Exploring the Relationship between CLIL and L1 Ability in Finland: Analyzing Written and Oral Production

Exploración de la relación entre CLIL y la habilidad en L1 en Finlandia: análisis de la producción oral y escrita

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ABSTRACT. This study explores the relationship between CLIL and L1 ability in a Finnish secondary education context. The study is based on the analysis of L1 written and oral productions of four ninth-grade students (2 CLIL and 2 non-CLIL). Written production was evaluated through a short essay task, while oral production was assessed via a verbal fluency task and a picture naming task. In the written task, students responded to a question related to a topic previously covered in their curriculum. In the verbal fluency task, participants were given 60 seconds to produce as many words as they could beginning with a given letter. In the picture naming task, participants were asked to name 12 pictures that were shown on a screen. The results were analyzed and discussed regarding not only participants' linguistic backgrounds but also their self-assessed language abilities in English and Finnish. In two of the tasks, the CLIL students performed worse than the non-CLIL students in their L1; however, no clear pattern emerged in the third task. The study sheds light on the relationship between CLIL and L1 ability in the context of a discussion about the benefits and linguistic costs associated with bilingualism. The results highlight the importance of accounting for the impact of socioeconomic status and other L2 exposure in future studies in this area. In addition, the authors contend this is an area of research that merits additional attention given the present and future scope of bilingual education globally.

Keywords: Bilingual education; written production; oral production; Finnish educational context; CLIL; content and language integrated learning; first language; linguistic assessment; verbal fluency; picture naming task; self-assessment of language abilities; socioeconomic status; L2 exposure.

RESUMEN. Este estudio explora la relación entre CLIL y la habilidad de L1 en un contexto de enseñanza secundaria de Finladia. Se basa en el análisis de las producciones escritas y orales en L1 de cuatro estudiantes de grado noveno (2 en ambiente CLIL y 2 en ambiente no-CLIL). La producción escrita se evaluó mediante una tarea de redacción breve, mientras que la producción oral se evaluó mediante una fluidez verbal y otra de denominación de imágenes. En la tarea escrita, los estudiantes respondían a una pregunta relacionada con un tema tratado previamente en su plan de estudios. En la tarea de fluidez verbal, los participantes disponían de 60 segundos para producir tantas palabras como pudieran que empezaran por una letra determinada. En la tarea de nombrar imágenes, se pidió a los participantes nombrar 12 imágenes que se mostraban en una pantalla. Los resultados se analizaron y debatieron en relación no solo con los antecedentes lingüísticos de los participantes, sino con sus capacidades lingüísticas autoevaluadas en inglés y finés. En dos de las tareas, los estudiantes de CLIL obtuvieron peores resultados en su L1 que los que no lo eran; sin embargo, en la tercera tarea no se observó ningún patrón claro. El estudio arroja luz sobre la relación entre el CLIL y la capacidad en la L1 en el contexto de un debate sobre los beneficios y costos lingüísticos asociados al bilingüismo. Los resultados subrayan la importancia de tener en cuenta el impacto del estatus socioeconómico y otros tipos de exposición a la L2 en futuros estudios en este ámbito. Además, los autores sostienen que se trata de un área de investigación que merece atención adicional dado el alcance presente y futuro de la educación bilingüe a nivel mundial.

Palabras clave: Educación bilingüe; producción escrita; producción oral; contexto educativo finlandés; CLIL; aprendizaje integrado de contenidos y lenguas extranjeras; lengua materna; evaluación lingüística; fluidez verbal; tarea de nombrar imágenes; autoevaluación de habilidades lingüísticas; estatus socioeconómico; exposición a L2.

Introduction

Content and language integrated learning (CLIL) is a pedagogical approach in which a foreign language is used to teach other subject matters (i.e., content), while also focusing on the development of language ability (Dalton-Puffer, 2011). Although the term CLIL emerged as a label for language and content education in Europe (Nikula & Mård-Miettinen, 2014), it has since been adopted not only in Asia and Oceania (Sylvén, 2019) but also in South America (Banegas, 2019). In particular, the approach has been utilized in the context of bilingual education systems, where its implementation is not expected to negatively impact students' development of their first language (L1).

Much emphasis in research has been placed on the results of CLIL in terms of its effectiveness as an approach for teaching an L2 (e.g., Dalton-Puffer, 2011; Pérez Cañado, 2012). However, limited research has been conducted on the possible effect this considerable emphasis on L2 could have on L1 ability. This is particularly relevant in educational contexts in which core subjects (e.g., science, geography, and history) are taught largely or entirely in the L2 because it is unknown whether students will receive the required amount of content-specific linguistic exposure to allow for the full development of their L1. So far, researchers investigating the impact of CLIL on L1 have found there to be either no significant difference (e.g., Anghel, Cabrales & Carro, 2015; Ohlsson, 2021), a stronger L1 among CLIL students (e.g., Pavón Vásquez, 2018) or a weaker L1 among CLIL students (e.g., Holmberg, 2019). There have also been studies in highly comparable contexts with contrasting results. For instance, while Lim Falk (2019) found L1 Swedish academic vocabulary of students in a strong implementation of CLIL (i.e., most of the instruction was in the L2) was less developed than that of students in both a weaker implementation (i.e., approximately 50% of instruction in the L2) and a non-CLIL group, Ohlsson (2021), in studies also conducted in Sweden, found no substantial differences between groups regardless of the type of CLIL implementation. Such variation in results is reflective of the impact of numerous different variables, including the amount of CLIL teaching, the pedagogical practices utilized, such as strategies employed by teachers

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(Metlí & Akıs, 2022) and individual differences among students. Additionally, several studies (e.g., Cenoz et al., 2014; Pérez Cañado, 2018; San Isidro & Lasagabaster, 2019) have emphasized the clear lack of research conducted on this phenomenon. Therefore, this study aims to examine the relationship between CLIL and L1 to provide greater insight into the effects of CLIL on students' L1 abilities. Specifically, this small-scale case study is guided by the following research questions:

How do CLIL and non-CLIL students differ in terms of:

a. overall L1 writing performance?

b. L1 oral production?

In this article, we first cover the relevant theory related to the phenomenon that is being examined in this study. Second, we describe the context and participants, the data collection process and the research methods chosen, after which the limitations are considered. Then we present and discuss the results in the context of the participants' linguistic backgrounds and other variables, and, finally, the implications of the study are summarized.

Literature Review and Theoretical Background

Language Learning Approaches Related to CLIL

Although CLIL has often been considered distinct from immersion (Lasagabaster & Sierra, 2010; Nikula & Mård-Miettinen, 2014), the two approaches, along with content-based instruction (CBI) and English as a medium of instruction (EMI) share many similarities (Brown & Bradford, 2017; Cenoz, 2015). For instance, they all emphasize the need for considerable input, output, and interaction for language acquisition to occur. Given their similarities and their role in the language learning process of their participants, such pedagogical approaches can all be considered implementations of bilingual (or multilingual) education (Dalton-Puffer et al., 2014). As a pedagogical approach, CLIL certainly belongs in this category and the CLIL context studied in the present paper is reflective of bilingual education specifically.

When it comes to the aim of learning a language, bilingual education stands in contrast to alternative pedagogical approaches, such

as task-based learning (TBL), grammar translation (GT), and communicative language teaching (CLT) to name a few. While CLIL may reflect some aspects of TBL and CLT (e.g., one of the 4 Cs in CLIL is communication), the aforementioned approaches are generally associated with teaching English as a foreign language (EFL), a second language (ESL) or an additional language (EAL)—that is, they are generally considered distinct from bilingual education, particularly a dual-focused approach such as CLIL where content is taught via, for example, English. In the context of this study, this is relevant as the English instruction of non-CLIL students in mainstream education is limited to their scheduled English language classes, which utilize one or several of the above-mentioned approaches, whereas CLIL students have both CLIL and English language classes in their schedules.

CLIL, L1 and the Bilingual Cost

First language ability can be affected by various factors at different stages of a learner's development. Children acquire their first language from their surrounding environment, which includes the input from, for example, their parents (Ambridge & Wagner, 2021; Morgenstern, 2014). The frequency and extent of the input, among other factors, contribute to language development taking place (Morgenstern, 2014). Another variable that has been shown to correlate positively with the development of L1 is socioeconomic status (SES; Fernald et al., 2013; Huttenlocher et al., 2010). After the initial acquisition has taken place, continued learning occurs both formally (e.g., at school, university, and work) and informally (e.g., via social interactions), allowing individuals to continue to develop their linguistic knowledge and skills.

The matter is somewhat more complicated in the case of multilinguals, as they receive comparatively less exposure to each language than their monolingual peers. Despite this discrepancy in input and output, being multilingual may lead to certain cognitive advantages and a different language learning experience altogether (Bialystok, 2001). However, there is a lack of research on the possible impact that participation in a bilingual education program such as CLIL could have

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on L1 ability (Dalton-Puffer, 2011; Pérez Cañado, 2018), as the approach aims to ensure that L2 ability develops concurrently with content learning (Coyle et al., 2010), along with the implicit assumption that L1 acquisition will not be hindered. Concerns about the impact of CLIL on L1 ability are not a new phenomenon; both Airey (2004) and Garcia (2013) alluded to the potential risk of delivering national education curricula through CLIL in terms of the possible adverse effects on L1 ability. Those sentiments were echoed by Dalton-Puffer (2011), who emphasized that this topic should form part of the research agenda in CLIL.

In various studies in Europe, CLIL has been found to have no negative effect on students' L1. For instance, Seikkula-Leino (2007) found that CLIL students in Finland were not disadvantaged in terms of L1 ability (writing ability and overall performance as per grades), a finding consistent with results from studies in other contexts focusing on CLIL and L1 conducted around the same time (Admiraal et al., 2006; Merisuo-Storm, 2007; Serra, 2007), as well as with later studies (Anghel et al., 2015; Pérez Cañado, 2018). In addition, Merino and Lasagabaster (2018) found no significant difference in L1 writing between CLIL and non-CLIL students in a multilingual setting where English is incorporated in addition to Spanish and Basque. On the other hand, the effect of CLIL on students' L1 has also been found to be either positive (Navarro-Pablo & López Gándara, 2020; San Isidro & Lasagabaster, 2019) or negative (Lim Falk, 2019; Holmberg, 2019) in contexts that differ in terms of the type of CLIL implementation and the skills or language systems being measured, as well as the inclusion of certain variables, such as setting and SES, in the data analysis. The emergence of such variation may not be surprising given that CLIL is implemented in many different contexts (e.g., English as a foreign language, English as a lingua franca, or English as a third language), for different purposes (e.g., to learn a language other than English), and to various degrees (i.e., the percentage of instruction in the L2 or as part of a multilingual program).

As discussed by Pérez Cañado (2018), one of the key variables identified as affecting L1 level in CLIL students is SES. This was also alluded to by Merisuo-Storm (2007), who referred to the impact of entrance procedures and participants' family backgrounds, as well as by Bruton (2011), who expressed concern about possible selection bias in CLIL programs. Other factors that have been evaluated in related studies

include the amount of instruction in the L2 (Holmberg, 2019; Lim Falk, 2019; Seikkula-Leino, 2007), whether there was a rural or urban setting (Pavón Vásquez, 2018), and homogeneity in terms of variables such as verbal intelligence and motivation (e.g., Navarro-Pablo & López Gándara, 2020).

Given that CLIL is a form of bilingual education in which students learn via an L2, it is worth considering research in bilingualism regarding the interaction between L1 and L2, particularly insofar as the effects on the L1 are concerned. Firstly, it is important to note that bilingualism has previously been associated with various benefits, such as cognitive and linguistic advantages (Bialystok et al., 2012), greater interference control when listening (Filippini et al., 2015) and, for instance, delaying the onset of dementia in older bilinguals (Alladi et al., 2013). Despite the clear positive benefits of bilingualism, it is also relevant to assess whether there are any adverse linguistic costs associated with participating in CLIL, as this is a phenomenon that has been found to exist in bilinguals generally. Such a bilingual cost (Faroqi-Shah et al., 2021) can materialize in various ways, such as bilinguals knowing fewer low-frequency words and having slower access to them (Gollan et al., 2005) and, for example, L1 attrition in cases where there has been prolonged intense L2 exposure in conjunction with a diminished level of L1 use (Cook, 2018; Schmid, 2007). In addition, bilinguals have been found to have smaller vocabularies, perform worse on picture-naming activities, and have more tip-of-the-tongue phenomena than non-bilinguals (Wauters & Marquart, 2018). In the literature on bilingualism (e.g., Baus et al., 2013; Ghoreishi et al., 2014; Schmid & Köpke, 2009), two areas in particular in which the bilingual cost has been studied are lexical retrieval and access, which have commonly been assessed via a verbal fluency task (VFT) or a picture naming task (PNT). For instance, Baus et al. (2013) used a PNT together with a VFT in a second-language immersion context to investigate the bilingual cost on L1 ability. In that study, the PNT results suggested there was a decrease in the "availability of L1 lexical representation associated with L2 immersion" (Baus et al., 2013, p. 406).

To sum up, CLIL is distinct from many other approaches to language teaching in that it integrates teaching other subjects with the L2 by having learning outcomes related both to the subject and the L2

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itself. This approach is considered a form of bilingual education because it also aims to ensure students' L1 learning is not adversely affected. While the advantages of bilingualism have already been established in the literature, it is also worth considering the disadvantages such as the possible adverse effects on L1. In CLIL research, this phenomenon has been studied to a limited extent, and no clear conclusions have yet emerged, with variation existing even in studies conducted in comparable contexts.

Data and Methods

Context

This study is focused on a CLIL context in Finland. CLIL teaching in Finland began on a large scale in 1991 with the amendment of the Basic Education Act, when the languages of instruction in schools were no longer defined by law. The popularity of CLIL has varied somewhat over the years in Finland. In 1996, about 10% of comprehensive schools were implementing CLIL (Nikula & Marsh, 1996) whereas, in 2005, the number had dropped to around 5% (Lehti et al., 2006). In 2017, 41 municipalities were offering CLIL, which corresponds to about 13% of the municipalities in Finland (Peltoniemi et al., 2018). It can therefore be said that CLIL is well established as a form of teaching in the country. Most CLIL teaching in Finland takes place in pre-primary or primary education, is small-scale (less than 25% of all teaching) and is delivered in English (Peltoniemi et al., 2018). In contrast, CLIL teaching, and consequently the related research, in languages other than English is rather scarce in Finland (e.g., Varis & Roiha, 2023).

The Finnish National Core Curriculum for Basic Education (2014) provides a good framework for CLIL teaching, although it uses the generic term bilingual education. The curriculum divides it into large-scale (i.e., at least 25% of all teaching) and small-scale (i.e., less than 25% of all teaching) bilingual education. The curriculum does not define the language objectives of CLIL but leaves them to the education provider (i.e., in most cases the municipality). Furthermore, the curriculum does not take a position on the language of CLIL teaching, which

can be delivered in any language. Regardless of the language of instruction, pupils must achieve the general objectives of the curriculum in all subjects.

Participants

Given that this study compares data from both CLIL and non-CLIL participants, it is important to define these groups clearly at the outset. In the context of this study, CLIL is defined as an approach to teaching content partially in English, with the aim of students developing their English-language ability and content knowledge simultaneously. In particular, CLIL will imply that students have been taught in English for at least 25% of the time in each subject, which is the policy of the target school from which the data have been gathered (i.e., a large-scale implementation). Accordingly, CLIL students are those who participate in such a program; whereas non-CLIL refers to those who do not participate in a CLIL program and who are taught primarily in Finnish, except for their English or other language studies. It is also worth noting that CLIL students receive an additional hour (i.e., a 45-minute class) of English as a subject, which undoubtedly complements and capitalizes on their existing exposure to English during other classes. Non-CLIL students just have another hour of a different subject instead.

This study comprises four participants in total: Two CLIL and two non-CLIL students, all of whom were in the ninth grade at the target school. Participants were recruited from the ninth grade as these CLIL students were not only in a CLIL class at the time of the data collection, but they were also likely to have been in a CLIL class for several years leading up to the data collection. Moreover, all of the chosen students have Finnish as their L1, as per their self-reported data. This was deemed important as it would allow for the analysis of the effect of students' CLIL participation (or lack thereof) on their L1 Finnish. Basic information about participants (listed under pseudonyms to maintain anonymity) is depicted in Table 1, along with information about parents' level of education and their ages. In this study, parents' educational attainment has been used as a proxy for SES, as has been the case in closely related research (e.g., Pérez Cañado, 2018). All the

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procedures in the study were conducted following The Finnish National Board on Research Integrity (TENK). Participants' guardians were notified of the research in advance and given the option to opt out, after which consent was sought from the participants themselves prior to commencing the research. Both the participants and the guardians were also informed of data privacy and storage protocols related to this study. Additionally, the researchers only used the first two letters of participants' first and last names when liaising with their teacher and when handling the data, thus helping to ensure participant confidentiality.

Table 1. Participants' Basic Information

Pseudonym	Age	Sex	Parent 1		Parent 2	
			Age	Education Level	Age	Education Level
Jenni (non-CLIL)	14	Female	41-50	Bachelor's degree	41-50	Bachelor's degree
Sanna (non-CLIL)	15	Female	51-60	High school diploma	41-50	High school diploma
Milja (CLIL)	15	Female	51-60	Master's degree	51-60	Master's degree
Jari (CLIL)	15	Male	41-50	High school diploma	41-50	Compulsory education

Of the four participants, only the CLIL students had previously spent time in environments (e.g., a home, a country, or a school) where a language other than Finnish was spoken; Jari had spent 4.5 years in an English-speaking location and two months in a Swedish-speaking school, whereas Milja had spent one year in an English-speaking location and more than two years in an English-speaking school. Additional data about participants' linguistic backgrounds are depicted in Table 2. The questions related to the participants' linguistic background are from the LEAP-Q questionnaire (Marian et al., 2007). Participants were also asked to respond to a series of survey questions on a scale of 1 to 5, with 5 being the highest (i.e., the most in agreement), aimed at evaluating their abilities and confidence in English and Finnish. Eight of the statements were modeled on statements previously

used by Rumlich (2016), four were modeled on statements used by Seikkula-Leino (2002), and four were generated by the authors of the present paper (see Appendix A).

Table 2. Data on Participants' Linguistic Background

Pseudonym	In order of dominance					The order in which learned					In order of most used in an average week			
	1	2	3	4	5	1	2	3	4	5	1	2	3	4
Jenni (non-CLIL)	Fin	Eng	Spa	Swe		Fin	Eng	Spa	Swe		Fin	Eng	Swe	Spa
Sanna (non-CLIL)	Fin	Eng	Swe	Spa		Fin	Eng	Spa	Swe		Fin	Eng	Swe	Spa
Milja (CLIL)	Fin	Eng	HV	Swe	Spa	Fin	Eng	Spa	Swe	HV	Eng	Fin		
Jari (CLIL)	Fin	Eng	Swe			Fin	Eng	Swe			Fin	Eng	Swe	

Note: Fin = Finnish; Eng = English; Swe = Swedish; Spa = Spanish; HV = High Valyrian

Data Collection

Participants were given three tests: A short essay, a VFT, and a PNT. The instruments and processes are described as follows. Students completed all three tasks in one language before taking a short break, after which they completed the tasks in the other language. To reduce the risk of students preparing responses for the second set of tasks during the break, they were not given any prior indication that the tasks would be the same in the second half of the session. Participants were given instructions before each task, and they were always given in the language of the task being administered.

Verbal Fluency Tests

The VFT used in this study is the letter task, in which participants must produce valid responses that begin with a given letter. This type of task was chosen because it requires participants to suppress semantically related words while actively trying to produce acceptable items (Shao et al., 2014), in addition to the fact that the results it produces

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appear to vary less, depending on the age of participants, than those of the semantic task (Brickman et al., 2005). The letter *t* was chosen as the prompt in both languages because they contain many words starting with this letter, as verified upon consultation with dictionaries. Students were asked to name as many words beginning with *t* as possible in 60 seconds. They were also asked to avoid providing names of people or places as well as repetitions. Invalid responses removed from the final data included identical repetitions (e.g., *time*) and repetitions via synonymy (e.g., *tiili* and *tiiliskivi*, which translate to *brick* in English), while other responses that were similar to each other were accepted as they were deemed not to belong to a common conceptual category (e.g., *timer*, *timetable*, *timing* in English).

Picture Naming

In total, 12 pictures were included in the PNT in this study (see Appendix B). Eight of them were chosen from the picture set originally developed by Snodgrass and Vanderwart (1980) and updated by Rossion and Pourtois (2004). It was not feasible to utilize the whole set in the present study due to time restrictions. The first four items were deemed general concepts, whereas the last four were deemed to belong to a particular category (i.e., tools). In addition, four mathematical images (geometric shapes) were included in the test—these items were not selected from the aforementioned set of pictures. Although English and Finnish terms have been allocated to each item, alternative names were accepted in some cases [e.g., *tuhatjalkainen* (myriapod) instead of *perhostoukka* (caterpillar)] because some images may not be so easily identifiable. In addition, synonyms were accepted for some images (e.g., *nuppi*, *ovikahva* and *ovenkahva* for *doorknob*). During the task, students were shown images and asked to say the name of the item if they knew it. Alternatively, students were given the option to say that they did not know or remember the name.

Short Essay

The topic for the writing task —the environment— was chosen from a list of topics these students had already covered in their syllabus to

ensure familiarity. The English version of the task required participants to write a response of 200 to 250 words to the following statement: *Human actions are to blame for the destruction of natural ecosystems. Do you agree or disagree with this statement? Justify*. In the Finnish version, the stipulated text length was fifty words shorter than in the English one because Finnish texts generally have fewer words than English texts due to morphosyntactic differences between the two languages. Participants were also asked to write in an appropriate style, the aim of which was to prompt students to use academic language, to the extent they were capable. To prevent any external influences, participants completed the task in separate rooms and phones were not allowed to be consulted during the task. Participants were given 20 minutes to complete the task or as much of it as possible. To mitigate the risk of students experiencing anxiety during the task, they were advised that there was no assessment or other consequences stemming from the task and that there was no pressure to finish the task within the given time.

The essays were evaluated according to the profile technique (Jacobs et al., 1981), which has been previously used in related research (Merino & Lasagabaster, 2018). The technique is used to provide feedback across five scales (content, organization, vocabulary, language use, and mechanics) across four bandings ('excellent to good,' 'good to average,' 'fair to poor,' and 'very poor'). The form was modified slightly for the assessment of the Finnish texts; namely, the reference to "English vocabulary" was renamed to "Finnish vocabulary", and "articles" was changed to "cases" in the section about grammar. All other criteria in the form were deemed applicable in both languages. The texts were assessed by the authors of the present paper, all of whom are highly experienced applied linguists and have high levels of proficiency in, amongst other languages, English and Finnish. After initial evaluations, the assessors met for a second round of assessment in which scores were discussed, justified, and, in some cases, modified. At the end of this process, all assessors' total scores for all participants' tasks in both languages had a correlation coefficient of .74 or higher.

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Limitations

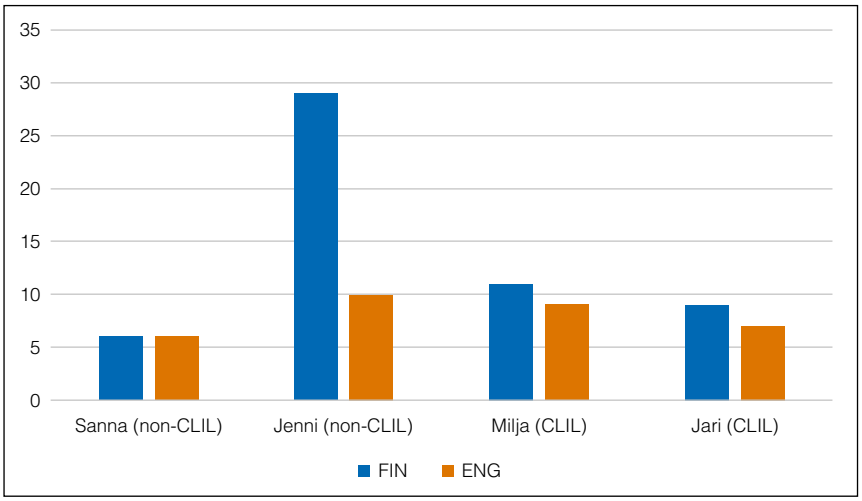
This study had several limitations that should be considered before discussing the results. Firstly, the sample size is small and not conducive to extensive quantitative analysis, so the results are not easily generalizable to a wider population. Secondly, participants did not complete a language proficiency or vocabulary size test at the outset of the study. Such data, in conjunction with participants' self-assessments, would have provided more detailed insight into participants' language levels. Thirdly, participants' samples were collected in both languages on the same day. Ideally, there would be a time interval between these two data collection points, but this was not feasible in the current project due to restrictions related to the data collection process. Fourthly, the present paper is focused on a limited range of facets of language production and may not be easily applicable to L1 ability as a whole. Finally, the researchers did not have access to the frequency values of the items chosen in the PNT. This would have shed light on the possible impact of bilingualism (or multilingualism) on low-frequency lexis, which has been the subject of previous research (e.g., Baus et al., 2013). Nevertheless, this study does constitute a contribution to the growing body of literature focused on this phenomenon, especially since it provides greater insight into the Finnish context, as well as brings together research in bilingual education and multilingualism generally.

Results

Verbal fluency task

The results of the VFT are depicted in Figure 1. Jenni, a non-CLIL student, produced the highest number of valid responses in Finnish and English, whereas Sanna, the other non-CLIL student, produced the lowest number of valid responses in both languages. The number of responses produced by Jenni in Finnish (29) was more than double that of all other participants. The second highest in the category was Milja (11), a CLIL student.

Figure 1. Results of the Verbal Fluency Task



Regarding the VFT in English, it is unlikely that Jenni, a non-CLIL student with no previous time spent in English-speaking environments, would actually have a larger L2 vocabulary or better lexical access and retrieval than either Milja or Jari, both of whom are CLIL students and have previously spent time living in English-speaking environments. In addition, the CLIL students had higher self-evaluations of their English than the non-CLIL students. Therefore, it is possible that Jenni was, perhaps by chance, more familiar with this kind of task, given that she also excelled in the Finnish version. On the other hand, it is unsurprising that Sanna performed worse than Milja and Jari, given that she is a non-CLIL student and had less exposure to English overall. Concerning the two CLIL students, it is interesting that Jari performed worse than Milja in English despite his considerably longer time spent in English-speaking environments.

In terms of the results in Finnish, it is certainly surprising that Jenni outperformed all students by such a considerable margin, even though her self-evaluation of Finnish was lower than that of the other three participants (see "I am good at Finnish" in Appendix C). As with her English result, part of this discrepancy could be attributed to her possibly having a better grasp of the requirements of the task itself, but with a discrepancy of such a magnitude, it is worth considering the possible

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influence of other factors, such as CLIL participation (i.e., the focus of this study) and, for example, SES, which, as mentioned earlier, can be measured by parents' educational attainment. Jenni's parents were both university-educated (bachelor's level), whereas the parents of the other non-CLIL student (Sanna) were only educated to a high school level. The parents of Jari (a CLIL student) were educated to a compulsory education and high school level, respectively, while the parents of the other CLIL student (Milja) were educated to a master's level. The fact that differences in L1 ability would reflect differences in SES is unsurprising when considered in light of previous research (Anghel et al., 2015; Pérez Cañado, 2018).

One factor that may contribute to Jari's weaker performance in the Finnish VFT compared to Milja is the considerable differences in the educational attainment of their parents, in addition to the differences in time spent away from Finnish-speaking environments. Moreover, Jenni's performance in the L1 VFT compared with the other non-CLIL student as well as the CLIL students is suggestive of the importance of SES in the discussion about CLIL participation and L1 ability. This variable was not considered, for example, in a related study by Navarro-Pablo and López Gándara (2020), who ultimately found CLIL students to outperform non-CLIL students in their L1. This suggests that studies concerned with the relationship between CLIL and L1 should strive to account for the impact of SES before drawing conclusions about the impact of CLIL.

Picture Naming Task

The total quantities of responses produced in the PNT according to the three alternatives given to participants are depicted in Table 3. Jari produced the fewest valid responses in the Finnish task, whereas Milja produced more responses than Jari but fewer than both of the non-CLIL students. In the English version, Jari's performance was clearly the strongest.

Table 3. PNT Response Totals

Pseudonym	Valid Response		Did Not Know (or Invalid Response)		Did Not Remember	
	FIN	ENG	FIN	ENG	FIN	ENG
Jenni (non-CLIL)	9	5	3	6	0	1
Sanna (non-CLIL)	9	0	3	9	3	3
Milja (CLIL)	7	4	1	1	4	7
Jari (CLIL)	3	10	4	2	5	0

In the English PNT, it is interesting that Jari had the most valid responses despite his weaker performance in the English VFT relative to Milja and Jenni. This result is consistent with Jari's very strong self-evaluation of his English knowledge and skills. Sanna had the weakest performance in the PNT with zero valid responses. Her performance comprised three instances of not remembering and nine instances of not knowing, meaning that she did not attempt any responses in this section. Her result is consistent with her self-evaluation statements about her English, her performance in the English-language VFT, and her parents' educational attainment combined with being a non-CLIL student.

However, in the Finnish PNT, it is also noteworthy that Sanna (along with Jenni) had the highest number of valid responses despite her performance in the VFT being weaker than that of all other participants. This suggests that the VFT and the PNT may not be affected in the same way by all the same variables, such as SES, CLIL participation, and, for example, previous L2 exposure. In this task, both CLIL students performed worse than the non-CLIL students, with Milja producing seven valid responses and Jari producing three. Jari, in particular, stands out as performing worse in this task than the other participants, despite his strong self-evaluation of his Finnish knowledge and skills in most criteria, except when compared with classmates (see the last statement in Appendix C).

In addition, the CLIL students were unable to remember a term in Finnish more times than the non-CLIL students, whereas one of the CLIL students (Milja) had the highest number of instances of this

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occurring in English, as well. This is consistent with previous studies suggesting that bilinguals are prone to more tip-of-the-tongue phenomena than non-bilinguals (Gollan et al., 2005). All in all, it is clear the non-CLIL students outperformed the CLIL students in the L1 PNT, given the number of valid responses produced by participants from each group.

Essay Task

Participants completed the writing task to varying levels of depth, as can be observed from the word counts of participants' texts and the time spent on each task, both of which are depicted in Table 4. The final results of the evaluations are displayed in Table 5 and Table 6. Milja, a CLIL student, had the strongest performance in English, whereas Sanna, a non-CLIL student, had the strongest performance in Finnish. Jari, a CLIL student, had the weakest performance of all participants in the Finnish version of the task, whereas Sanna had the weakest performance in the English version of the task. Both non-CLIL students performed better than both CLIL students in the Finnish version of the task.

Table 4. Word Count and Time Spent on Writing Task

Pseudonym	Word count		Time spent (minutes)	
	FIN	ENG	FIN	ENG
Jenni	211	157	20	20
Sanna	156	194	18	20
Milja	157	194	14	10
Jari	79	138	13	13

Table 5. Evaluations of Essays in English

	ENGLISH				
	Sanna (non-CLIL)	**Jenni (non-CLIL)**	**Milja (CLIL)**	**Jari (CLIL)**	**ALL**
Assessor 1	73	75	82	72	75.5
Assessor 2	71	70	84	72	74.25
Assessor 3	68	77	86	78	77.25
Average	**70.67**	**74**	**84**	**74**	**75.67**

Table 6. Evaluations of Essays in Finnish

	FINNISH				
	Sanna (non-CLIL)	**Jenni (non-CLIL)**	**Milja (CLIL)**	**Jari (CLIL)**	**ALL**
Assessor 1	87	81	70	66	76
Assessor 2	80	77	72	64	73.25
Assessor 3	90	82	75	71	79.5
Average	**85.67**	**80**	**72.33**	**67**	**76.25**

The results of the English version of the essay task are somewhat more surprising than those of the Finnish version of the task. While it is no surprise that Milja, a CLIL student, performed well in English, it is somewhat surprising that Jari, the other CLIL student, did not outperform both non-CLIL students in English. It should be noted that Jari only spent 13 minutes completing the task; his word count was the lowest of all participants, which means he could have probably scored higher had he applied himself and used the time and word count allowances afforded. It is also interesting to note that Milja, having spent only ten minutes on the task, produced the text with the highest score and the equal highest word count together with Sanna, who spent the full twenty minutes. This may indicate the cognitive advantages related to bilingualism (Bialystok et al., 2012) alluded to earlier.

In the Finnish version, the CLIL students performed worse than the non-CLIL students overall. The average score for the two CLIL students was 69.67, whereas for the non-CLIL students it was 82.83. Again, Jari spent only ten minutes on the task and produced the fewest words in total, which could indicate a lack of motivation or a sense of challenge with the task. Similarly, Milja only spent 14 minutes on the task and produced the same number of words as Sanna, who spent 18 minutes and obtained the highest score. Although it is not entirely surprising that the non-CLIL students outperformed the CLIL students in this task, it is interesting to note that in this case the highest result was obtained by the non-CLIL student whose parents were only educated to a high-school level, which casts doubt on the impact of SES on the results of this task.

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Discussion and Conclusions

The data provide insight into these participants' abilities as well as the impact that various variables may have had on participants' performance in the VFT, the PNT, and the short essay. Although a non-CLIL student had the strongest performance in the L1 VFT, the results for that task do not provide any clear pattern related to CLIL participation, particularly given that the weakest performance in the L1 VFT was also by a non-CLIL student. It is, however, suggestive of the role of SES in language acquisition, given that the two weakest performers are those whose parents had the lowest educational attainment.

In the results of the L1 PNT and the L1 essay task, the differences between the CLIL and non-CLIL students became apparent, with both non-CLIL students outperforming the CLIL students in both tasks. Milja's results were considerably stronger than Jari's, despite her results still being lower than those of the non-CLIL students. This is suggestive of the possible impact that SES may have had on Jari's results, as mentioned earlier. At this stage, it is also worth considering the impact that Jari's 4.5 years spent living in an English-speaking environment may have had on the development of his L1 Finnish skills. In addition, the role that CLIL participation may have played cannot be ignored. Ultimately, having such extensive exposure to English, whether via CLIL or as a result of immersion in a country where English was spoken, means that the exposure to Finnish was probably limited in comparison to what other participants had, which may have affected L1 acquisition and the development of corresponding skills in the L1. Moreover, given Jari's relatively strong self-evaluations of his L1 Finnish, it can be said that either he is unaware of the relative level of his L1 knowledge and skills or that he is not disadvantaged by any shortfall in this area, resulting in his own L1 confidence not being affected, except when self-assessing his performance in classes taught in Finnish and when comparing himself to his peers (see Appendix C).

Although it is not the focus of this paper, it is worth mentioning that such multilingual students may engage in pedagogical translanguaging, particularly in the classroom, to communicate successfully by utilizing all their resources regardless of what language they

acquired them in (García, 2009; Cenoz & Gorter, 2015). Therefore, if there is deemed to be a relative deficiency in a given language, it may not negatively affect their ability to communicate or their confidence in their ability to do so. This is a point that should be considered when discussing possible difficulties that bilingual or multilingual students appear to face.

This study has aimed to shed light on the impact of CLIL participation on L1 ability in written and oral production. In two of the three tasks (one oral and one written), the CLIL students performed worse than the non-CLIL students, whereas the results from the third task (the VFT) did not produce a similar pattern. The results from this study should be considered in the context of other variables in addition to CLIL participation, such as time spent living in an English-speaking environment and SES. Indeed, SES appeared to have an impact on several results in this study, which is worth accounting for in related studies focusing on this phenomenon in the future, given that it has been shown to play a role in language acquisition. Regarding the linguistic costs associated with bilingualism, it is important to consider the impact that extramural exposure, living in a location where a given language is spoken, and participation in a program such as CLIL can have on L1 ability. Although a bilingual cost may emerge in a given dataset, the extent to which this can be attributed to CLIL and not to other sources of exposure (i.e., other causes of bilingualism) should be assessed carefully. Nevertheless, given that linguistic costs of bilingualism have been identified in numerous studies, it would seem unreasonable to rule out the potential impact of CLIL on L1 ability without considering its contribution to the bilingualism of its participants.

Ultimately, this is an area of research that merits further attention, given the scope of CLIL implementations around the world. As an objective, one approach could be for researchers to seek to determine the optimal amount of CLIL (or equivalent L2 exposure) that would create the conditions for the benefiting the emergence of bilingualism without increasing the risk of any linguistic costs of bilingualism developing concurrently. Naturally, the precise amount of CLIL would vary somewhat depending on the learner, particularly in cases where there has previously been extensive L2 exposure. That said, greater

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awareness of this phenomenon may help teachers meet learners' needs more effectively and be able to provide more detailed information to parents where needed.

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Appendices

Appendix A

Statement	Source
Olen hyvä suomen kielessä | I am good at Finnish	Modelled on statement in Seikkula-Leino (2002)
Olen hyvä englannin kielessä | I am good at English	Modelled on statement in Seikkula-Leino (2002)
Osaan kirjoittaa hyvin suomeksi | I can write well in Finnish	Modelled on statement in Seikkula-Leino (2002)
Osaan kirjoittaa hyvin englanniksi | I can write well in English	Modelled on statement in Seikkula-Leino (2002)
Minulla on hyvä suomen kielen sanavarasto | I have a good vocabulary in Finnish	Generated by the authors of the present paper
Minulla on hyvä englannin kielen sanavarasto | I have a good vocabulary in English	Generated by the authors of the present paper
Osaan hyvin suomen kielioppia | I have a good command of Finnish grammar	Generated by the authors of the present paper
Osaan hyvin englannin kielioppia | I have a good command of English grammar	Generated by the authors of the present paper
Englannin kielen oppitunnit eivät kuulu vahvuuksiini | English language classes are not really one of my strengths	Modelled on statement in Rumlich (2016)
Suomen kielen oppitunnit eivät kuulu vahvuuksiini | Finnish language classes are not really one of my strengths	Modelled on statement in Rumlich (2016)
Yleensä opin asiat nopeasti englanninkielisillä oppitunneilla | I usually learn things quickly in classes taught in English	Modelled on statement in Rumlich (2016)
Yleensä opin asiat nopeasti suomenkielisillä oppitunneilla | I usually learn things quickly in classes taught in Finnish	Modelled on statement in Rumlich (2016)
Englanninkieliset oppitunnit ovat mielestäni vaikeita | I find classes taught in English to be difficult	Modelled on statement in Rumlich (2016)
Suomenkieliset oppitunnit ovat mielestäni vaikeita | I find classes taught in Finnish to be difficult	Modelled on statement in Rumlich (2016)

Statement	Source
Luokkatoverini pärjäävät paljon paremmin kuin minä englanninkielisillä oppitunneilla | My classmates are much better than I am in classes taught in English	Modelled on statement in Rumlich (2016)
Luokkatoverini pärjäävät paljon paremmin kuin minä suomenkielisillä oppitunneilla | My classmates are much better than I am in classes taught in Finnish	Modelled on statement in Rumlich (2016)

Appendix B

Item n.º	Category	English	Finnish
1	General	Caterpillar	Perhostoukka
2	General	Doorknob	Ovenkahva
3	General	Light switch	Valokytkin
4	General	Kite	Leija
5	Tools	Pliers	Pihdit
6	Tools	Wrench	Jakoavain
7	Tools	Nut	Mutteri
8	Tools	Screw	Ruuvi
9	Mathematics	Cylinder	Ympyrälieriö
10	Mathematics	Trapezoid	Nelikulmio
11	Mathematics	Hexagon	Kuusikulmio
12	Mathematics	Pentagon	Viisikulmio

Appendix C

Name	I am good at Finnish	I am good at English	I can write well in Finnish	I can write well in English	I have a good vocabulary in Finnish	I have a good vocabulary in English	I have a good command of Finnish grammar	I have a good command of English grammar	English language classes are not really one of my strengths	Finnish language classes are not really one of my strengths	I usually learn things quickly in classes taught in English	I usually learn things quickly in classes taught in Finnish	I find classes taught in English to be difficult	I find classes taught in Finnish to be difficult	My classmates are much better than I am in classes taught in English	My classmates are much better than I am in classes taught in Finnish
Jenni (non-CLIL)	4	4	4	4	5	4	4	4	2	4	4	4	2	4	2	1
Sanna (non-CLIL)	5	4	5	4	5	4	5	4	2	2	4	4	2	2	3	2
Milja (CLIL)	5	5	5	5	5	5	4	4	1	2	5	3	1	2	1	2
Jari (CLIL)	5	5	5	5	5	5	5	5	1	2	5	4	1	2	1	3