsels im integrierten Fach- und Sprachunterricht

Z u s a m m e n f a s s u n g

Der Artikel befasst sich mit der Problematik des Sprachcodewechsels im integrierten Fach- und Sprachunterricht. Die Studie wurde unter 29 Oberschullehrenden durchgeführt, die Geographie, Biologie, Mathematik, Chemie, Physik und Geschichte auf Englisch unterrichten. Mit Hilfe eines Fragebogens ließen sich solche Situationen diagnostizieren, in denen sich die Verwendung des Polnischen im Unterricht als hilfreich und/oder notwendig erweist – nicht nur von Lehrenden, sondern auch von Lernenden. Untersucht wurden auch die Funktionen und die Ursachen für den Codewechsel im Klassenzimmer.

Schlüsselwörter: Sprachcodewechsel, CLIL, CLIL-Lehrende, CLIL-Lernenden