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Abstract:	This study investigated primary students' perceptions of Content and Language Integrated Learning (CLIL) Natural Science and Social Sciences and variations in perceptions by individual and social factors. The sample comprised 524 Spanish-speaking students aged 9 to 13 years from bilingual Spanish-English schools in Andalusia (Spain). The study obtained two measures, namely one of satisfaction with CLIL and one of perception of CLIL linguistic difficulty, and investigated the relationships between them and with individual and social factors. The findings indicate that, on average, the participants' satisfaction with CLIL is relatively high and that they do not find it particularly challenging from a linguistic point of view. However, around 20% of the participants experienced mild to severe difficulty regarding the language of instruction. A moderate to strong relationship was found between CLIL satisfaction and linguistic difficulty, and these were both statistically associated with mother's level of education, availability of help with homework at home, and relatives' use of English at work. These findings suggest that socioeconomic status factors are associated with primary students' perceptions of CLIL and may underlie their success and continuation in CLIL secondary education. It is argued that investment in language support is needed for the most disadvantaged students.

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This study investigated primary students' perceptions of Content and Language Integrated Learning (CLIL) Natural Science and Social Sciences and variations in perceptions by individual and social factors. The sample comprised 524 Spanish-speaking students aged 9 to 13 years from bilingual Spanish-English schools in Andalusia (Spain). The study obtained two measures, namely one of satisfaction with CLIL and one of perception of CLIL linguistic difficulty, and investigated the relationships between them and with individual and social factors. The findings indicate that, on average, the participants' satisfaction with CLIL is relatively high and that they do not find it particularly challenging from a linguistic point of view. However, around 20% of the participants experienced mild to severe difficulty regarding the language of instruction. A moderate to strong relationship was found between CLIL satisfaction and linguistic difficulty, and these were both statistically associated with mother's level of education, availability of help with homework at home, and relatives' use of English at work. These findings suggest that socioeconomic status factors are associated with primary students' perceptions of CLIL and may underlie their success and continuation in CLIL secondary education. It is argued that investment in language support is needed for the most disadvantaged students.

Keywords: Content and Language Integrated Learning; bilingual programme; students' perceptions; students' satisfaction; linguistic difficulty; primary education; SES factors

Introduction

The field of Content and Language Integrated Learning (CLIL) is currently attracting intense research interest that runs parallel to the substantive expansion of bilingual schooling, particularly throughout Europe. Research in the context of primary education has not been as extensive as in other levels of education (Massler 2012; Pladevall-

Ballester 2015), despite the fact that in certain areas the number of primary bilingual schools is rapidly growing. This is certainly the case in the Autonomous Community of Andalusia (Spain), with a population of over 8 million, where the education administration estimates that 651 public primary schools will be bilingual by 2020 (CEJA 2016a).

A review of the literature reveals that there is a paucity of studies on how students interpret CLIL and experience the CLIL programme (e.g., Coyle 2013; Dalton-Puffer and Smit 2013), which is particularly striking in the area of primary students' perceptions of CLIL and CLIL initiatives (Massler 2012; Pladevall-Ballester 2015). Additionally, only a few studies on CLIL in primary education investigate specific individual, social or contextual factors that impinge on perceptions and interpretations. Besides the intrinsic interest, this focus of research can also throw some light on potential factors influencing the students' and/or parents' choice of programme–bilingual or mainstream–when they move on to secondary education. At this level, despite claims that the bilingual programme is essentially egalitarian (CEJA 2016a; Lorenzo, Casal, and Moore 2009), suggestions of initial selection and even exclusion (Bruton 2011) and evidence of a *de facto* student selectivity have been obtained (Broca 2016).

Following this reasoning, this study set out to investigate primary students' perceptions of CLIL and how these perceptions vary according to individual and social factors. The study is set in Andalusia, Spain, where an ambitious bilingual/CLIL programme is currently being implemented and still expanding.

Literature review

As already mentioned, the current lack of systematic studies in primary contexts is especially remarkable in the area of students' perspectives. It is also noteworthy that

studies on primary students' perceptions of CLIL report a predominantly positive view of this approach to bilingual education (e.g., Czura and Anklewicz 2018; Emmanouilidou, Laskaridou, and Mattheoudakis 2016; Massler 2012; Pladevall-Ballester 2015; Yassin et al. 2009). However, as Yassin et al. (2009) conceded, problems faced by learners in CLIL situations have not attracted much research attention. As convincingly discussed (e.g., Bruton, 2011a; Seikkula-Leino, 2007), conceptually complex contents are arguably more difficult to understand and learn when they are taught in a foreign language.

Yassin et al. (2009) explored how students' language proficiency levels impinge on their perceptions of the teaching of Science in English in Malaysia. They concluded that learners (Year 4 students from 16 state primary schools) with non-limited English proficiency (NLEP) had significantly more favourable attitudes than those who had limited English proficiency (LEP). However, both groups reported experiencing similar problems while using English. This may also be interpreted as an indication that the language academic proficiency necessary for CLIL Science essentially differs from that which is typically measured by tests such as the one used to identify learners as LEP and NLEP pupils. No interaction effect of group and gender was found.

Massler (2012) carried out a study with students aged between 6 and 10 years in six state primary schools in Germany. The results indicated that the overwhelming majority of the students liked the CLIL modules and supported the teaching of topics in English. However, 14% of the students in 2008 and 21% in 2009 did not like learning subjects in English. Approximately 22% of the 2008 school year cohort and 21% of the 2009 one reported either not understanding much or understanding almost nothing of the content taught in the CLIL modules. Student interviews corroborated the finding that subjects in a foreign language posed a strong demand for students.

Pladevall-Ballester's (2015) study is one of the few attempts to investigate primary pupils' perceptions of a CLIL initiative in the Spanish context, although this was situated within a wider study of stakeholders' perspectives in the first year of a CLIL implementation process. She explored fifth graders' (10-11 years old) interpretations of a first year CLIL programme in five state-funded private primary schools in Catalonia where one hour per week of Science (in three schools) and of Arts and Crafts (in the other two schools) were taught in English. Most of the students claimed that they enjoyed CLIL. Those who were dissatisfied mentioned the difficulty they encountered in trying to understand the teacher or the concepts. Students in arts schools seemed to enjoy doing CLIL more than those in science schools, with a difference of almost 10 percentage points. Attitudes towards CLIL and perceptions of difficulty seemed to be closely linked. Children who declared that they did not like CLIL also concomitantly mentioned the difficulty they encountered in understanding the teacher or the content. Concerning the perception of difficulty in Science lessons–operationalised as linguistic rather than cognitive difficulty–around 30% of the children found them 'quite difficult' while 57.14% reported that they found the classes 'quite easy'. Speaking in English and asking questions were the linguistic activities that the children found most difficult –57.14% and 47.40% of the children claimed having problems with them respectively. Understanding the teacher was the area in which they encountered fewer problems, although over 30% of the sample reported experiencing problems there.

Otwinowska (2013) and Otwinowska and Foryś (2017) examined an elite private primary school in Poland where three CLIL Science/Mathematics modules were administered throughout each semester. Otwinowska (2013) investigated the differences between learners aged 10 (Grade 4) and 11 (Grade 5) years in terms of their

understandings and perceptions of the CLIL experience in CLIL Science and Mathematics. Both age groups strongly agreed that CLIL was advantageous for their future and that it was efficient for English learning. However, younger learners reported a less enthusiastic stance towards learning content through English. According to comments expressed by the students in Grade 4, the type of language used in the CLIL lessons were particularly difficult. Significant differences were identified concerning their interest in reading interesting information in English and speaking in English in CLIL lessons, with as many as 31% of the youngest learners–10% more than in the older Grade 5 group–displaying negative attitudes towards CLIL. In a later study, Otwinowska and Foryś (2017) found that students were appreciative of the concurrent learning of language and content. Some resented the CLIL lessons, a circumstance that was attributed to language deficiency and cognitive overload by the researchers. Total Negativity–a measure of the number of times each pupil referred to language problems, cognitive overload, boredom, and/or negative attitudes–was experienced significantly more often than positivity in both CLIL Science and Mathematics classes. The study also involved students completing a questionnaire on Intellectual Helplessness to find out whether students felt threatened and helpless in the context of CLIL. The results indicated that participants experienced medium levels of IH in CLIL Science and Mathematics. The IH scores for CLIL Science and Maths yielded high and significant correlations. Additional results showed that more instances of emotional negativity or English problems experienced during CLIL modules resulted in the learners feeling more intellectually helpless. Contrary to expectations, term grades in English, a measure of Basic Interpersonal Communication Skills (BICS) (Cummins, 1979), were found not to predict the levels of IH in CLIL modules of either Science or Mathematics (p. 472). This was interpreted by the researchers as evidence that the informal interactions,

everyday language use, and context-embedded situations typical of English lessons differ from the Cognitive Academic Language Proficiency (CALP) (Cummins, 1979) required for acquiring knowledge in the cognitive complex, abstract, and context-reduced communicative situations in CLIL initiatives. The danger that the difficulty posed by the language of instruction may negatively impinge on the learners' grasping of content in CLIL contexts led the researchers to conclude that 'younger learners of lower language proficiency may not always benefit from learning demanding content in a foreign language' (p. 474). Thus, they suggested that insufficient language proficiency may seriously impair content learning, which is in line with conclusions from previous studies (Zydatiß 2012; Bruton 2013). It can be argued that differentiating students' problems with language from problems with content is not always possible. However, when analysing students' comments, Otwinowska (2013, 219) found evidence of 'pupils' problems with understanding the content, but predominantly the type of language used'. Pupils with positive attitudes towards the teacher and the subject also mentioned experiencing difficulty, which, according to the researcher, was indicative that for children whose proficiency level is not high enough, CLIL lessons posed too great a demand. Otwinowska and Foryś (2017, 468) also interpreted students' observations of difficulty as 'signs of proficiency gap and cognitive overload'. Otwinowska (2013) found that Grade 5 students made fewer comments on difficulty in terms of the level of English than Grade 4 students, which was interpreted by the researcher in terms of cognitive readiness, wherein older learners were more cognitively mature and ready for complex and abstract tasks and CALP.

Calderón Jurado and Morilla García (2018) investigated the attitudes towards CLIL among children aged 8 to 10 years in two schools with different degrees of CLIL provision located in Córdoba (Andalusia, Spain). Almost three quarters of the overall

sample reported that they supported the inclusion of NSc and SSc in the bilingual programme while almost 14% reported otherwise. Most participants seemed to acknowledge the benefit they obtained from learning science subjects through English. The intensity of the CLIL programme seemed to have had some impact on the learners' attitudes as students from the only CLIL sciences school reported having less favourable attitudes towards CLIL than their counterparts in the other school.

Among the literature on teaching and learning content through a foreign or second language, PE is one of the subjects, in addition to NSc and SSc, that has comparatively received more research attention (Emmanouilidou, Laskaridou, and Mattheoudakis 2016; García-Calvo, Banegas and Salaberri 2019; Ó Ceallaigh, Ní Mhurchú, and Ní Chróinín 2017).

Emmanouilidou, Laskaridou, and Mattheoudakis (2016) examined the perceptions of second graders aged 7 to 8 years in Greece who received CLIL lessons for one of the four 45-minute sessions of the PE curriculum per week. Although an overwhelming majority of children either indicated that they always understood the English used (50%) or that they did so in most cases (46%), 25% reported that they found it difficult. The authors suggested that these students' limited understanding of the language may explain this result.

Ó Ceallaigh, Ní Mhurchú, and Ní Chróinín (2017) focused on the experiences of learners aged 9 and 10 years as they participated in a unit of CLIL PE (4-8 lessons) through the medium of the Irish language (L2) in English-medium primary schools. Students valued the experience as very positive, appreciated the combination of PE and Irish language learning, and were willing to continue with this approach to PE teaching in the future.

García-Calvo, Banegas and Salaberri (2019) also found this overall satisfaction with CLIL PE in Spain. Grade 5 students (10-11 years) were more satisfied than their older peers in the next grade. No significant differences by gender were found.

Research considering the role of socioeconomic status (SES) in CLIL education has mostly focused on establishing connections between SES factors and educational achievement. In the context of primary education, contradictory evidence has been obtained. Some studies conclude that content learning of CLIL students is not attributable to their SES background (Madrid and Barrios 2018; Rascón and Bretones 2018). However, a greater number of studies have found a connection between parental SES and CLIL students' subject matter learning (Anghel, Cabrales, and Carro 2016; Fernández-Sanjurjo, Arias Blanco, and Fernández-Costales 2018; Fernández-Sanjurjo, Fernández-Costales, and Arias Blanco 2017; Martínez Agudo 2020). In comparison to studies investigating the links between SES factors and educational achievement, there are far fewer studies exploring associations of SES factors with CLIL perceptions, and these are limited to parental perceptions (Barrios 2019; Ráez-Padilla 2108). Barrios (2019) concluded that parental educational attainment had an effect on parents' perceptions of the bilingual programme and on its impact on student learning. Satisfaction with the programme was the highest among the lowest educated parents, who were the least concerned about the potentially adverse effect on their children's content learning. To our knowledge, no study has so far examined the association between students' perceptions of CLIL and factors related to the student's social background, including SES and other family variables.

To sum up, studies on primary students' perceptions report a largely positive view of CLIL (e.g., Czura and Anklewicz 2018; Emmanouilidou, Laskaridou, and Mattheoudakis 2016; Massler 2012; Ó Ceallaigh, Ní Mhurchú, and Ní Chróinín 2017;

Pladevall-Ballester 2015). However, most of the available research so far has almost uniformly concluded that some primary CLIL students face considerable difficulty when learning in a foreign language (e.g., Emmanouilidou, Laskaridou, and Mattheoudakis 2016; Pladevall-Ballester 2015; Yassin et al. 2009). Research in primary contexts has also documented that primary CLIL has aroused negative reactions and even emotional discomfort in some contexts and students. Researchers tend to relate such reactions to a language competence deficit (Otwinowska 2013; Otwinowska and Foryś 2017). As to factors related to students' perceptions of CLIL, some studies have focused on gender, year group and subject content (e.g., Emmanouilidou, Laskaridou, and Mattheoudakis 2016; García-Calvo, Banegas and Salaberri 2019; Ó Ceallaigh, Ní Mhurchú, and Ní Chróinín 2017; Otwinowska 2013; Yassin et al. 2009). Gender does not seem to play a role in perceptions of CLIL (García-Calvo, Banegas and Salaberri 2019; Yassin et al. 2009). Concerning differences by age group, contradictory evidence has been found (García-Calvo, Banegas and Salaberri 2019; Otwinowska 2013). Notwithstanding, research on factors associated with primary students' perceptions is extremely limited. It needs to be noted that CLIL 'comes in a wide range of shapes and sizes' (Smit, 2008, p. 296) and realisations of CLIL, along with other factors such as school types, teachers' preparation for CLIL teaching, education systems, etc., make it unwise to extrapolate research findings to contexts in which these factors are markedly different. With this in mind, our study intends to contribute to the research in and understanding of primary CLIL perceptions and factors associated with them.

The study

Study aim and research questions

This study aimed to explore primary students' perceptions of CLIL and the role of individual and social factors in how learners perceive CLIL. With these purposes in mind, we first measured satisfaction with CLIL and CLIL linguistic difficulty. Then, we investigated the relationship between them, as well as the links between each of these two variables and age, sex, mother's education level, availability of support with English within the family context, and relatives' use of English at work. More specifically, this study addressed the following research questions (RQ):

RQ1: How satisfied are primary school children with CLIL Natural Science (NSc) and Social Sciences (SSc)?

RQ2: How do they find CLIL in terms of linguistic difficulty?

RQ3: How do satisfaction with CLIL and CLIL linguistic difficulty relate to each other?

RQ4: Are the following factors associated with their satisfaction and perception of CLIL linguistic difficulty: sex, age, mother's education level, support with English at home and relatives' use of English at work?

Context

Seven state primary schools participated in the study. They represented urban areas (n = 3), periurban areas (n = 2), and small towns (n = 2) in the Andalusian provinces of Málaga and Granada. Only bilingual schools that did not offer the mainstream, non-bilingual programme were selected. This circumstance reduces the possibility that factors such as parents' choice, school selection, family background or social class can determine access to the bilingual programme. During data collection, five schools were in the sixth year of implementation of the bilingual programme while

two were in their fifth year. The seven schools served students mainly from low- to middle-income backgrounds.

It is mandatory for bilingual schools in Andalusia to teach between 50% and 100% of the subjects of NSc and SSc through a foreign language (CEJA, 2016b). Depending on the school, other subjects, typically Music, PE, and/or Arts Education, are also partly or fully taught in a foreign language.

Emails were sent to schools explaining the objectives and the procedure of the study. All the schools that were contacted agreed to participate in the study. In return, each school received an individual report with the descriptive data obtained from their students. Permission was obtained from the headteachers of each school to distribute the questionnaire. Participants were informed about the goals and procedures of the study by their class teachers before data collection. Participation was anonymous and voluntary. On the day of data collection class teachers asked their students if they gave their explicit consent to participate in the study. Those who decided not to participate were asked to read a book a draw a picture while their classmates were completing the questionnaire.

The Andalusian education administration adopted CLIL as the teaching approach for its bilingual programme (CEJA 2016a). Contextualised, communicative language teaching, primacy of the oral language, constructivist learning principles, heuristic, active, task- and student-centred methods and use of ICT resources are among the core methodological features of CLIL (Ball, Kelly, and Clegg 2015). However, studies conducted in this region raised concerns about discrepancies between policy and practice affecting this programme (Barrios and Milla Lara 2018; Cabezas Cabello 2010). As this study does not include observational data, no information is available on the practical realisation of CLIL in the schools that participated in the study.

Participants

A total of 524 students aged 9 to 13 years (M = 10.71; SD = 0.821; Mo = 11) (see Table 1 for more information on their ages) participated in this study. Owing to established measures to ensure confidentiality, no information could be obtained from five schools concerning sex distribution. In the remaining two, 158 (51.1%) were males and 151 (48.9%) females.

[Table 1 near here]

Instrument

A questionnaire written in Spanish–the mother tongue of the vast majority of the participants–was used to collect data (see Appendix). The sociodemographic section generated the information reported above. The section intended to tap into perceptions of CLIL linguistic difficulty was adapted from Pladevell-Ballester (2015). Students were asked to react to six statements concerning difficulty when performing different linguistic activities in English during their Social Sciences (SSc) and Natural Science (NSc) lessons on a three-point Likert-type scale (ranging from Never or Always never to Always or Almost always). Cronbach's alpha was calculated as a measure of instrument reliability and was found to be .834, which indicates a good internal consistency of the six items.

Students were presented with 10 statements concerning CLIL NSc and SSc learning and teaching (contentment, general difficulty, preference over NSc and SSc learning and teaching in Spanish, enjoyment and anxiety in NSc and SSc lessons in English) (see Appendix). Responses to these items were provided on a dichotomous (yes/no) scale.

Four experts in foreign language teaching to young learners and three primary school teachers were consulted during the questionnaire design process. They all agreed

that the questionnaire was suitable for the study. Their suggestions and feedback on the content and on the wording of the items were considered and changes were made to it accordingly. The modified questionnaire was then piloted with three groups of students in the last three years of primary education. They were instructed to freely ask the researcher who attended the session for a clarification on the items. The students' queries were later analysed and two minor changes in the wording of two items were introduced to avoid any ambiguity. The Cronbach's alpha for internal consistency of these items was found to be .790, which is well above the acceptable threshold of. 70 (Nunnally 1978).

The final questionnaire was administered by one of the researchers during school time after obtaining permission from the participating school boards or the headteachers to conduct the study. Queries on understanding the items were clarified on the spot.

Data analysis

A measure of satisfaction with CLIL NSc and SSc was calculated by adding all positive (i.e. *yes*) responses to items in the corresponding section. Item values were reverse coded if applicable (items number 11, 12, and 16) so that higher scores reflected higher degrees of satisfaction. As mentioned above, the study participants were asked to indicate how frequently they experienced difficulty when performing six language activity types in English in CLIL SSc and NSc lessons on a three-point scale. The measure for student perceived CLIL linguistic difficulty was obtained by assigning a value to each of the three anchors in the Likert-type scale (Never or almost never = 0; Sometimes = 1; Always or almost always = 2) of the corresponding section and then adding up the values of the six items. Higher scores reflect higher degrees of difficulty.

Descriptive statistics (frequency, percentage, mean, mode, and standard deviation) were calculated for the data. Group comparisons were carried out using the Mann-Whitney test as the Kolomogorov–Smirnov test showed a non-normal distribution of the measures of satisfaction with CLIL and perceived CLIL difficulty from the entire group and from all the subgroups. Effect sizes were calculated as Rosenthal's *r* (Rosenthal 1991). Spearman's correlation was used to find out about the relationship between these factors: mother's education level, support with English at home, and relatives' use of English at work. The IBM SPSS 26 statistical package was used for the analysis.

Results

RQ1: How satisfied are primary school children with CLIL NSc and SSc?

Overall, satisfaction with CLIL NSc and SSc among the primary student participants in the study was relatively high, with a mean value of 7.124 (*minimum* = 0; *maximum* = 10; *M* = 7.12; *SD* = 2.527; *Mo* = 10). As many as 63.93% of the participants (*n* = 335) reached a satisfaction score between 7 and 10; of those, 38.36% (*n* = 201) scored between 9 and 10. A non-negligible proportion of the sample (17.37%) scored less than 5 in this measure. This means that, on average, 4 to 5 in a 25-student class–typical student number in an Andalusian primary school–were unsatisfied with CLIL NSc and SSc instruction.

RQ2: How do participants find CLIL in terms of linguistic difficulty?

Results indicated that participants did not find CLIL NSc and SSc particularly difficult, with a mean value of 4.429 (*minimum* = 0; *maximum* = 12; *M* = 4.43; *SD* = 3.16; *Mo* = 4). As many as 43.70% of the participants (*n* = 229) obtained a difficulty score of 3 (out

of 12) or lower. These data, however, should not overshadow the fact that a relatively high proportion of children encounter linguistic difficulty in CLIL NSc and SSc. Almost 20% of the sample (n = 102) scored 8 to 12 in this measure. This means that, on average, 5 children in a 25-student class perceive mild to severe difficulty with CLIL NSc and SSc in connection with the language of instruction.

When it comes to perception of linguistic difficulty in specific language activities in the CLIL NSc and SSc lessons (Fig. 1), it is somewhat surprising that the highest percentage of students never or almost never had difficulty with writing. It may be the case that teachers are aware of the complexity of the writing processes and they facilitate the writing tasks using scaffolding strategies such as models, frames, etc., that the activities are purposefully simple or that students interpreted writing as copying or writing at word or sentence level rather than whole texts. These speculations should be substantiated by further research. Understanding the teacher's explanations was the activity with the lowest percentage of students finding it difficult always or almost always, which may be because of the use of interactional modifications and scaffolding during teacher-student interaction. The percentage of students who perceived difficulty in all other activities always or almost always was strikingly similar (on average, approximately 16% of the sample).

[Figure 1 near here]

RQ3: How do satisfaction with CLIL and CLIL linguistic difficulty relate to each other?

As data were non-normally distributed, the Spearman Rho coefficient was calculated to assess the correlation between perceived CLIL linguistic difficulty and satisfaction with CLIL NSc and SSc. A significant negative correlation (r_s (522) = -.48 p <.001) was

found, and indicates a moderate to strong relationship (Dancey and Reidy 2007) between satisfaction and difficulty. This suggests that in the case of NSc and SSc, around 23% of the variance in satisfaction with CLIL may be related to the perception of CLIL linguistic difficulty, which is undoubtedly a finding worthy of further research.

RQ4: Are the following factors associated with the participants' satisfaction and perception of CLIL linguistic difficulty: sex, age, mother's education level, support with English at home and relatives' use of English at work?

Age

Students were divided into two age groups: 9- and 10-year-olds and 11- to 13-year-olds. Scores for satisfaction with CLIL NSc and SSc were higher for younger students and the difference was statistically significant. No significant difference was found concerning perceived CLIL linguistic difficulty between both age groups (Table 2).

[Table 2 near here]

Gender

There was no statistically significant difference between boys and girls in satisfaction with CLIL and in perceived CLIL linguistic difficulty scores (Table 3).

[Table 3 near here]

Mother's education level

Children who declared that their mothers had a university education scored higher in satisfaction with CLIL NSc and SSc than those who declared that their mothers did not have university education. The difference between the two groups was statistically significant. Scores in CLIL linguistic difficulty were higher for children who declared

that their mothers did not have a university education; the difference between the two groups was statistically significant (Table 4).

[Table 4 near here]

Availability of help with homework at home

Satisfaction with CLIL NSc and SSc significantly differed between participants who could get help with homework in these subjects at home and those who could not get this help. Children who declared that support with homework was not available at home scored higher in perception of CLIL linguistic difficulty and the difference between the two groups was statistically significant (Table 5).

[Table 5 near here]

Relatives' use of English at work

There was a statistically significant difference in satisfaction with CLIL NSc and SSc between primary CLIL students who declared that their relatives used English at work and those who declared that their relatives did not, with the former group scoring higher in this measure. Children who declared that their relatives used English at work scored lower in perception of CLIL linguistic difficulty than those who declared that they did not use English and the difference was statistically significant (Table 6).

[Table 6 near here]

Discussion

Our study showed that satisfaction with CLIL NSc and SSc among most of the participants was relatively high. Although studies of student satisfaction with CLIL are nor directly comparable due to the different research methodology used, dissatisfaction with CLIL seems to be lower than that obtained by Otwinowska (2013), who found that 31% of the 10-year-olds and 21% of the 11-year-olds interviewed showed negative

attitudes towards CLIL lessons. Our findings concerning satisfaction with CLIL appear to be more in line with those obtained by Pladevall-Ballester (2015), as 76.62% of the students in the science schools claimed that they liked doing CLIL quite a lot or a lot. The reasons for a somewhat lower level of satisfaction in our study may be manifold. Some of these may be the intensity of the CLIL instruction–50 to 100% of the instruction is in the foreign language in Andalusian bilingual schools–versus the one-hour weekly CLIL instruction in the case of schools in Pladevall-Ballester's study (2015), the greater complexity of the contents, namely natural and social science topics, the broader age spans and socioeconomic status contexts covered by our study, and the longer period that the students in our study had been experiencing CLIL for. Nevertheless, further research is necessary to confirm these speculations.

Concerning the relatively high proportion of students perceiving linguistic difficulty, our results are generally in line with those of previous studies that have also attested to the difficulty that some students claim to encounter in CLIL contexts (Emmanouilidou, Laskaridou, and Mattheoudakis 2016; Massler, 2012; Otwinowska 2013; Otwinowska and Foryś 2017). It is also true that we must not assume that the percentage of students experiencing difficulty with CLIL would be significantly lower if NSc and SSc were taught in Spanish. However, to those experiencing learning difficulties in these school subjects and those with limited FL proficiency, the language of instruction may pose an added major difficulty. CLIL teachers failing to fully acknowledge this additional complication can have a profound impact on how they plan and deliver CLIL lessons. As Barrios and Milla Lara (2018, 10) contended,

> It may be the case that subject teachers downplay the role of the foreign language […] in CLIL learning; this, in turn, would have far-reaching consequences in how they scaffold their students' language reception and

production. If teachers do not feel that language plays a crucial role in the understanding and learning of content the students may not get the linguistic support they need.

Our study also attested to the association between CLIL satisfaction and perceived linguistic difficulty, which was also suggested by Pladevall-Ballester (2015).

Our results indicate that age may be a factor associated with satisfaction, although the effect size was low. The complexity of the contents covered by CLIL NSc and SSc may underlie this differential perception of the two age groups in the study.

In line with previous studies (García-Calvo, Banegas and Salaberri 2019; Yassin et al. 2009), this investigation did not find gender to be associated with satisfaction with CLIL. Our study thus reinforces the finding that gender is not a factor in primary student satisfaction with CLIL.

Findings concerning both the perceptions of CLIL satisfaction and CLIL linguistic difficulty seem to indicate that family background, including knowledge and use of English by family members, may have a relevant impact on how children perceive CLIL. A previous study conducted in Andalusia demonstrated that the lowest educated parents held the most favourable attitudes towards CLIL education (Barrios 2019). The findings in the present study suggest that positive parental attitudes towards CLIL may not be sufficient to generate levels of satisfaction with CLIL in their children when compared to those held by children of academically educated parents. As discussed previously, perceived CLIL linguistic difficulty seems to impinge on satisfaction with CLIL. Expected difficulty level of the CLIL programme was the highest scored reason to opt for a non-CLIL stream at a study carried out with secondary students in Seville (Andalusia) (Broca 2016, 326). These students reported that their parents only had some impact on their choice to enter or not enter the CLIL

strand, and that 'they were not significantly influenced by anyone except themselves' (Broca 2016, 325). This means that parents' enthusiasm for bilingual education may, after all, be less of a decisive factor in choosing between a CLIL or non-CLIL stream at the secondary education level than the students' own perceptions and expectations of difficulty. If, as the present study indicates, children of non-academically educated parents find CLIL more linguistically difficult and less gratifying, they will consequently opt for a non-CLIL programme in secondary education in a greater proportion than children of an academically educated background. This highlights the need for the bilingual programme to provide extra in- and out-of-school linguistic support to contribute towards compensating existing socio-educational background differences that may result in *de facto* student selectivity in CLIL secondary education. Bilingual education has officially been heralded by the Andalusian educational administration as an instrument of social cohesion and an essential component of policies aiming at promoting equity and providing equal opportunities for foreign language learning for all students (CEJA 2016a). However, as Barrios (2019) explained,

> Providing 'CLIL for all' may not be a sufficient enough condition to truly benefit children from households of lower SES with bilingual education. If the educational administration is as genuinely committed to social cohesion and equal opportunities as expressed in the rhetoric of political statements, additional -including extracurricular and out of-school- support resources- should be put in place for students from more disadvantaged families as an integral part of the bilingual programme.

Resources to mitigate the perception of CLIL linguistic difficulty that can include reducing the teacher-student ratio in bilingual classes, incorporating language assistants in all lessons, and providing out-of-school English language support can contribute

towards a wider and more representative SES background composition of students in CLIL streams at the secondary education level, where CLIL and non-CLIL strands are available at all public schools offering bilingual education.

SES factors in CLIL education and programmes have also been widely discussed in connection with student selectivity elsewhere (e.g., Dallinger, Jonkmann, and Hollm 2018; Küppers and Trautmann 2013; Paran 2013; Rumlich 2016). Most studies conclude that CLIL education is selective with respect to a number of factors, among which are indicators of SES, including parental education. Our research aligns with these studies and supports the view that SES factors may impinge on student perceptions and have a significant bearing on deciding for or against a CLIL programme that is, in principle, meant to be non-selective and open to all.

Conclusion

This study set out to investigate primary children's perceptions of CLIL NSc and SSc after having experienced the CLIL programme for more than four years. Findings indicate that the participants' average level of satisfaction with CLIL was reasonably high; additionally, the average value of perception of CLIL linguistic difficulty suggests that they do not find it particularly challenging. These results for measures of central tendency should not, however, obscure the fact that around 17% of the sample reported not being satisfied with CLIL and approximately 20% mentioned experiencing mild to severe difficulty with the language of instruction. The study also establishes the relationship between perceptions of CLIL satisfaction and linguistic difficulty and the association of CLIL satisfaction and linguistic difficulty with the mother's level of education, availability of help with homework at home, and relatives' use of English at work. These findings lead to the following conclusions: first, that social factors may be highly influential in the primary students' perceptions of CLIL and may underlie their

success and continuation in CLIL secondary education; and, second, that the administration should invest more in supporting CLIL education for the most disadvantaged in order to foster a truly egalitarian bilingual education.

Several limitations must be acknowledged when interpreting the findings of this study. Firstly, the study has been conducted in a particular educational context encompassing a unique geographical location, SES composition of the sample, and organisation and resourcing of the CLIL programme. Future studies must examine a variety of settings to corroborate our findings. Secondly, it must be acknowledged that yes/no answers for questions 7-16 may not have captured the participants' degrees of satisfaction with the same level of reliability as a Likert-type scale with, for example, 7 to 11 anchor points would have captured. Thirdly, observational data, that could have contributed towards exploring how classroom methodology impacts pupils' perceptions, were not gathered. Finally, research incorporating qualitative methodologies such as focus group in-depth interviews with a subset of the study population is necessary as it can provide additional insights into how children attach meaning to their overall CLIL experience and how they interpret satisfaction with and linguistic difficulties in the CLIL programme.

Notwithstanding the limitations of the findings, our study makes a valuable contribution towards understanding an area of CLIL, namely one involving the perceptions of a school population segment (primary students) that has been neglected so far, and the factors that may influence such perceptions.

Declaration of interest: None

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Appendix

Questionnaire (translated into English from the original Spanish version)

Age: _____ **I am** ☐ a girl ☐ a boy

Your mother's/father's job (what does she/he do?): _____ **Did she/he study at university?** ☐ Yes ☐ No

Your father's/mother's job (what does he/she do?): _____ **Did he/she study at university?** ☐ Yes ☐ No

Do you go to after-school English classes (in an academy, with a private teacher, etc.)? ☐ Yes ☐ No

Can anyone help you at home with your Natural Science and Social Sciences homework in English? ☐ Yes ☐ No

Does any of your relatives use English at work? ☐ Yes ☐ No

In Natural Science and Social Sciences class… *(mark your answer with a cross (x)):*

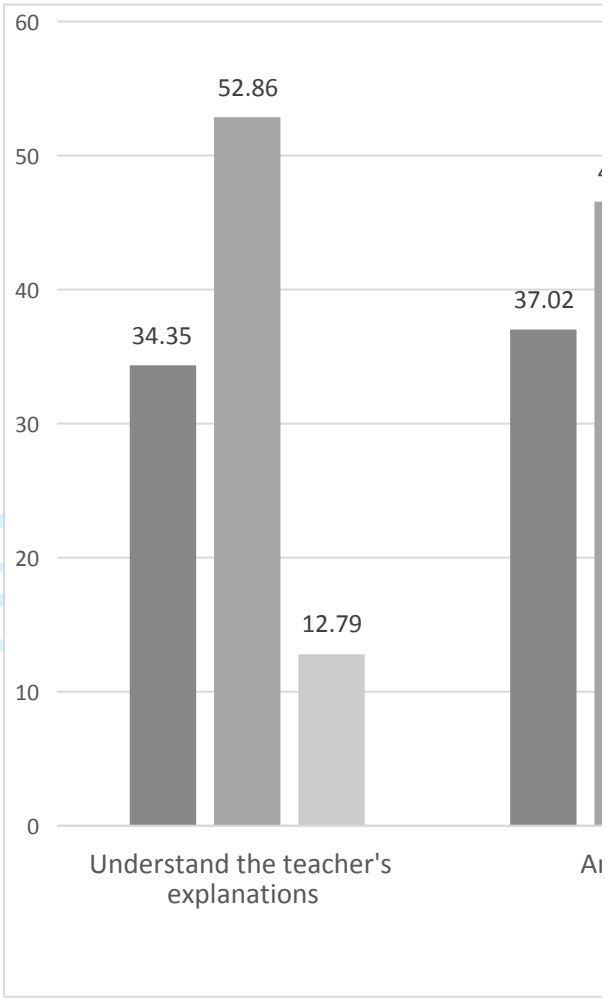
	Never or almost never	**Sometimes**	**Always or almost always**
1. I find it difficult to understand my teacher's explanations in English.			
2. I find it difficult to reply in English.			
3. I find it difficult to ask questions and/or speak in English.			

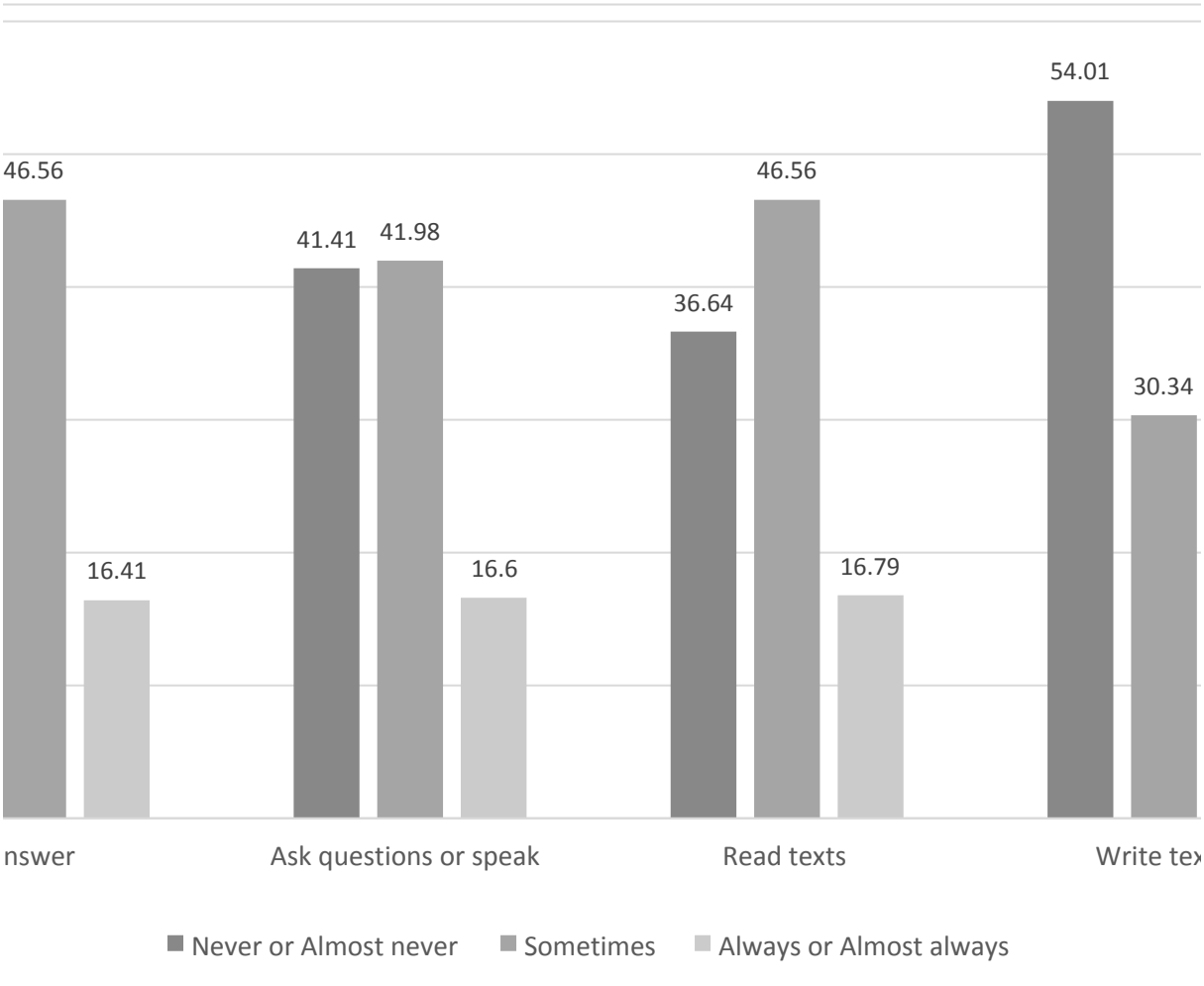
4. I find it difficult to understand texts written in English.			
5. I find it difficult to write in English.			
6. I find it difficult to do the activities and tasks the teacher asks us to do in English.			

Read the following statements and give your opinion *(mark your answer with a cross (x)):*

	No	**Yes**
7. I am glad we learn Natural Science and Social Sciences in English in my school.		
8. I am learning the Natural Science and Social Sciences content I am taught in English quite well.		
9. I find it easy to learn Natural Science and Social Sciences in English.		
10. It is a good idea to learn Natural Science and Social Sciences in English.		
11. I would prefer for Natural Science and Social Sciences to be taught completely in Spanish.		
12. I would learn Natural Science and Social Sciences better if they were taught completely in Spanish.		
13. I learn the contents well in the Natural Science and Social Sciences lessons in English.		
14. In English Natural Science and Social Sciences lessons we do activities and tasks that help us understand the content we are learning better.		
15. I have fun in Natural Science and Social Sciences lessons when I am learning something in English.		
16. I feel anxious in Natural Science and Social Sciences lessons when I am learning something in English.		

	Never or Almost never	Sometimes	Always or Almost always
Understand the teacher's explanations	34.35	52.86	12.79
Answer	37.02	46.56	16.41
Ask questions or speak	41.41	41.98	16.6
Read texts	36.64	46.56	16.79
Write texts	54.01	30.34	15.65
Do homework	48.47	34.92	16.6

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Sometimes
Always or Almost always

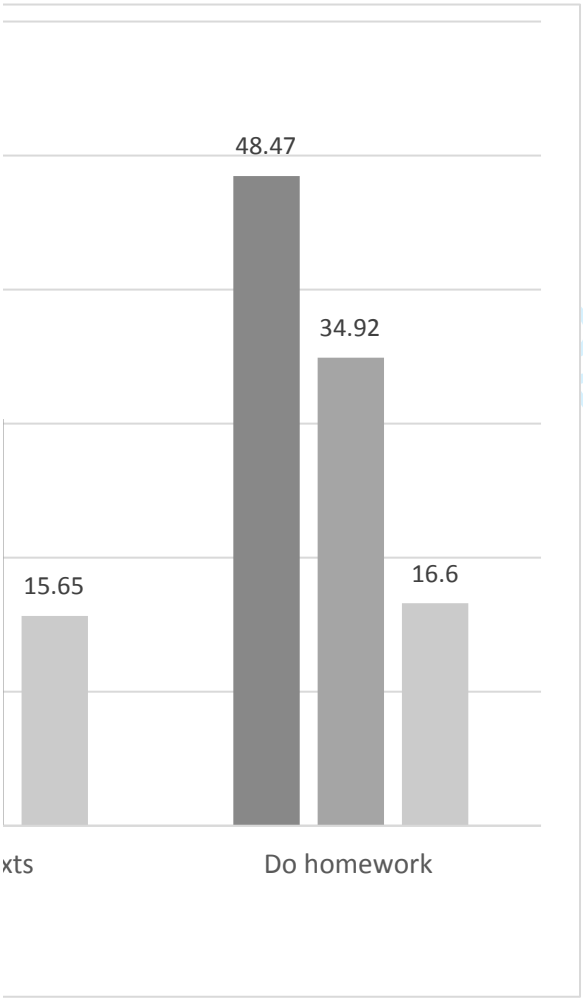

Table 1

Sample Distribution according to Age

Age	Frequency	Percentage
9 years	20	7.6
10 years	149	28.4
11 years	267	51.0
12 years	61	11.6
13 years	7	1.3

Table 2

Results of the Mann-Whitney U Test Age Comparing Groups

Measure	9-10 year-olds (n = 189)				11-13 year-olds (n = 335)				U	p	r
	M	*SD*	*Mdn*	*Average rank*	*M*	*SD*	*Mdn*	*Average rank*			
Satisfaction with CLIL	7.58	2.39	8	290.15	6.87	2.57	7	246.90	26431.500	**.002**	.139
CLIL linguistic difficulty	4.59	3.39	4	266.57	4.34	3.02	4	260.20	30888.000	.642	-

Table 3

Results of the Mann-Whitney U Test Comparing Gender Groups

Measure	Males (n = 158)				Females (n = 151)				U	p	r
	M	*SD*	*Mdn*	*Average rank*	*M*	*SD*	*Mdn*	*Average rank*			
Satisfaction with CLIL	7.06	2.46	7	151.12	7.20	2.64	8	159.06	11315.500	.430	-
CLIL linguistic difficulty	4.75	3.19	5	152.09	5.04	3.52	5	158.05	11469.000	.556	-

Table 4

Results of the Mann-Whitney U Test Comparing Groups According to Mother's Education Level

Measure	Non-university (n = 369)				University (n = 155)				U	p	r
	M	*SD*	*Mdn*	*Average rank*	*M*	*SD*	*Mdn*	*Average rank*			
Satisfaction with CLIL	6.89	2.55	8	247.32	7.68	2.39	8	298.65	22994.500	**<.001**	.16
CLIL linguistic difficulty	4.77	3.07	4	280.45	3.62	3.21	3	219.78	91259.500	**<.001**	.18

Table 5

Results of the Mann-Whitney U Test Comparing Groups According to Availability of Help with Homework at Home

Measure	No help is available (n = 173)				Help is available (n = 351)				U	p	r
	M	*SD*	*Mdn*	*Average rank*	*M*	*SD*	*Mdn*	*Average rank*			
Satisfaction with CLIL	6.68	2.67	8	237.14	7.35	2.43	7	275.00	25974.000	**.007**	.11
CLIL linguistic difficulty	4.97	3.29	3	286.11	4.18	3.06	5	250.86	26276.500	**.012**	.09

Table 6

Results of the Mann-Whitney U Test Comparing Groups According to Relatives' Use of English at Work

Measure	Relatives do not use English at work				Relatives use English at work				*U*	*p*	*r*
	M	*SD*	*Mdn*	*Average rank*	*M*	*SD*	*Mdn*	*Average rank*			
Satisfaction with CLIL	6.93	2.62	7	251.71	7.40	2.37	8	277.76	29997.500	**.05**	.09
CLIL linguistic difficulty	4.80	3.25	4	279.58	3.90	2.94	3	238.34	28066.500	**.002**	.13