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PAI: Effectiveness of bilingual education in diverse learning environments

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Abstract

In the globalized society of the 21st century, learning English as the L2 has become a need rather than an option, which has increased the demand for bilingual education from a very early age. However, are bilingual programmes effective for students with Special Education Needs (SEN)?

This paper aims to approach the reality of primary education classrooms to discover if the English Learning Program (PAI), has positive results both for the learning of content and the learning of the L2 in educational environments where students are diverse linguistically, cognitively and personally focusing on its effectiveness and its motivation potential for students with SEN.

The instruments used were content, language and motivation tests of students with and without SEN of 1st and 5th grade of primary school, as well as students', teachers' and school management's questionnaires. Results indicated a general improvement in the case of 1st grade in the content tests, whereas in 5th grade both students with and without SEN obtained low averages. Regarding motivation data, in 1st grade, pupils with SEN were half a point under the average of students without SEN, while in 5th motivational averages were similar.

Keywords: Bilingualism; CLIL; Special Education Needs; PAI; L2.

Resumen

En la sociedad globalizada del XXI, el aprendizaje de inglés como lengua extranjera se ha convertido en una necesidad más que en una opción, lo que ha incrementado la demanda de la educación bilingüe desde edades muy tempranas. Sin embargo, ¿son los programas bilingües eficaces para el alumnado con Necesidades Educativas Especiales (NEAE)?

El objetivo del presente trabajo es acercarse a la realidad de las aulas de Educación Primaria para intentar descubrir si el Programa de Aprendizaje en Inglés (PAI) tiene resultados positivos en el aprendizaje de contenidos y de la lengua extranjera en entornos educativos donde el alumnado es diverso lingüística, cognitiva y personalmente, centrándose en su eficacia y potencial de motivación para el alumnado con NEAE.

Los instrumentos utilizados fueron pruebas de contenido, lengua y motivación en alumnado de 1º y 5º de Primaria con y sin NEAE, así como cuestionarios de alumnado, profesorado y dirección del centro. Los resultados indicaron una mejora general en el caso de 1º de Primaria en las pruebas de contenido, mientras que en 5º el alumnado con y sin NEAE obtuvo promedios bajos. En cuanto a los datos motivacionales, en 1º, el alumnado con NEAE estuvo

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medio punto por debajo de la media sin NEAE, mientras que en 5^o las medias fueron similares.

Palabras clave: Bilingüismo; AICLE; Necesidades Educativas Especiales; PAI; L2.

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INTRODUCCIÓN

En pleno siglo XXI, donde el evidente proceso de globalización y la mezcla de lenguas y culturas está en su punto más culminante, la educación bilingüe se ha convertido en una necesidad a nivel mundial. El aprendizaje de una segunda lengua no solo es primordial en cuanto al futuro laboral de las personas pues se ha convertido en un requisito en la mayoría de puestos de trabajo, sino que tiene una gran cantidad de beneficios tanto a nivel cognitivo como social y emocional. Por ello, en España, desde hace más de una década se han implementado programas destinados a la enseñanza bilingüe, con tres idiomas encabezando la lista; inglés, francés y alemán, además de los propios en el caso de las regiones bilingües de la geografía española. No obstante, el inglés es, por excelencia, la principal lengua extranjera, por lo que los planes de inmersión lingüística, generalmente temprana, con el inglés como lengua vehicular son cada vez más populares en las instituciones educativas del país, tanto públicas como concertadas y privadas.

En la Comunidad Foral de Navarra, el Programa de Aprendizaje en Inglés (PAI) es el plan de inmersión lingüística temprana principal, en el que diversas asignaturas se imparten en la lengua inglesa. No obstante, otras necesidades como las educativas han emergido a la par que la educación bilingüe, por lo que actualmente nos encontramos en una realidad caracterizada por la diversidad cognitiva, lingüística y personal del alumnado que se concentra en clases impartidas en una lengua diferente a la materna. Así pues, se nos plantea la siguiente cuestión: ¿Es beneficiosa la educación bilingüe para todo el alumnado o tal vez generamos más dificultades en aquellas personas que tienen Necesidades Educativas Especiales? Para intentar responder a esta pregunta, se investigan, analizan y discuten las diferentes variables y dimensiones de la metodología AICLE (Aprendizaje Integrado de Contenidos y Lenguas Extranjeras) en base a dos grupos de diferentes edades: 1º y 5º de Educación Primaria.

En el presente trabajo, se realiza una revisión teórica acerca del concepto y tipos de bilingüismo de acuerdo a diferentes autores. Asimismo se explica la educación bilingüe en España y en la Comunidad Foral de Navarra, principalmente del inglés en base a la metodología AICLE. Por último, se presentan los diferentes tipos de Necesidades Específicas de Apoyo Educativo (NEAE) y los estudios que analizan el alumnado con NEAE en contextos de educación bilingüe.

En segundo lugar, se realiza una recogida de datos a través de varios instrumentos en las asignaturas impartidas en inglés, tales como exámenes de contenido de antes y después de estudiar un tema, termómetros diarios de motivación y cuestionarios destinados al alumnado de los cursos analizados, profesorado y centro. Todos ellos son analizados y discutidos para dar una respuesta justificada a las preguntas de investigación formuladas.

JUSTIFICACIÓN

La elección del tema se realizó en base intereses personales, ya que el presente trabajo comprende las dos menciones en las que estoy especializada: inglés y Pedagogía Terapéutica.

Como alumna del Programa Internacional de Educación Primaria con mención en inglés, quería que mi Trabajo de Fin de Grado estuviera orientado a la enseñanza de la lengua inglesa, de manera que pudiera llevar a cabo determinadas prácticas con el fin de observar si el aprendizaje de la lengua extranjera era fructífero o no. Sin embargo, al estar matriculada en una segunda mención relacionada con la educación de alumnado con Necesidades Específicas de Educación Especial (NEAE), decidí encaminar mi trabajo hacia la enseñanza del inglés en realidades con diversidad educativa.

Asimismo, la elección de la temática de mi TFG estuvo motivada por tres de los cuatro Objetivos del Desarrollo Sostenible 2030 propuestos por la ONU, entorno a los cuales girará el presente trabajo: salud y bienestar, educación de calidad y reducción de las desigualdades.

GOALS

The main goal of the present work is to find out whether bilingual education is effective in diverse learning environments or not, specifically, it focuses on students with Special Education Needs (SEN) in two different years: 1st and 5th.

The specific goals of this research were:

- To find out if bilingual education contributes to content learning in children with SEN.
- To find out if bilingual education contributes to the learning of the L2 in children with SEN.
- To find out if bilingual education promotes learning motivation in children with SEN.

1. LITERATURE REVIEW

1.1. Concept of bilingualism

Before deepening into the concept of bilingualism, L1 and L2 acquisition should be analysed. According to Lieberman (1969), L1 or the mother tongue is defined by the United Nations as “the language usually spoken in the individual’s home in their early childhood, although not necessarily used by them at present” (p.291). It can be identified according to the following criteria established by Skutnabb-Kangas (1981): origin, competence, function, identification and internal and external principles (see Table 1).

Table 1. *Criteria for identifying the mother tongue.*

Origin	The language(s) one learnt first
Competence	The language(s) one knows best
Function	The language(s) one uses most
Internal	The language(s) one identifies with
External	The language(s) others identify one with

L2 or second language implies learning another language different from the native one, which has been previously learnt.

According to Bloomfield (1933), bilingualism refers to the ability to manage two different languages as native speakers do. Other authors such as Haugen (1953) show less strict criteria when defining this concept since he considers a bilingual person the one who can use complete and meaningful expressions in two languages. Similarly, Weinreich (1953) establishes that bilingualism implies using two languages alternatively, while Macnamara (1967) defines bilingualism as the capacity to develop just one of the competencies (reading, speaking, listening or writing) in a second language.

On their part, Harding and Riley (1998) specify the concept more, supporting that bilingualism implies mastering two languages but in different contexts, where one or the other linguistic system might be required according to the situation, thus, understanding that a speaker might always be more competent in one of the languages than in the other.

Finding a common definition for bilingualism can be challenging, as the concept has evolved over time, starting from a general perspective that later was specified to be once again broadened. Nevertheless, there is one common element in all definitions: bilingualism is the ability to speak two languages, either in bilingual regions, social settings or at school. Indeed, it should be emphasized that the L2 can also be acquired in educational institutions, a key element in the present work.

1.2. Types of bilingualism

Bilingualism classifications usually go hand in hand with the complexity of defining the term itself, since there could be as many definitions as bilingual dimensions, either cognitive, social, linguistic or developmental ones. According to Hammers and Blanc (1983), there can be five types of categorizations of this phenomenon (see Table 2).

Table 2. *Classification and types of bilingualism.*

Variables	Types	
Age of acquisition	Early bilingualism	Simultaneous bilingualism
		Sequential bilingualism
		Bilingualism in adolescence
		Bilingualism in adulthood
		Balanced bilingualism
Competence in languages		Dominant bilingualism
		Compound bilingualism
Relationship between language and thought		Coordinate bilingualism
		Additive bilingualism
Influence of L1 on L2		Subtractive bilingualism
		Egalitarian bilingualism
Social status of languages		Unequal bilingualism

The first one is related to the age of acquisition and can be classified into early bilingualism (0-10 years old), bilingualism in adolescence (10-17) or adulthood (18 and upwards). Here, the L2 can be learnt simultaneously, that is, at the same time, or sequentially, where the L2 is acquired after the L1.

The second classification is related to the competence in the languages, where bilingualism can be divided into balanced or dominant. Balanced bilingualism occurs when the speaker is equally proficient in both target languages. On the contrary, those referred to as dominant bilinguals master one of the two languages (generally their L1) at the expense of the other.

In the third place, according to Weinreich (1953), bilingualism can also be identified as compound versus coordinate, considering the properties of how two or more linguistic codes are organized and stored by individuals. Compound bilingualism is the one that has two sets of linguistic codes for just one cognitive representation. In other words, it has one system of

meaning for words in either L1 or L2 (see Fig. 1). On their part, coordinated bilinguals have two systems of meaning for words (Moradi, 2014).

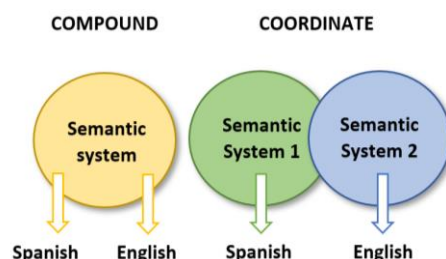


Figure 1. *Compound and coordinate bilingualism.*

In the fourth place, depending on how the L2 affects the retention of the first one, there can be two different types of bilingualism (Lambert, 1974). We consider additive bilinguals those people who can improve their L2 at the same time as adding value to their L1. The other type is called subtractive bilingualism and it happens when the L1 is affected by the acquisition of the L2.

Finally, as Hagège (1996) states, the last distinction can be made between egalitarian and unequal bilingualism, depending on the social status in which each language is positioned within society. Therefore, the former means that L1 and L2 occupy the same position, since the relation between both languages is egalitarian, whereas in subordinate bilingualism the linguistic codes of L2 are supposed to be interpreted and understood using L1.

Besides, language immersion models must be mentioned, where generally the L2 is a means of instruction, as it is based on the idea that language is acquired subconsciously. However, the L1 is not replaced or damaged because of the L2. In this model, every student begins with the same level of language knowledge. As can be seen in Table 3, Baker (2001) categorises them according to two variables: age and time.

Table 3. *Baker’s categorization of Immersion Bilingual Education.*

Age	Early immersion	Students start learning the L2 during kindergarten or early childhood stage.
	Middle immersion	Students start learning the L2 at 9-10 years old.
	Late immersion	Students start learning the L2 in secondary school.
	Total immersion	The whole schedule is taught in L2.

	Partial immersion	School varies between L1 and L2, usually teaching half of the subjects in each language.
Time	Two-way immersion	Students from the minority language are integrated into class together with majority language pupils to promote bilingual proficiency for both groups.

1.3. Bilingualism and education

Bilingual education is usually understood as the use of more than one language during the teaching process at some point in the educational career of a pupil, where the language is no longer the matter of study itself but acts as the means by which other subject's content is taught. Although the concept has had the most impact on education in the last few years, bilingual education can be dated back to Roman and Greek times, when students were expected to read in both languages (Cummins & Corson, 1997).

It has been a highly controversial concept in certain countries over the years, especially in the United States, where it was believed that bilingual programs were responsible for the maintenance of an economic underclass and the increment of social and cultural fragmentation. In 1981, President Reagan claimed that bilingual education was "absolutely wrong and against American concepts", and, for his part, in 1991, the historian Arthur Schlesinger blamed bilingualism for shutting doors (Cummins & Corson, 1997).

Nevertheless, learning an L2 might help in either cognitive, social, labour an emotional fields, as well as strengthen the L1. In its white paper on education and training (1995), the European Union stands for the early learning of an L2, since it benefits both languages and makes their acquisition easier. As we have seen, many factors may have an impact on L2 acquisition. Family and school are considered to be the quintessential fields where deeper linguistic learning is conceived although the acquisition process will be different in each situation.

1.3.1. Bilingualism in Spain

Spain is a multilingual nation, as it is recognised in the third article of the Spanish Constitution (1978), by stating that Castilian is as official as the other languages present in the country. That is, Spain is a country with a highly rich language heritage, where Castilian cohabitates with several other languages: Catalan, Galician and Basque are the most important ones (see Figure 2).



Figure 2. *The languages of the Iberian Peninsula.* Adapted from *Origen y evolución de la lengua española*, (Aparicio, 2016).

When the Spanish Constitution was established in 1978, all these languages were considered national languages and were introduced in the educational field. The teaching of Catalan started in the academic year 1978-1979, while Galician and Basque had to wait a year to be implemented.

Regarding English teaching, schools adopted bilingual programs in 1996, the year when the Ministry of Education and the British Council agreed to implement a bilingual curriculum in 42 Primary schools all over Spain, establishing that 40% of the school hours had to be taught in the L2 (Aparicio, 2009). Nevertheless, calling the students who have attended this program “bilinguals” is highly debatable, since the number of hours devoted to the language is low, sometimes not more than 30%.

According to the Educative Organic Law 2/2006, 3rd of March, one of the main objectives in primary education is “to acquire the basic communicative competence in at least one foreign language that will enable students to express and understand simple messages and to cope with everyday situations”. Similarly, the Organic Law 8/2013, 8th of December, promotes plurilingualism and intensifies its efforts for the students to be fluent in, at least, one foreign language. One way of supporting that aim has been to implement bilingual programs, to ensure unconscious learning and fluency in an L2 language by teaching subjects in that language.

1.3.2. *Bilingual programmes in Navarre*

Due to the bilingualism present in Navarre, the educational system provides different models to offer a wider choice that fits with the languages spoken (see Table 4).

Table 4. *Linguistic models in the schooling in Navarre.*

A MODEL	Teaching in Spanish and Basque as a subject in every educational stage.
B MODEL	Both Basque and Spanish are used in the teaching process.

D MODEL	Teaching in Basque and Spanish as a subject.
G MODEL	Teaching in Spanish and no presence of Basque.

Depending on the Basque regulation of each zone, each child will have a different educational option inside the public Educational System. According to the Regional Law 159/1988, 19th of May, through which the incorporation and use of the Basque language are regulated in non-university education in Navarre, the following linguistic models are allowed in the different zones (see Table 5).

Table 5. *Linguistic models allowed according to the linguistic zones in Navarre.*

BASQUE-ZONE	A, B and D models
MIX ZONE	A, B, D and G models
NO-BASQUE-ZONE	A, D and G models

However, during the last decade, there has been an increment of language immersion programs different from Basque, either in English, French or even German, but always with a predominance of the former.

The first bilingual educational program (British program) was implemented in 1996 together with the Ministry of Education in Spain, based on the educational model the British Council School in Madrid. It has an integrated Spanish-British curriculum focused on educating students to be able to develop competencies in both languages and their respective cultures. Nowadays, in Navarre, there are 6 early childhood and primary education institutions and 4 secondary schools with this model.

Later, a new bilingual programme called Learning Programme in English (Programa de Aprendizaje en Inglés - PAI) was implemented in 2011-2012. This programme consisted in having certain subjects taught in English, and nowadays there are around 20 public schools with this model.

Following the Regional Law 110/2011, 12th of July, through which the basic aspects of the English Learning Programs in the public early childhood and primary education schools of Navarre are regulated, a key point in this work is attention to diversity. It is established that the educational schools have to:

- Develop the required measures to ensure quality education for the students' diversity
- In primary education, to provide reinforcements in English, Spanish or Basque, offering as many resources as needed.

1.4. Bilingualism and Special Education Needs

Special education is understood as “an education designed to facilitate the learning of individuals who, for a wide variety of reasons, require additional support and adaptive pedagogical methods to participate and meet learning objectives in an educational programme” (UNESCO, 2019, p.85). It seeks to guarantee that students with special needs can develop the required capacities and the educational objectives established to achieve their autonomy, enabling them to integrate successfully into both social and working spheres. Therefore, bilingualism also concerns pupils with SEN, who cannot be left behind.

Special education covers Specific Educational Support Needs, which include six groups (Figure 3): SEN, specific learning difficulties, Attention and Deficit Hyperactive Disorder, special personal and school conditions, late entry into the educational system and high intellectual capacities.

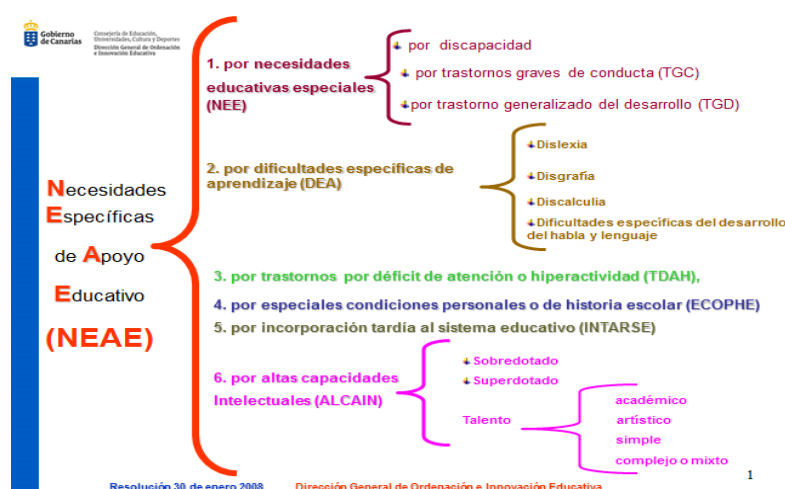


Figure 3. Classification for Special Education Needs.

Adapted from *Resolución del 30 de enero de 2008 de la Dirección General de Ordenación e Innovación Educativa* (Gobierno de Canarias, 2006).

According to the Canary Government (2006), there are three further subcategories in the first group (SEN) (see Figure 3):

- In the case of disabilities, we find:
 - Sensory impairments, because of damage or lack of sensory functions, especially hearing and vision.
 - Physical impairments, because of damage or functional alteration of one or more parts of the body, which causes low mobility or immobility.
 - Cognitive impairments, because of deficiencies or alterations which cause several limitations in the mental functions. Bilingual education in children with intellectual impairment is not always advisable, especially in those cases where the disability is severe, since they hardly master the required L1 competence level that serves

as the basis for the L2 acquisition. Nevertheless, cognitive factors are not the only element influencing bilingualism, so motivational or sociological ones may also be decisive in this process, always starting from the premise that each person is different (Arregi, 1997).

- Disruptive Behaviour Disorders (DBD) can be defined as the set of behaviours that children and adolescents develop against authority and social rules, thus, disturbing coexistence. There are two main types:
 - Oppositional defiant disorder (ODD)
 - Conduct disorder (CD)

Bilingual education in this group might be difficult as the motivational field tends to be highly affected, due to their opposition towards authority, which, in this case, is represented by teachers (Arregi, 1997).

- Autism spectrum can be defined as a “developmental disorder diagnosed based on early-emerging social and communication impairments and rigid and repetitive patterns of behaviour and interests” (Frith & Happé, 2005). As concluded by Garrido et al. (2021) after having analysed certain studies, bilingualism in students who are diagnosed with autism spectrum is considered to be really positive in their development and does not manifest to be an additional barrier in either language.

Regarding the second group, specific learning disabilities can be defined as a set of conditions with a language processing deficit that is present either in the spoken or written form, which results in difficulty to comprehend, speak, read, write, or do mathematical calculations (Ministry of Social Justice and Empowerment, 2018). Thus, four types are differentiated:

- Dyslexia is the most common learning disorder and refers to the difficulty in word decoding, which influences the performance and development of reading fluency (Snowling, 2013). Two types of dyslexia can be differentiated depending on the affected route: phonological and visual. The former corresponds to the poor performance of the phonological route and hinders the grapheme-phoneme conversion. On its part, visual dyslexia is the consequence of the poor operation of the lexical route, so global word reading is affected.
- Dysgraphia, which affects the writing ability that, despite instruction, is illegible and chaotic.
- Dyscalculia, generally refers to the difficulty in understanding mathematical operations.
- Speech disabilities, which refer to the difficulty in creating the speech sounds required for communication.

According to Arregi (1997), if there are difficulties in the acquisition of the L1, there will also be problems in the L2 learning process, but not teaching an L2 does not benefit L1 development either. Thus, children with speech disabilities can develop bilingualism without negative effects in any language, although individual support and curricular adaptations may be required along the process.

Thirdly, ADHD is one of the most usual neurodevelopmental disorders, which starts in early childhood and causes inattention, impulsive behaviours and excessive activity. According to Mor et al. (2015), bilingualism could become an extra burden for children with ADHD, damaging their executive functions.

Fourthly, according to the Canarian Government (2006), a student is considered to belong to the special person and school conditions category when they present a temporal imbalance for, at least, two school years, which is not caused by any disability, ADHD, conduct disorders or specific learning difficulties but because of sociocultural reasons:

- An inappropriate familiar environment with a lack of sufficient educative means
- Imbalanced schooling caused by absenteeism
- Health issues

In this case, bilingualism is as achievable as for children without any diagnosis or personal problems. However, they might have difficulties as irregular attendance to school or problems in their environment may cause gaps in the learning process. The required adaptation in these cases has little to do with curricular goals and contents but is focused on attitudes and motivational strategies (Arregi, 1997).

Special needs education is also required for late entry into the educational system when children start their school year late and have problems acquiring the objectives and competencies established for their year. Two measures are implemented to alleviate its consequences: language support and fostering classrooms.

Finally, high intellectual capacities students can be defined as individuals who are capable of performing a wide range of tasks at higher levels than the average.

As stated in the Royal Legislative Decree 1/2013, 29th of November, passing the consolidated text of the General Law of people with disabilities and their social inclusion, those students with SEN have the right to inclusive, quality and free education on an equal basis, and it corresponds to the educative administrations to ensure an inclusive education system in all the levels, as well as lifelong learning.

1.5. Bilingualism and CLIL

Currently, in Spain, bilingual education is defined as the acquisition of an L2 at the same time as curricular contents are learnt, either natural and social sciences, art or mathematics, amongst others. In other words, learning content using Content and Language Integrated Learning (CLIL), an increasingly popular approach. This methodology has a two-fold aim: developing knowledge and competencies from other subjects as well as linguistic competencies in the target language (Suárez, 2005).

CLIL is the foundation on which bilingual and intercultural programmes are based all around Europe, since, thanks to its appropriateness for bilingualism, it has become the driving force for its implementation. CLIL relates to any language and stage, including kindergarten, primary and secondary education, vocational and professional learning, as well as lifelong learning.

Pérez-Cañado (2012) stated that CLIL has a clear effect on language learning outcomes in the L2, which were significantly higher in comparison to conventional language classes. CLIL improves the global communicative competence, including receptive and productive skills, morphology, vocabulary and creativity, so that, as she establishes, “this sort of program seems to make language learning more accessible to all types of achievers” (p.330). Thus, students with SEN are included, and, according to Seikkula-Leino (2005), these children are able to participate more in CLIL programs, as they obtain very positive results. However, this author emphasizes that more resources and greater pedagogical knowledge would be required. Besides, Kalambouka et al. (2007) carried out a meta-analysis where 26 inclusion studies were carried out, examining the impact of inclusion on the academic performance and social development of students without SEN, obtaining neutral or positive results in the 80% of them. Therefore, it is shown that including children with SEN in mainstream education does not have a negative impact on the rest of the pupils’ development. Nevertheless, although several investigators have suggested that CLIL makes bilingual education more accessible to all types of learners and, in this sense, Marsh (2002) even claimed that “egalitarianism has been one success factor because this approach is seen to open doors on languages for a broader range of learners” (p. 10), the implementation of the model all around Europe has shown a very different reality. One of the main concerns related to CLIL discussions is focused on the lack of egalitarianism (Madrid & Perez Cañado, 2018). A significant set of scholars have warned about the level of self-selection in CLIL strands, completely inadequate for attention to diversity (Lorenzo et al., 2009) since CLIL selects only the most intelligent, motivated and linguistically proficient students, leading to a greater disparity, particularly in pupils with SEN.

For CLIL to work, a large number of variables must be taken into account. Nonetheless, teachers are the key factor, and they should have not only linguistic competence but also a

methodological one. Teachers and the school staff together with school management and educational authorities need to be prepared to invest time in the preparation of materials, coordinate with peers, adapt the curriculum and for continuous training. However, for this program to be successful in foreign language attainment, time is an extremely crucial factor: the longer the students benefit from CLIL, the greater the differences with their non-bilingual peers (Pérez-Cañado, 2018). Therefore, the impact of CLIL is especially noticeable at other educational levels, where the differences between the experimental and control groups are more remarkable. For example, Perez Cañado (2012) analysed the efficiency of CLIL programmes in two related studies. The first one worked with 837 students in 5th to 9th grade, whereas the second had 695 participants from 5th to 12th grade. In the former, CLIL learners in all four grades surpassed their non-CLIL peers. The CLIL classes obtained significant differences in fluency, syntactic and lexical complexity, and accuracy in the latter. In fact, 7th and 9th-grade CLIL students obtained similar results to those of foreign language students one or two years older.

2. THE STUDY

2.1. Research questions and justification

This empirical framework was motivated by the persistent question of the effectiveness of bilingual programmes for those students with SEN.

This issue is very present in the educational environment, especially in those teachers who teach different core subjects in the L2 and observe the conflict involved in the transmission of curricular contents through the English language for pupils who have learning difficulties. As a result, the following questions arose:

- Does using a CLIL methodology contribute to the learning of content for children with SEN?
- Does using a CLIL methodology contribute to the learning of the L2 for children with SEN?
- Do bilingual programmes promote SEN pupils' motivation for learning?

2.2. Method

2.2.1. Context

The school where the present investigation was carried out is a catholic state-funded school located in a working-class area. It offers early childhood, primary and secondary education. It has an immigration rate of over 30% and a low socioeconomic index, especially in the lowest grades. The school has a single class per grade and around 290 enrolled students, 60 in early childhood, 150 in primary and 80 in secondary education.

Regarding the linguistic models, the school offers model G complemented with PAI in primary education. French is also taught from a very early age. In childhood education, 30% of the school classes are in English, whereas in primary 9 hours per week are taught in this language (5 hours of English, 2 hours of Science and 2 of Physical Education). Furthermore, students in the 5th grade take part in the "English week" programme.

One of the most important programmes in the school is the BEDA's program, which is a Catholic program where 25 schools from Spain receive instruction for 7 hours per week from a native teacher (either American or British) to develop oral competence. These 7 hours are divided among all the grades, from the 4th year of primary education to the 4th year of secondary education. Each year has one hour with the native teacher.

In terms of the Attention to Diversity Plan, which is a set of strategies, methodologies, resources and measures aimed at ensuring the maximum development and learning of each student, especially those who are diagnosed with SEN, there is a specific department devoted

to analysing and giving counselling to all children. This department is called the guidance department and it is formed by a counsellor, a speech therapist, two teachers with specialization in Therapeutic Pedagogy, the Principal and the Assistant Principal. There are three different ways to derive a student to the guidance department. First, if the student has been attended by the early care assessment team, it contacts the guidance department and transmits the information. Secondly, if the difficulty is detected by the teachers, they contact the counsellor and she assesses the student and transmits the information. And, finally, if the family ask for it.

Broadly, once the kid has been diagnosed, all the relevant data must be published in EDUCA (the computerized system for school information management in Navarre) which must be constantly updated since the Government of Navarre grants resources based on this census. It is also used to calculate the schooling index of each school, which every institution has and measures the level of students with SEN. The more negative the calculation is, the more needs the school has. The mentioned school has an index of -0.81, which is quite high and, as it is negative, the number of children enrolled in early childhood education is 22 instead of 25. Each student has a personal form that is only accessible to the counsellor, the tutor and the involved teachers, where the student's data, diagnosis, diagnosis date, recommendations, individuals and people involved appear. The measures carried out to address SEN are those established by law (Regional Order, 2008), divided into two groups: ordinary measures that do not modify mandatory elements of the curriculum, and extraordinary measures, which modify the access and/or mandatory elements of the curriculum (see Table 6).

Table 6. *Measures to address Special Education Needs.*

	Tutorial action
	Optionality
Ordinary measures	The permanence of one more year in the corresponding level
	Educational support and reinforcement programmes (flexible groups, splitting, support groups, etc.)
	Programmes for the development of the ordinary curriculum
Extraordinary measures	Access curricular adaptation
	Significant curricular adaptation
	The flexibilization in the years or stages

The empirical treatment will be implemented in two different grades to have a broader perspective, as well as to compare two completely different age groups: 1st and 5th grade. As the PAI programme is applied in all primary education, both grades have the same subjects and hours taught in English: Science and Physical Education (P.E.).

2.2.2. Participants

This study focuses on 13 children with SEN, who are in different grades. First, all the participants will be described in general and then the 13 subjects will be described according to the following variables: age, cognitive level, class behaviour, L2 domain and familiar background.

- 1st grade:

In this class, there are 25 students, 6 girls and 19 boys, all of them between 6 and 7 years old. Most of them come from a middle-low socioeconomic background. There are 7 children with SEN.

Of the other 18 subjects, 14 have a good cognitive level, there is one with a possible diagnosis of high capacities, two children with serious school problems since they come from another country, and one possible diagnosis of language disorders. In terms of class behaviour, they are all very active and talkative children, which sometimes makes it difficult to continue with the classes. The overall motivation of the class is very low, most of them are easily distracted and do not care, except for 7 students who always show interest and intervene in the class. Regarding the L2 domain, out of the 18, 9 have a normal English level corresponding to their age, 4 stand out in the language and 5 have many difficulties with the L2. Finally, according to their family context, most of them have a good familiar environment, 5 students have parents who are highly involved in their learning process and 4 have a complex familiar background.

Table 7. *Students with Special Education Needs in 1st grade.*

Students	SEN	Educative measure
Student 1	Expressive language disorder	Speech therapist and school support
Student 2	Absenteeism	Social services
Student 3	Dyslexia	ACI (3 rd grade of early childhood education), speech therapist and school support

Student 4	Intellectual impairment, cleft lip and language disorder	ACS (2 nd grade of early childhood education), speech therapist and school support
Student 5	Serious health conditions (leukaemia) and expressive language disorder	Home education, speech therapist and school support
Student 6	Conduct disorder and expressive language disorder	Speech therapist and school support
Student 7	Expressive language disorder	Speech therapist and school support

Regarding the students with SEN needs (see Table 7):

Student 1 presents a diagnosis of expressive language disorder and does not have a good level of English. Although he is sometimes distracted, he works properly in class and he always does his homework. He is very dependent on the teachers, always asking for help even when he does not need it. He does not have familiar problems.

Student 2 presents a good cognitive level but he has problems in the academic field as he does not tend to come to class (absenteeism) He has been referred to social services. His father died recently and his mother does not speak any Spanish, only Bulgarian, and does not show interest in her son's educational path. He has a lot of psychological problems, he never participates, although he normally knows the answer.

Student 3 was diagnosed with dyslexia, thus, he has an ACI (Individualized Curricular Adaptation) in 3rd grade of early childhood education. However, he works hard in class and at home and, in fact, he reads and writes quite well. He is easily distracted and very talkative. He does not have family conflicts.

Student 4 was diagnosed with a medium cognitive level. Besides, she has a cleft lip and received several surgeries, so she has problems with oral expression and is not able to communicate properly. She is unable to read or write, and only recognises some individual letters. She has an ACS (Significant Curricular Adaptation) since she is working contents of the 2nd grade of early childhood education. She does not understand English, she only knows the numbers until 10. She tries her best in class and pays attention but does not participate because normally she does not understand the contents. Besides, she also has problems at the psychological level since she is adopted and her adoptive mom died at the beginning of the school year. She is very nice and loving to her peers and teachers.

Student 5 was diagnosed with leukaemia two years ago, so he was hospitalized for the whole early childhood education stage, receiving home education during this period. Besides, he presents expressive language disorder. He has a lot of difficulty with English. He does not participate frequently and is usually distracted. He does not have familiar problems.

Student 6 has a conduct disorder and an expressive language disorder. He does not pay attention and ignores teachers' comments. He never participates and is always drawing. He usually has crying or shouting episodes if something does not go as he wanted. He disrupts most of the classes and bothers or even hits his peers. He does not understand English, just a few words. He does not have family conflicts.

Student 7 was diagnosed with an expressive language disorder. He has special difficulties in Spanish and English. However, he tries his best and pays attention, doing always his class and homework. He is very nice to his peers and a very calm child. He is also being observed because of a possible attention disorder. He does not have family issues.

- 5th grade

In this class, there are 24 students, 12 girls and 12 boys, all of them between 10 and 11 years old. There are 6 children with SEN, who will be described in more detail, while the other 18 will be described in general.

Of these 18 subjects, 15 have a good cognitive level, there are two possible diagnoses in high capacities and one in medium cognitive level. In terms of class behaviour, they are all quite calm children who tend not to be disruptive. However, the overall motivation of the class is low, and most of the students are easily distracted and very talkative, except for 5 students who always show interest and intervene in the class. Regarding the L2 domain, out of the 18 children, 10 have a normal English level according to their age, 3 stand out in the language and 5 have great difficulties with the L2. Finally, according to their family context, 8 students do not have problems in the familiar context, 6 have parents who are highly involved in their learning process and 4 have a really complex familiar background.

Table 8. *Students with Special Education Needs in 5th grade.*

Students	SEN	Educative measure
Student 1	Dyslexia	Speech therapist and school support
Student 2	Inattentive ADHD and low intellectual capacity	Speech therapist and school support
Student 3	Dyslexia	ACI, speech therapist and school support

Student 4	Inattentive ADD and literacy delay (dyslexia)	Speech therapist and school support
Student 5	High capacities	No measures
Student 6	Dyslexia	No measures

Regarding the students with SEN (see Table 8):

Student 1 has a twin inside the same classroom. She was diagnosed with dyslexia and she does not understand English, although she tries. She is really shy. At home, she has a highly unstructured family.

Student 2 was diagnosed with inattentive ADHD and low intellectual capacity. However, she always tries her best and believes in herself a lot, thus she works very hard to pass the exams and she is succeeding in them. She is very shy and does not participate, but she pays a lot of attention and always does her classwork and homework. At home, she has a really good situation and her family helps her a lot.

Student 3 was diagnosed with dyslexia and he presents difficulties in certain subjects. He has some problems with English but he participates occasionally. He is shy and does not have familiar conflicts.

Student 4 was diagnosed with inattentive ADD and dyslexia. She is probably the student who has the most difficulties in class, especially lagging in maths, language and English. Nevertheless, she has a positive attitude towards these subjects, and participates in science and P.E. often, even if she does not understand everything. She is very kind to her classmates. She has a good situation at home.

Student 5 was diagnosed with high capacities, especially standing out in the language field. He obtains very good grades and is very motivated in every subject. He is the person who participates most in class, principally in English. He is very talkative and cannot standstill. He is also very nice to his classmates and helps them a lot. He has a good family context.

Student 6 was diagnosed with dyslexia. However, he is highly capable and has a good cognitive level. He does not present many difficulties and participates frequently. He has a normal English level according to his age and is very motivated in these classes. He has a good family environment.

2.2.3. Instruments

There were four instruments used in this study: two content tests, a motivation thermometer, classroom observations and questionnaires.

2.2.3.1. Content tests

To study the effectiveness of CLIL in this school, the same tests were implemented twice as pre-tests and post-tests in paper form in each grade. In the 1st grade ([see Annex 1](#)), there were 5 questions, 3 open-ended and 2 closed ones. Every question measured both content and language, but especially the last one tested English vocabulary. Regarding the 5th-graders' exam ([see Annex 2](#)), there were 7 questions, 5 open-ended questions and 2 closed ones. All of them measured content and language.

These tests were only made for the subject of science since it was the only subject where the content was evaluated through exams. They were made based on previous exams prepared by the science teacher (who was the same in both grades) and based on the content studied in the book.

2.2.3.2. Motivation thermometer

A motivation thermometer on paper was given to each child after every science and P.E. lesson for 3 weeks to collect motivation data. It was based on Al Khalil's (2016) study and it had three closed questions for the 1st-graders ([see Annex 3](#)) and 3 open-ended questions for the 5th-graders ([see Annex 4](#)). Each question measured one of the three types of motivation (Al Khalil, 2016): intrinsic (whether they liked the activity/task or not), extrinsic (usefulness) and motivational strength (the effort perceived).

2.2.3.3. Observation in class

To confirm the data from the previous instrument, the author's observations in each class were registered by noting children's participation, motivation and classwork.

2.2.3.4. Questionnaires

Four questionnaires were completed by students, teachers and the school management, measuring CLIL's three variables: motivation towards the L2, content learning and language learning. Thus, in every questionnaire, the questions were grouped according to those three variables. There was an extra section related to SEN. The main objectives were two: first, to find out if teachers', and students' opinions backed up the content and the observation results, and, secondly, to know their thoughts about the possible influence of external factors on the bilingual programme such as teachers' English level, teachers' training, programme implementation and organization.

- Students' questionnaire

This was the main questionnaire whose aim was to collect information from students with SEN. However, to get a general view, the questionnaire was given to all students in both

grades. In total, there were 49 answers, of which 13 were the object of study ([see Annex 5](#)). They were handed out in paper form with 13 questions: 10 open-ended and 3 closed ones. It was mandatory to answer all of them.

- Teachers' questionnaire

The questionnaire was sent to the teachers of primary education. It was sent via Google form, and it included 14 questions: 9 open-ended and 5 closed ones. All of them were mandatory except the last one, which was a voluntary question where they could reflect on their PAI programme and add some comments about it. All answers were anonymous ([Annex 6](#)).

- School management questionnaire

This questionnaire was sent to the principal and the assistant principal of the mentioned institution. There were 12 questions: 8 open-ended and 4 closed ones. All of the questions were mandatory except the last one, which was voluntary. All the answers were anonymous ([Annex 7](#)).

2.2.4. Procedure

First, the types of instruments that were the most appropriate for collecting the relevant information were decided. Then an informed consent document was drawn and attached to the parents' questionnaire so that it was faster for them to accept and sign it.

Having received the headmistress's approval, she sent them to the teachers, which were open for two weeks, and permitted to take out small groups of 1st-graders to complete the questions, as they were not able to read well. In the case of the older pupils, the questions were explained to them aloud during tutoring time.

Next, the pre-test of science content was done in both grades before the unit started. In the case of the 1st grade, some help was provided as literacy is not fully developed yet, but it was not related to the language or the content. In the 5th grade, only the statements were explained when needed.

Once the pre-test was done, motivational information was collected. During all the Science sessions of the new unit, the behaviour of the children with SEN in both classes was observed by noting how they reacted as well as through the motivation thermometer distributed at the end of each class.

Lastly, after having studied the whole unit in science class, the children were given the post-test, which was the same as the pre-test, so it would be possible to compare if they really learnt with the CLIL methodology. The pre-tests and the post-test were done approximately three weeks apart.

2.2.5. Data analysis

2.2.5.1. Content tests

Regarding the 1st-grade content test, there were 5 questions, each correct one scored 2 points, except for the third one that scored 1 because it was shorter, and for the fourth one, which had a value of 3 as it was longer and more difficult. In the remaining three, since they had four parts, each of them scored 0.5 points ([see Annex 1](#)).

In the case of 5th grade, from the 7 questions, the shorter ones, which were 1, 2, 3 and 7 had a value of one point each, whereas 4, 5 and 6 scored 2, as they were open-ended questions where they had to reflect and explain content terms ([see Annex 2](#)).

Both exams were rated out of 10.

2.2.5.2. Motivation thermometers

Questions were based on a five-point scale ranging from 1 (lowest grade) to 5 (highest grade), evaluating task relevance, task difficulty and task satisfaction. For the 1st grade of primary education, the items were closed questions where they should write just the number ([see Annex 3](#)). In the case of the 5th graders, a minimum of justification was requested ([see Annex 4](#)). Numbers were followed by emojis and colours representing numbers value, in the case of the lowest mark (1), a red sad face was placed near it, whereas in the highest mark (5), there was a green happy face near the number. As there were 3 different questions and we needed a single value, the average score of the three sections was calculated, thus, obtaining a unique number that represented their motivation in the session. Finally, the average score of the sessions was made, in order to obtain the final motivation score in Science and P.E.

2.2.5.3. Questionnaires

- Students' questionnaires

Some answers were given a rating from 1, the worst rate, to 10, the highest. The average was made, as well as a recount of YES or NO responses ([see Annex 5](#)).

- Teacher questionnaires

Some answers were given ratings from 1, the worst rate, to 10, the highest. The average was made, as well as a recount of YES or NO responses ([see Annex 6](#)).

- School management questionnaires

The questions were scored using the rating values, which were from 1 (lowest value) to 10 (the highest). In the same way, some answers were grouped into YES or NO. A recount of these answers was made ([see Annex 7](#)).

2.3. Data results

2.3.1. Content tests

Table 9. *1st-grade pre-test and post-test result.*

	PRE-TEST	POST-TEST
CLASS AVERAGE	4,45	5,37
NO-SEN AVERAGE	4,95	5,45
SEN AVERAGE	2,98	5,17

As can be seen in Table 9, there was an increment in knowledge after having studied the content through CLIL, although the increase in the class average between both tests was not very high, only 0,89 points.

Regarding the questions, there was no improvement in general terms. In fact, in almost all of them, there were as many improvements as worsening cases, except for the last question, where children have clearly done better. In the first question, 6 pupils improved whereas 4 worsened, in the second 11 improved while 8 decreased their marks, in the third question 6 improved whereas 4 worsened and in the fourth question there were 9 cases of improvement and 7 worsening ones.

Regarding students with SEN, it can be seen that their averages were under the averages of students without SEN, especially in the pre-test, which resulted in the lowering of the class average. Their average marks in both tests are shown in Table 10.

Table 10. *Results of Student with SEN in 1st grade of Primary Education.*

	PRE-TEST	POST-TEST
1	1,5	5,5
2	3	6,5
3	3,5	6,25
4	2,75	3,5
5	3,5	2,5
6	4	5
7	4	7

Out of the seven students, six improved considerably their scores comparing the pre-test and the post-test. However, one of them worsened by one point. Besides, almost all of them passed the post-test except for Students 4 and 5.

Table 11. *5th-grade pre-test and post-test results.*

	PRE-TEST	POST-TEST
CLASS AVERAGE	3,21	3,45
NO-SEN AVERAGE	3,26	3,39
SEN AVERAGE	3,06	3,64

As can be seen in Table 11, in terms of the 5th-graders, there was an increment in children's knowledge after having studied the content in the PAI programme. However, there was a minimal improvement in the class average of 0,24 points.

Regarding the questions, it must be mentioned that they all maintained the results obtained in the pre-test, although a clear case of worsening can be observed in question number 3 without apparent explanation, where 14 students worsened their marks by at least 0,25 points. 8 out of the remaining 10 obtained the same result, whereas only 2 improved it. Besides, in question Number 4, only two people obtained a higher score than zero, while nobody answered correctly number 6. Both of them were open questions where concept development was required. In the post-test, 4 people out of 24 obtained a higher score than zero in question number 4 and only 6 in number 6. In both tests, the same 5 people passed the exams.

Regarding students with SEN, there were no significant differences in their averages compared to those of students without SEN. In fact, students with SEN obtained a higher average in the post-test.

Table 12. *Results of students with SEN in 5th grade.*

	PRE-TEST	POST-TEST
1	1,83	2,66
2	1,08	1,41
3	2,49	4,16
4	4,16	4,06
5	5,66	6,91
6	3,16	2,66

As can be seen in Table 12, out of the six students with SEN, four improved their scores comparing the pre-test and the post-test. Nevertheless, Students 4 and 6 worsened their scores, although by less than half a point. Only Student 5, who was diagnosed with High Capacities, passed the exam.

2.3.2. Motivation thermometers and observation in class

2.3.2.1. General results in science and P.E. in 1st grade

Table 13. *Science motivation thermometers' results in 1st grade.*

Classes	1	2	3	4	5	6	Average	Standard deviation
General	3,203	3,253	3,467	3,54	3,546	3,922	3,571	0,224
No SEN	3,259	3,5	3,5	3,625	3,666	4,212	3,7	0,264
SEN	3	2,619	3,38	3,26	3,237	3,555	3,175	0,3

As can be seen in Table 13, the motivation average in the 1st grade of primary education in the subject of science on a scale from 1 to 5 was 3,571 with a standard deviation of 0,224, that is, the results per day were around the average. It should be highlighted that the question with the highest values per class was the first one, which asked about how much they enjoyed the session. In all sessions, students with and without SEN were more motivated than those with SEN, thus their average was higher, especially in the sixth class, where students with SEN were 0.8 points less motivated than those without SEN.

Table 14. *P.E. motivation thermometers' results in 1st grade.*

Classes	1	2	3	4	Average	Standard deviation
General	3,623	4,125	3,84	3,88	3,867	0,206
No-SEN	3,722	4,111	4,12	3,981	4	0,19
SEN	3,266	4,04	3,095	3,62	3,507	0,42

As can be seen in Table 14, the motivation average in the 1st grade of primary education in P.E. on a scale from 1 to 5 was 3,867 with a standard deviation of 0,206. The second class was by far the most motivational for all the students. On the contrary, the very first session was not that encouraging.

It should be remarked that, in almost every session, the second question enquiring about the usefulness of the class gathered the highest values. Students without SEN were more motivated than those with SEN with a 0.5 difference in their average.

2.3.2.2. Individual results in 1st grade

Table 15. *Student 1's motivation results in science and P.E, 1st grade.*

Science

Classes	1	2	3	4	5	6	
Average	2,67	3	5	3,67	2,67	2,67	3,28

P.E.

Classes	1	2	3	4	
Average	3,67	3	1	2,67	2,585

As can be seen in Table 15, Student 1's motivation average in the subject of science was 3,28 points out of 5, which was 0,291 points under the class average, being the third class the most motivating for him. In P.E., his motivational average was 2,585, quite below the class by 1,282 points. His highest score was registered in the first class with 3,67 points, whereas the lowest was in the third one.

Table 16. Student 2's motivation results in science and P.E., 1st grade.

Science							
Classes	1	2	3	4	5	6	
Average	X	3,67	3,67	X	3	3,67	3,5

P.E.

Classes	1	2	3	4	
Average	X	5	3,67	2,67	3,78

As can be observed in Table 16, Student 2 had a motivational rate of 3,5 in science, which was within the class average. Although he missed the first day, his motivation was maintained during most of the days with the same punctuation: 3,67. Only in session 5 dropped 67 tenths. In P.E. his average was 3,78, which almost reached class one. His highest score was registered in class number 2. It must be mentioned that this student rated the first question of each class with a 5, which was aimed at knowing whether children liked or disliked the class.

Table 17. Student 3's motivation results in science and P.E., 1st grade.

Science							
Classes	1	2	3	4	5	6	
Average	3,33	3	1	2,67	3,67	3	2,77

P.E.

Classes	1	2	3	4	
Average	4	4	4	4	4

Student 3 had a motivational average of 2,77 in the subject of science, which was 0,801 points under the average. His highest rate was registered in class number 5 and the lowest in number 3 (see Table 17). Regarding P.E., he obtained an average of 4 which exceeded by 0,133 the class average. It should be highlighted that he rated every session exactly the same.

Table 18. Student 4's motivation results in science and P.E., 1st grade.

Science							
Classes	1	2	3	4	5	6	
Average	2,67	3	5	3,67	2,67	2,67	3,28
P.E.							
Classes	1	2	3	4			
Average	2,67	5	1	5	3,42		

As can be seen in Table 18, the motivational average of Student 4 in the subject of science was 3,28, 0,29 points under the class average. The class where she was the most motivated was the third one. On the contrary, the lowest score was 2,67, which was the most common one. In P.E., she had 3,42, 44 tenths under the class average. The fact that there were extreme values should be noted: the third class had the lowest score on the rate, whereas classes number 2 and 4 had the highest.

Table 19. Student 5's motivation results in science and P.E., 1st grade.

Science							
Classes	1	2	3	4	5	6	
Average	5	4	5	3,67	2,67	2,67	3,83
P.E.							
Classes	1	2	3	4			
Average	3,34	5	5	3,67	4,25		

Student 5 had a motivational average of 3,83 out of 5 points (see Tab. 19). He exceeded the class motivational average by 26 tenths. It should be remarked that in sessions 1 and 3 he scored the highest value, whereas classes 5 and 6 were the least encouraging ones for him. The student's motivation average in P.E. was 4,25, which was 0,383 points over the class average. The classes where he was the most motivated were the second and the third one, where he rated 5 in every question.

Table 20. *Student 6's motivation results in science and P.E., 1st grade.*

Science							
Classes	1	2	3	4	5	6	
Average	X	1,33	3,33	2,33	2,67	X	2,41

P.E.					
Classes	1	2	3	4	
Average	X	3,33	3,666	3	3,33

The motivational average of Student 6 in the subject of science was 2,41, quite under the class average, and 3,33 in P.E., respectively (see Table 20). In both subjects, session 3 was the most motivational for him, rated with a 3,33 and 3,66 out of 5. It must be taken into account that he skipped three sessions.

Table 21. *Student 7's motivation results in science and P.E., 1st grade.*

Science							
Classes	1	2	3	4	5	6	
Average	X	1,34	3,34	2,34	2,67	X	2,42

P.E.					
Classes	1	2	3	4	
Average	X	3,34	3,67	3	3,37

As can be seen in Table 21, Student 7's average was 2,42, which was well below the class average, more precisely, 1,15 points under it. However, it must be mentioned that Student 7 missed two of the six days. His highest score was registered in class number 3. In P.E. his average was 3,37, half a point under the class average. His values were maintained in the session, always between 3 and 4.

In brief, as it has been noted, all the students except number 3 were the most motivated in science's third session, followed by session 2 where Students 2 and 5 were the most engaged. In terms of P.E., it was session 3 the most motivating for Students 3, 5, 6 and 7. On the contrary, in science, classes 5 and 6 were considered by 4 students the least engaging, whereas in P.E. sessions 1 and 3 were least voted as motivating by 3 pupils each. However, there was a common fact in both students with SEN and no SEN: P.E. was the subject where all of them were the most motivated.

2.3.2.3. General result science and P.E. in 5th grade**Table 22.** *Science motivation thermometers' results in 5th grade.*

	Class 1	Class 2	Class 3	Class 4	Class 5	Average	Standard deviation
General	3,802	3,694	3,782	3,826	3,916	3,804	0.08
No SEN	3,784	3,703	3,854	3,740	4,074	3,831	0,23
SEN	3,866	3,666	3,555	4,12	3,444	3,717	0,224

As can be seen in Table 22, in the subject of science, the motivation average in the 5th grade on a scale from 1 to 5 was 3,804 with a negligible standard deviation of 0,08. There was not a significant variation in the sessions' average. Furthermore, in every session, the first question registered the highest values, which assessed whether the students liked or disliked the class. It should be noted that, in this grade, students were asked to justify their scores. Every session, in question number 3, aimed at rating the difficulty of the class, there were at least 8 students who argued that they did not understand the language, whereas two justified their high score by saying they were good at English and understood everything. Around 4 students justified their difficulty by commenting they were distracted and 6 said they liked the classes because they were funny.

Unlike the 1st-graders, students with SEN in the 5th year did not stand out for their poor motivation compared to those pupils without SEN, as they present lower motivation in classes 2, 3 and 5 but higher in 1 and 4. The final average of children with SEN was only 0,114 points under the one without SEN.

Table 23. *P.E. motivation thermometers' results in 5th grade.*

	Class 1	Class 2	Class 3	Average	Standard deviation
General	3,636	4,125	3,621	3,734	0,182
No SEN	4	3,588	3,52	3,703	0,259
SEN	3.77	3.8	3.88	3,817	0,05

As can be seen in Table 23, in the subject of Physical Education, the motivation average in the 5th grade on a scale from 1 to 5 was 3,734 with a standard deviation of 0,182. In general terms, session 2 was the most engaging for the students. Furthermore, in every session, the first question registered the highest values, which assessed whether the students liked or disliked the class.

As students in the 5th grade were requested to give some arguments that justified their scores, some of them were common. In each session, around 20 students said in question number 1 they liked the class because P.E. involved movement and games. This reason was

used by two other people to justify their low marks. In the third question, 9 people said it was difficult because of the techniques volleyball implied, while around 5 children justified their low score arguing they did not understand most of the classes because of the L2.

Surprisingly, the students with SEN were the ones who, in general, were more engaged in this subject, since they scored higher values in two of the three classes. Consequently, pupils with SEN presented a higher average of 0,119 points.

2.3.2.4. Individual results in 5th grade

Table 24. *Students' motivation results in science and P.E., 5th grade.*

Science						
Classes	1	2	3	4	5	
Average	3,67	3,34	3,34	X	3,34	3,42
P.E.						
Classes	1	2	3			
Average	4	3	3,34	3,45		

The motivational average of Student 1 in the subject of science was 3,42 (see Table 24), 0,384 points under the class average. Although she missed one class, her values were maintained in the remaining days. Question number 3 was normally rated with a 3 followed by the same explanation; she did not understand English. Nevertheless, in class number 3, she gave a 4 because she thought she was improving. Regarding P.E., her average was 3,45, which is 0,284 points under the class average. It must be highlighted that this student did not justify her scores based on the English language. Her lowest marks depended on her dislike of the sport and the highest were justified by the games and funny activities.

Table 25. *Student 2's motivation results in science and P.E., 5th grade.*

Science						
Classes	1	2	3	4	5	
Average	4	3,67	4	3,67	4	3,87
P.E.						
Classes	1	2	3			
Average	3	4	4	3,67		

As can be seen in Table 25, Student 2 obtained an average of 3,87 which was within the class average, only exceeding it by 0,066 points. It should be highlighted that, in each

session, she rated the first question, which asked whether they liked or disliked the class, with 5. In terms of her justifications, every time she gave a 3 she argued that English was very difficult and she did not understand the class. Regarding P.E., her average was 3,67, almost within the class average. The average was maintained along with the sessions, standing out in the first class, where the lowest rate was registered. In all the sessions, this student rated question number one with the highest score as she loved the subject because of the exercise and the games. However, in the last question related to the difficulty, the scores were around 2 and 3 because she argued she did not understand the teacher when speaking in English.

Table 26. *Student 3's motivation results in science and P.E., 5th grade.*

Science						
Classes	1	2	3	4	5	
Average	4,34	4	4	4,34	3,67	4,07

P.E.				
Classes	1	2	3	
Average	3	4,67	4,34	4

Student 3 had a motivational average of 4,07 in the subject of science, 26 tenths over the class average (see Table 26). His highest score was registered in classes 1 and 4 with 4,34 points out of 5, whereas the lowest was in the last session, with 3,67. In the first question of each session, he gave a high mark because she considered them very funny, especially when the teacher played videos. Nevertheless, question number 3 normally registered lower values as he argued he did not understand anything in English. The motivational average of Student 4 in P.E. was 4, 0,266 points over the class average. The class where he was the most motivated was the second one. On the contrary, session 1 was the least encouraging one for him. Regarding his comments, he gave higher marks in the first question as he loved Physical Education because of the sport and the games. Nonetheless, his score slightly dropped in question number three, since he argued he did not understand the classes because of the L2.

Table 27. *Student 4's motivation results in science and P.E., 5th grade.*

Science						
Classes	1	2	3	4	5	
Average	3,34	4	2,34	4	3	3,34

P.E.			
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Classes	1	2	3	
Average	5	X	4,34	4,67

As shown in Table 27, the motivational average of Student 4 in the subject of science was 3,34, 0,45 points under the class average. The class where she was the most motivated was the second and the fourth one, where her average was 4 points out of 5. On the contrary, session 3 was the least encouraging one for her, with a 2,34. Regarding her comments, she gave higher marks in the second question aimed at the usefulness of the classes as she thought science content and English would be important for her in the future. However, her score dropped in question number three (difficulty), as she constantly argued that she did not understand the classes because she did not know English. Regarding P.E., her average was 4,67 almost a whole point over the class average. However, it must be taken into account that the student missed the second session. This student was focused on her strengths when explaining her scores, so she gave good marks because of her good abilities in P.E., the sport and the games or because of her improvements, but she did not focus on English as an obstacle.

Table 28. Student 5's motivation results in science and P.E., 5th grade.

Science						
Classes	1	2	3	4	5	
Average	4	3,34	4	4,34	3,34	3,80

P.E.				
Classes	1	2	3	
Average	5	4	4,34	4,45

The motivational average of Student 5 in the subject of science was 3,80 (see Table 28), which is within the class average. The motivational average of Student 5 in the subject of P.E. was 4,45, 0,716 points over the class average. His scores were maintained during the three sessions. It must be remarked on the relationship between his scores and his explanations since he gave a 3 or a 4 because he considered English very easy and understood everything the teacher said, but rarely gave a 5 as he considered he could always improve.

Table 29. Student 6's motivation results in science and P.E., 5th grade.

Science	
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Classes	1	2	3	4	5	
Average	X	3,67	3,67	4,34	3,34	3,75

P.E.					
Classes	1	2	3	4	5
Average	2,67	3,34	3	3	3

Student 6's motivational results can be seen in Table 29. His average was within that of the class, with 3,75 points out of 5. Although he missed the first day, his scores were maintained during the remaining days, except session number 4, which registered the highest value for him. Although he said there were some difficult words in a session, this comment was not repeated in the rest of the classes. In P.E., he had an average of 3, which was well below the class average, more precisely, 74 tenths under it. His highest value was registered in the second class while the lowest was in the first one. Nevertheless, his comments were far from referring to a possible added complication due to the foreign language, as they were based on his dislike of sports.

In brief, as we have seen, 4 out of the 6 pupils thought that session number 4 was the most motivated in the subject of science, followed by session 1 where Students 1, 2 and 3 voted it as the most engaged. In terms of P.E., sessions 1 and 3 were the most motivating for half of the children. On the other hand, in science, session 5 was considered by 4 students the least engaging, whereas in P.E. session 1 was voted as the least motivated by pupils 3, 4 and 6.

2.3.3. Questionnaires

2.3.3.1. Student's questionnaire

- 1st grade of primary education

25 pupils answered this questionnaire, of which 21 had Spanish as their only native language, whereas 4 spoke Spanish together with African, Chinese, English and Catalan. Only 10 students used English in other contexts than the school, 5 of them at home to study and the other 5 at English academies.

Regarding the subjects taught in English (Science and P.E.), 23 students said they liked them, 20 admitted their favourite one was P.E. because of the sport and the games, whereas 2 said they preferred the subject of Science because of nature and 3 could not decide.

Around 15 pupils recognized that what they liked the most in these subjects were the games and TV series teachers played, whereas approximately 8 said they liked the fact of

learning in English. On the contrary, there was an agreement on what they did not like about the subjects taught in the L2: they did not understand English.

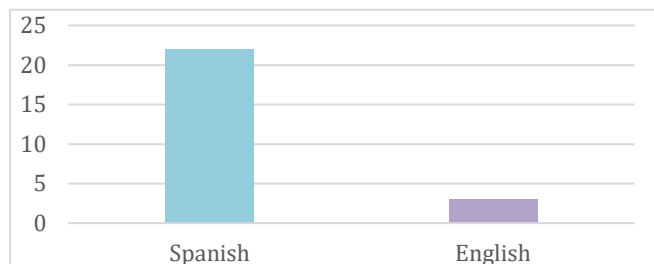


Figure 4. Preferences of subjects' language in 1st grade.

As can be seen in Figure 4, 23 children said they preferred the subjects taught in Spanish as they understood better the classes, while 3 chose English because they liked the language and wanted to learn more.

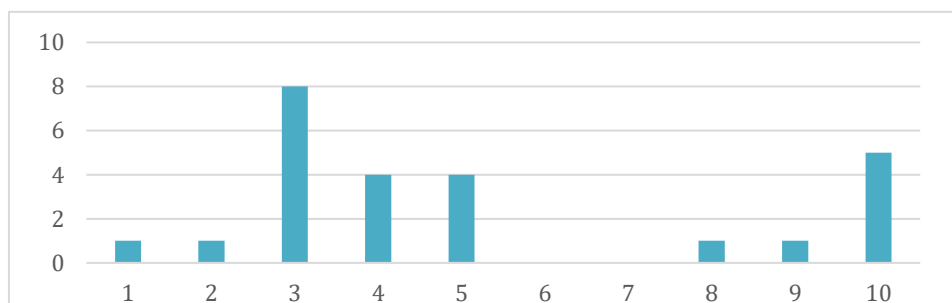


Figure 5. English learned in science in 1st grade.

Figure 5 shows a rating scale from 1 to 10 where children scored how much English they perceived they had learnt thanks to the subject of science. The most repeated value was 3, as 8 pupils used it, followed by 5 people who voted 10. The class average was 5,2. Listening competence was the area where pupils noticed English learning the most, voted by 13 children, although reading (6) and speaking (4) were mentioned too. 2 students said they did not improve any skill. In the same way, 21 out of 25 students said that they could have learnt more if the subject were taught in Spanish.

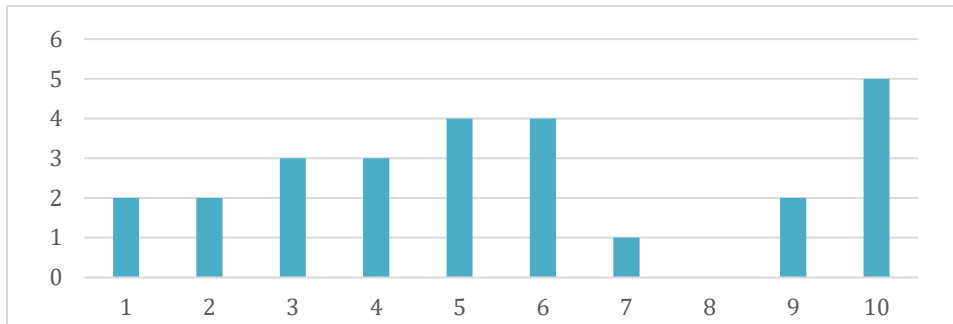


Figure 6. English learned in P.E. in 1st grade.

As can be observed in Figure 6, opinions are more distributed concerning the English learned thanks to P.E., being the 10 the most voted one (5 children) and 8 the least. The media was 5,8.

There was an agreement regarding the most developed competence in the subject as 21 pupils said it was listening, while 2 mentioned speaking and the remaining 2 said they had not improved anything. 18 pupils said they could have learnt more if the subject had been taught in Spanish. Besides, 20 pupils said they would learn more at school if all subjects were taught in their native language, while only 5 said they would not (see Figure 7).

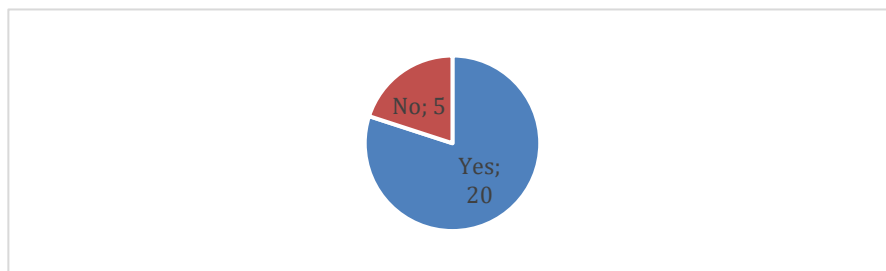


Figure 7. Would you learn more if all the subjects were taught in Spanish?

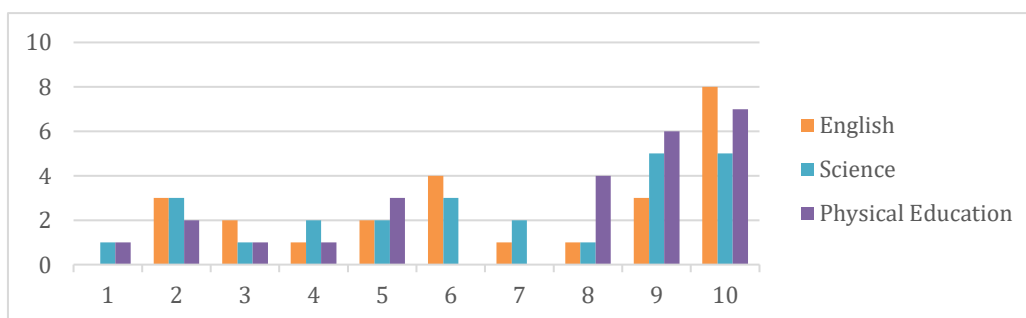


Figure 8. Students' learning level in English-taught subjects.

Figure 8 shows students' perceived learning in English-taught subjects. The most repeated value was 10 in the three subjects. English perceived learning average was 6,88 out

of 10, while science average was 6,76 and P.E. 7,32. Besides, 23 students admitted they could have learnt more in them, of which 12 justified it by recognising they would understand them if the subjects had been in Spanish. Finally, 9 students recognized they had difficulties in class, especially in maths and language for which they received school support. However, three said they needed help in English and it could be solved by giving individualized attention.

Regarding the students diagnosed with SEN, none but Student 6 used English outside the school context, in an English academy. All of them preferred P.E. because of the games and the sport. However, Student 5 liked both and student 4 did not know, as she did not understand anything in English. Just as students without SEN, they all agreed that the best part of the subjects taught in English was playing games and watching TV series, except for Student 1, who liked the fact of learning in the L2. On the contrary, what everyone liked the least was English as the means of communication. In this line, all of them answered they preferred the Spanish subject because they understood the content better.

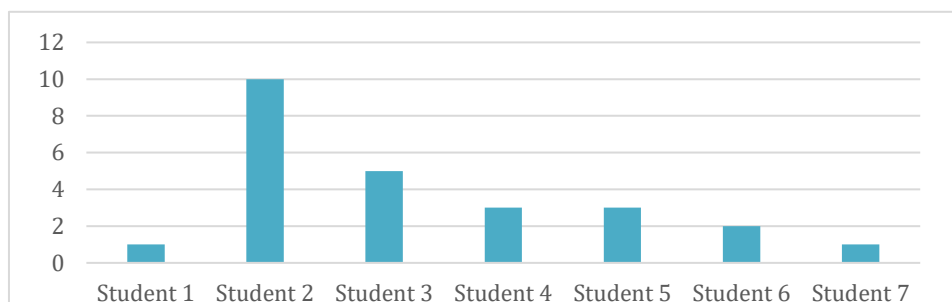


Figure 9. *English learned in science: 1st-graders with SEN.*

As can be seen in Figure 9, only Students 2 and 3 considered they had learnt more than 5 points of English thanks to the subject of science. Besides, Students 1 and 5 said they had improved the most in their listening competence, while 2 and 3 in their speaking. However, Students 4, 6, and 7 felt they had not improved any competence. They all said they could have learnt more if the subject of science were in Spanish.

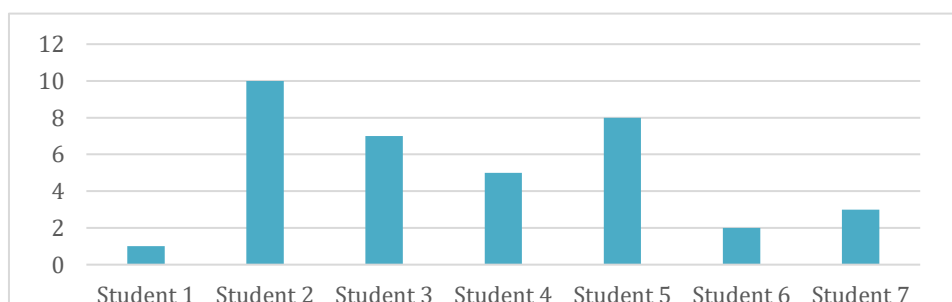


Figure 10. *English learned in P.E.: 1st-graders with SEN.*

Students 2, 3, 4 and 5 said they learnt more than a 5 of English in P.E. (see Figure 10), and they all agreed that the most developed competence was listening, except for Student 1 who said he did not improve anything. Besides, all of them said they could have learned more if the subject had been taught In Spanish. Nevertheless, student 2 said he could not, as he understood English well. All students diagnosed with SEN said they would learn more if all the subjects were in Spanish because the level of difficulty would be much lower.

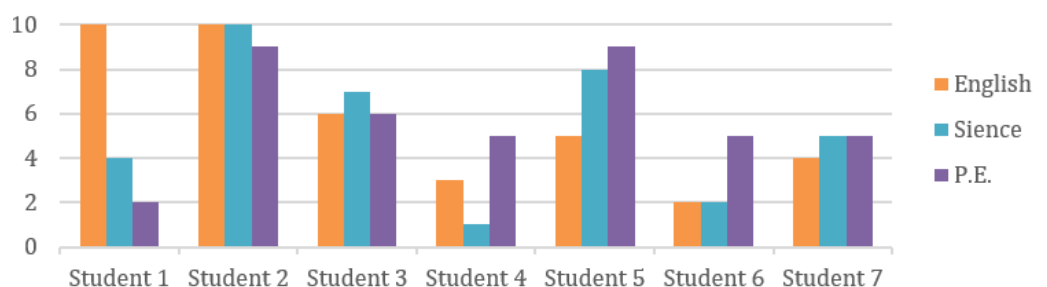


Figure 11. Students' learning level in English-taught subjects: SEN.

In figure 11, it can be seen the perceived learning level in the English-taught subjects of the students diagnosed with SEN. It should be noted the difference between Student 2, who rated every subject with a 10 and Students 4 and 6, with much lower values. Furthermore, they said again they could have learnt more if they had been taught in Spanish.

- 5th grade of primary education

24 students from the 5th grade of Primary Education responded to this questionnaire, all of them having Spanish as their L1. 10 students said they used English outside the school context, principally in English academies (4), at home (3) or even on vacation abroad (3). Regarding those subjects taught in English, all students except one answered they liked them with P.E. being by far the favourite one because of sport and the games; only two students said they liked both equally. Around 6 children recognized that what they liked the most in these subjects were the games and TV series teachers played, whereas 16 said they liked the fact of learning in English. However, they were clearer about what they did not like about them: 20 said they did not understand the teachers when speaking in English while the rest said classes were boring because of the homework or the exams.

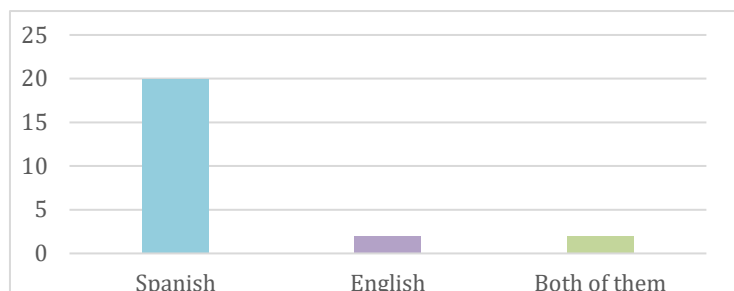


Figure 12. Preferences of subjects' language in 5th grade.

As can be observed in Figure 12, 20 children said they preferred the subjects taught in Spanish as it was easier to follow the classes, while 2 chose English because they liked the language and wanted to learn more. Nevertheless, 2 children said they liked both.

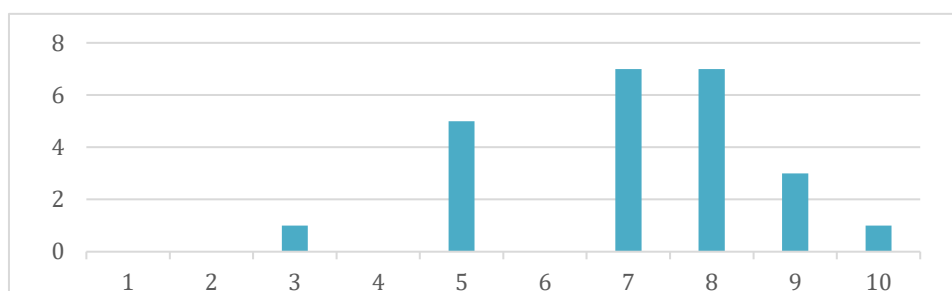


Figure 13. English learned in science in 5th grade.

Figure 13 shows how much English students perceived that had learnt thanks to the subject of science. The most repeated values were 7 and 8, with 7 votes each, followed by 5 people who rated 5. The class average was 7,174. In this same line, 11 pupils said speaking competence was the area where they had improved the most; 5 voted reading skills, 9 said writing and 6 listening. Only one felt he had not improved in any skill. Nevertheless, 15 students said they could have learnt more, of which 5 admitted they did not understand English, 7 said they were constantly distracted and the others had different opinions such as the need for better teachers, more videos or less use of the book.

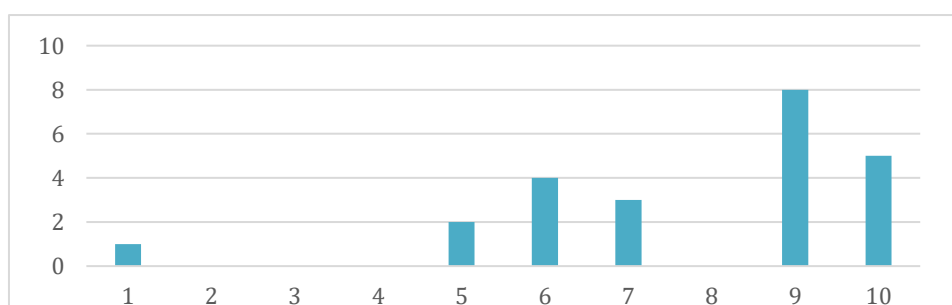


Figure 14. English learned in P.E. in 5th grade

As can be seen in Figure 14, the votes were distributed between the neutral and the highest numbers. The mode is number 9 with 8 votes, followed by 10 with 5. There was an agreement regarding the most developed competence in the subject as 12 pupils said it was listening, and the other half of the class said it was speaking. 3 students said they could have learnt more if the subject had been taught in Spanish and 9 would learn more if they were not distracted. Furthermore, 12 children admitted they would learn more at school if all subjects were taught in their native language, while the other 12 said they would not (see Figure 15).

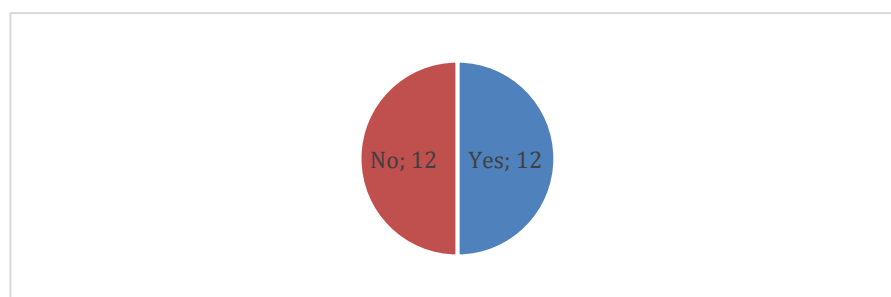


Figure 15. *Would you learn more if all the subjects were taught in Spanish?*

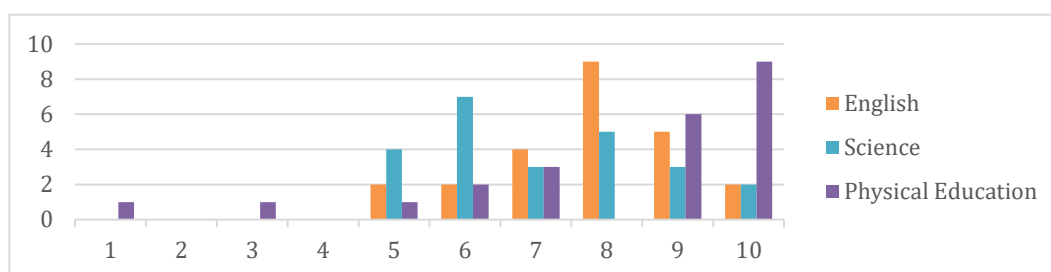


Figure 16. *Students' learning level in English-taught subjects.*

Figure 16 shows students' perceived learning in English-taught subjects. It should be remarked the fact that almost every student started to rate from 5, so the votes are concentrated in the higher numbers. English learning average was 7,78 out of 10, while science average is 7,11 and P.E. 8,08, the highest. 10 students admitted they could have learnt more in them, of which 2 justified it by recognising they would understand them if the subjects were in Spanish.

Finally, 6 students said they had difficulties in class, especially in maths and language for which they received school support. However, two said they needed help in English and it could be solved by receiving personalized attention. These six students were the ones diagnosed with SEN. Of them, none but Student 5 used English outside the school context. All of them liked the subjects of science and P.E. and preferred the last one because of the games and the sport. However, Student 5 liked both as he learnt from the two of them. They all agreed that the best part of the subjects taught in English was playing games and watching

TV series, except for Student 3, who liked the fact of learning in the L2. In general, what they liked the least was related to English as a means of communication. In this line, all of them but Student 1 answered they preferred the Spanish subject because it was easier to understand the classes.

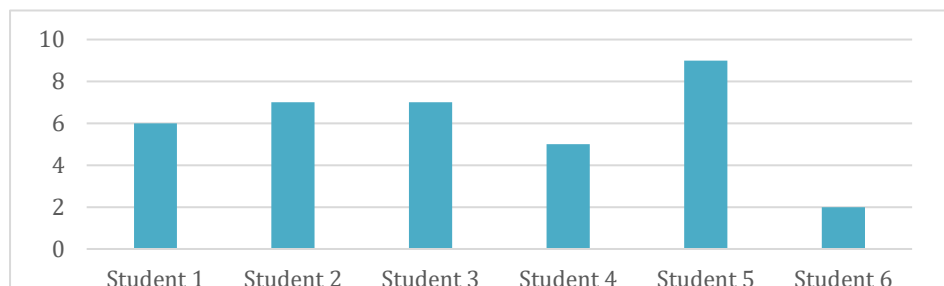


Figure 17. English learned in science: 5th-graders with SEN.

As can be seen in Figure 17, all students except numbers 5 and 6 rated their English learning in the subject of science, between 5 and 7. Besides, almost all of them agreed that the most improved competence was speaking, except Students 2 and 4 who answered writing and reading respectively. They all said they could have learnt more if science had been in Spanish, except 4 and 6, who thought it would be too easy.

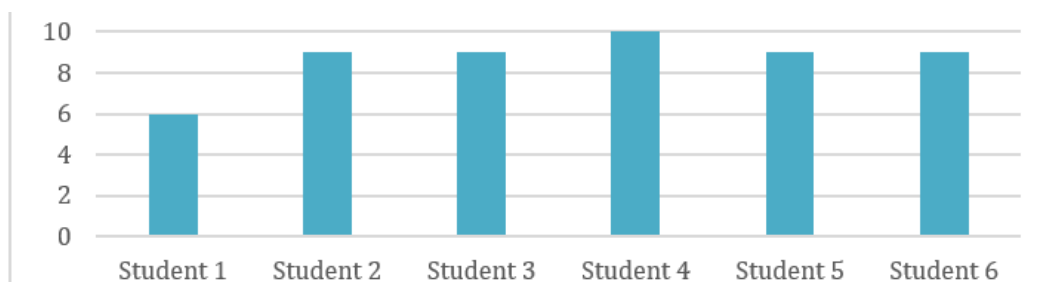


Figure 18. English learned in P.E.: 5th-graders with SEN.

As shown in Figure 18, there was a general feeling that a high level of English had been achieved thanks to P.E. There was an agreement in the most developed competencies, as listening and speaking were voted equally. Besides, half of them said they could have learned more if the subject had been taught in Spanish, whereas the other 3 said they could have not. Only 2 students out of 6 thought that they would learn more if all the subjects were taught in Spanish, whereas the majority felt they would not as they would learn less English and it was necessary for their future.

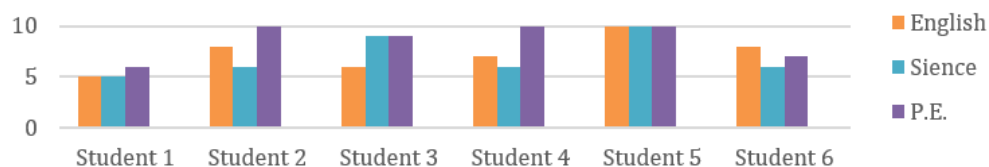


Figure 19. Students’ perceived learning level in English-taught subjects: SEN.

Figure 19 shows the learning level in the English-taught subjects of the students diagnosed with SEN. It should be remarked on the difference between Student 5, who rated every subject with a 10 and Student 1, with much lower values. Nevertheless, in general, the values ranged from 5 to 10. Furthermore, Students 2, 5 and 6 said they could have learnt more if they had been taught in Spanish.

2.3.3.2. Teacher’s questionnaire

This questionnaire was answered by four teachers who taught in L2 throughout the whole primary education stage, either P.E., Science or English. All of them had, at least, a C1 proficiency level, which was complemented by other training such as the specialization in the English language. Nevertheless, only two of them felt completely comfortable teaching in the L2.

Regarding the attitudes toward the English language, two teachers considered students did not have a positive attitude while the other two did. However, three of them thought that children’s motivation in English increased if it was worked in several subjects as they became more familiar with the language, and, therefore their level improved. Only one felt pupils did not feel more engaged because there were too many subjects taught in the L2.

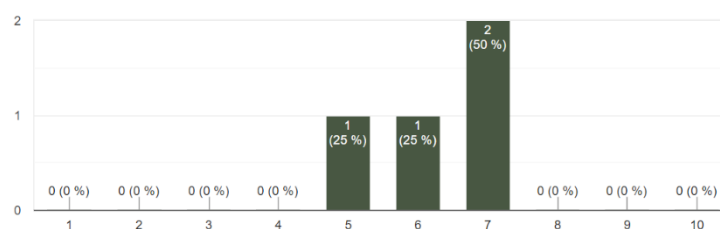


Figure 20. Students’ improvement in the English language through science.

As can be observed in Figure 20, two teachers considered students had improved their English competence by 7 points out of 10 thanks to the subject of science, whereas 2 thought only by 5 and 6. However, almost all of them agreed that their reading competence was the most improved.

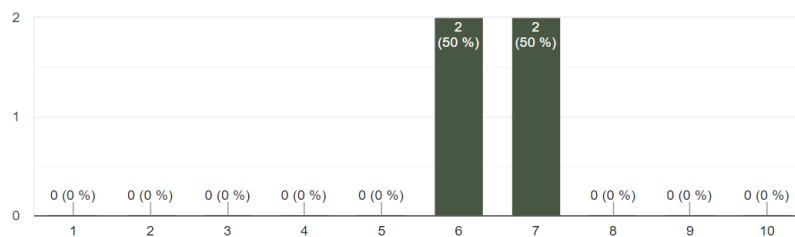


Figure 21. Students' improvement in the English language through P.E.

As for the improvement in the English language thanks to P.E., two teachers considered students had improved their skills 6 points out of 10, whereas the other two thought that 7. They were all in wide agreement on the most improved skills; reading and speaking (see Fig. 21). Additionally, three teachers felt that, if children study English in several subjects, they learn the language faster than those who only practice it in the English subject. On the contrary, one of them considered that children do not learn more quickly as the L2 tends to be an obstacle in most cases.

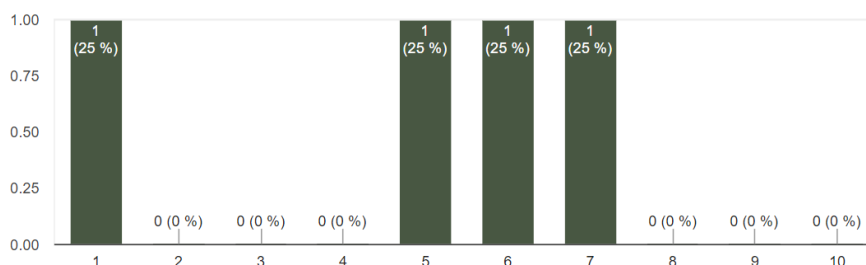


Figure 22. Gap in the acquisition of science knowledge in English concerning students learning it in Spanish.

Regarding the possible gap in the learning of science content in the L2 concerning those students who learn it in Spanish, each teacher had a completely different opinion, scoring 1, 5, 6 and 7 points respectively (see Fig. 22).

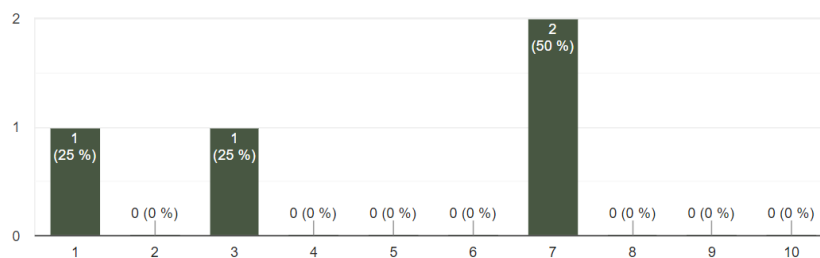


Figure 23. Gap in the acquisition of P.E. knowledge in English concerning students learning it in Spanish

As can be observed in Figure 23, in the case of P.E., there was a consensus between two teachers, as they considered there was a 7-point-gap between learning the content in Spanish and English, while the other two thought it was much less significant, with 1 and 3 points. Regarding the two previous questions, two teachers thought this gap was resolved during the learning process. However, one considered it depended on the age of the students, while the other felt the content gap was bridged but the linguistic one was not.

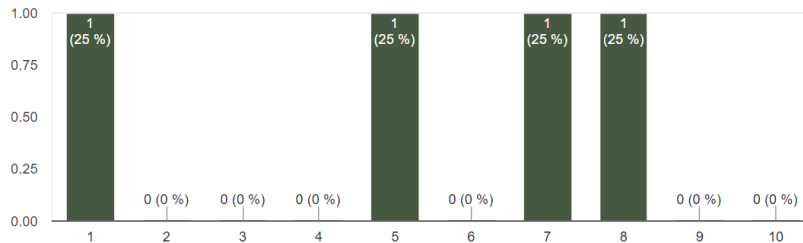


Figure 24. *Difficulty of students with SEN in science.*

Regarding SEN, all teachers answered they had students with SEN, either High Capacities, dyslexia, ADHD or intellectual disability. In the subject of science, one of the teachers answered children’s difficulty compared to the rest of the class was practically insignificant, 1 out of 10 (see Figure 24), while the others felt it was more complex for them, with 5, 7 and 8 points.

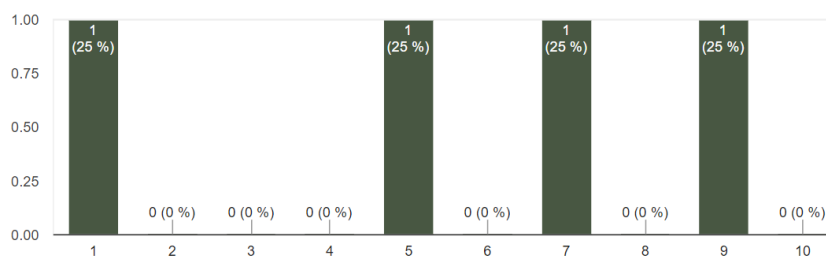


Figure 25. *Difficulty of students with SEN in P.E.*

As can be observed in Figure 25, a similar rating was obtained for P.E., although one of the teachers changed their vote from 8 to 9. Furthermore, three of the four teachers considered that children with SEN were taken into account when planning classes, although two of them recognized there were not enough resources to do so. Finally, almost all of them admitted they had experienced difficulties with such students and solved them through personalized attention, content translation and/or visual support.

2.3.3.3. School management questionnaire

As can be seen in Figure 26, according to the answers given by the Principal and the Assistant Principal, the resources used in the implementation of the PAI programme were satisfactory in 7 and 8 out of 10.

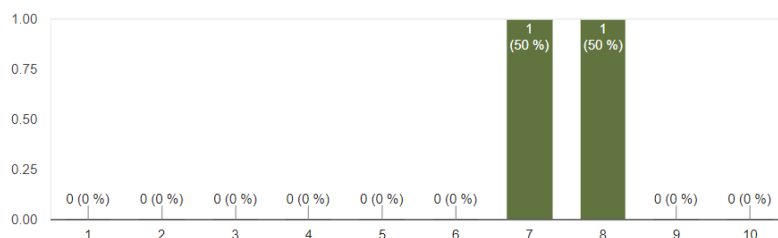


Figure 26. Efficiency of resources used in the implementation of the PAI programme.

As far as the teaching staff is concerned, both of them agreed that teachers showed motivation in the bilingual subjects and that their English language training was enough for the teaching of subjects in English. Besides, according to them, they all have a C1 or C2 English level, they were being advised by English language specialists on the organization and methodology used in the classroom and they receive training activities from the Education Department, apart from being part of the ERASMUS+ programme.

Besides, the two of them believed that bilingual education provides satisfactory results in the acquisition of linguistic competence in English, especially in writing and oral competence, as well as vocabulary acquisition and attention and concentration. Nonetheless, although one of them thought that bilingual education does not condition the content transmission in a significant way, both of them considered that certain students are influenced by it, especially in science. In fact, they thought there is a lack of correlation in the academic results between English subjects and Spanish ones. According to one, academic performance in those subjects taught in Spanish was between 10 and 20% better than those in English areas, whereas for the other the gap was between 30 and 50% (see Figure 27).

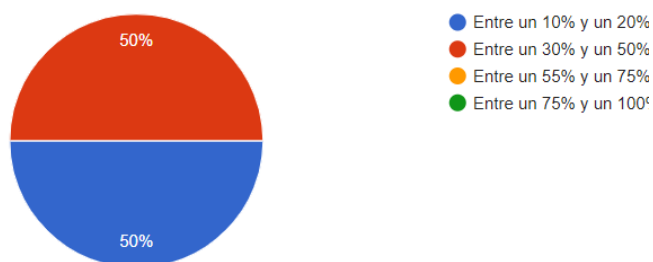


Figure 27. Disproportion in the academic results in English versus Spanish subjects.

In terms of teaching training in respect of SEN, one of the Principals admitted that there was little training available regarding teaching students with SEN in bilingual education, whereas the other said that the Guidance Department advised teaching staff when necessary.

Furthermore, they both considered that the school had the material, human and/or pedagogical resources necessary for bilingual education, including students with SEN, as the guidance department, the teaching staff with specialization in therapeutic pedagogy and the material resources provided by the books and the digital tools facilitate the personalized attention these students need. In this line, they explained the different measures the school implements in order to resolve the educational needs in the PAI programme such as translation of explanations and contents, permission to take the exams in their native language or simplification and reduction of content.

2.4. Discussion

2.4.1. Learning of content for children with SEN with CLIL methodology

Regarding our first research question, we can say that students in the 1st grade of primary education apparently learnt as they improved their marks in the post-test compared to the pre-test, supporting Seikkula-Leino (2005) who demonstrated that students with SEN are able to participate in CLIL programmes as they obtained high results in their academic performance. Nevertheless, although final averages showed an overall improvement, it should be mentioned that there were cases of worsening such as Student 5, which would call into question whether there has been real learning in some cases or just a matter of luck.

In this same line, we can conclude by saying that although pupils with SEN seemed to learnt science content, their averages (2,98 in the pre-test and 5,17 in the post-test) in both tests were under the average of students without SEN (4,95 and 5,45, respectively), which also agrees with Seikkula-Leino (2005) findings, which emphasize that despite they can obtain good results, greater pedagogical intervention is required compared to the students without SEN.

On the other hand, we cannot confirm that students with SEN in the 5th grade improved their content knowledge thanks to CLIL, which does not support Seikkula-Leino's (2005) findings, since their results were far from increasing considerably, except for Student 5, who was diagnosed with High Capacities. In fact, two students worsened their results, which again raises the question of whether students really acquired knowledge or just external factors such as luck or a partner's help influenced their scores. This conclusion supports the theory of Lorenzo et al. (2009), which supported that CLIL was inadequate for attention to diversity because it selects only the most intelligent and linguistically proficient students, as it was

demonstrated that the only pupil who was able to pass the exam was the one with a very high intellectual ability. Nonetheless, it must be mentioned that the SEN average was slightly over the average of the class, which was quite low. Some of them were above and some others below but their scores are similar. This is a very important fact, which contradicts all studies which argue that CLIL is detrimental to students with SEN, as data showed all students, with and without SEN, obtained similar results.

Students' opinions corroborate the feeling of lack of learning since 9 of the students with SEN out of 13 said they would have learnt more if these subjects had been in Spanish, as they did not understand English. This conclusion reconfirms the hypothesis of Lorenzo et al. (2009) and Madrid and Perez-Cañado (2018) about CLIL promoting disparity regarding SEN, as CLIL is supposedly aimed at the most motivated and linguistically proficient students.

Regarding teachers' comments about the learning of content in students with SEN, the average gap between pupils with and without SEN in science and P.E. was 4,75 and 4,5 respectively. However, all of them considered that it was resolved throughout the educational period, which, in fact, supports the theory of Perez-Cañado (2018) about time as the crucial factor in CLIL. In terms of the school management, both Principals confessed that even if indirectly, the transmission of contents was conditioned by CLIL.

2.4.2. Learning of the L2 for children with SEN with CLIL methodology

Regarding our second research question, we can say that students in the 1st grade of primary education apparently learnt the L2 through CLIL as their average score of English acquired in science was 3,85 out of 10 and 5,1 in P.E. Regarding 5th grade, their average scores were 6,66 in science, and 8,16 in P.E., highlighting listening and speaking as the most improved areas. As 3 of 4 rates are over 5, we can conclude saying that CLIL has a positive impact on the language learning outcomes in the L2, especially in the communicative competence, which supports Pérez-Cañado (2012).

Besides, students in the 1st grade of primary education apparently learnt the L2 through CLIL as they improved their marks in the post-test compared to the pre-test, especially in the questions aimed at assessing the linguistic competence, such as the first question, where 4 of 7 students improved, and the last one, where 3 increased their mark. Nevertheless, the rest did not worsen their results but maintained them. In the case of 5th-graders, of the 2 questions aimed at linguistic competence, only 2 of 6 improved in the former, whereas 5 in the latter, with one worsening case.

At an individual level and supporting Arregi (1997), children with cognitive impairment have difficulties in acquiring the L2, as it is the case of Student 4 in the 1st grade and Student 2 in the 5th one, whose L2 learning apparently was very poor as their performances in the test's exercises aimed at the linguistic competence were far from satisfactory: none of them

passed nor the linguistic exercises nor the exams. Besides, their listening and oral skills were nil; generally, they did not understand any of the classes.

In this same line, and according to Arregi's (1997) hypothesis, despite needing more individual support and resources, children with dyslexia were able to improve their L2, as demonstrated in the questions aimed at the L2, where they all improved their marks, except Student 6 of 5th grade who maintained one of them. Moreover, especially Students 3 in 1st grade and 6 in 5th experimented a significant improvement in their comprehensive skills, both reading and listening.

Regarding the student with absenteeism, his results showed a clear improvement but also his performance in class, which does not sustain Arregi's theory. Nevertheless, it must be noted that this child is bilingual Bulgarian-Spanish, which might explain his ease with language learning despite his irregular attendance.

Student 6 in 1st grade of primary education with a diagnosis of Conduct disorder showed a little improvement in one of the linguistic questions while the other had the lowest score (0). Besides, he did not improve any competence during the sessions as he was opposed to the English teacher and presented disruptive behaviours in every class, supporting Arregi's (1997) findings of children with conduct disorders and their learning conditioned because of their opposition to authority.

2.4.3. Motivation in children with SEN with CLIL methodology

Lastly, concerning the level of motivation in students with SEN, we can say that apparently, they were less motivated in the 1st grade of Primary Education than the rest of the pupils in class, as their average in the motivation thermometers was half a point under the average of students without SEN. As can be observed in the questionnaires, this is, mainly, because these children did not understand the L2 and were lost in the explanations. Nevertheless, it should be highlighted the fact that the motivational rate is much higher in P.E. than in the subject of science, which can be related to the presence of movement and games and the withdrawal of traditional practices such as books and sedentarism. This can lead to finding other explanations for the lack of motivation in science different from the English obstacle, as it has been demonstrated with P.E. that their engagement level could be higher despite the L2 if the classes were more stimulating and appealing. In fact, as in this school students worked with books from the very first year of primary education, generally, the overall motivation was quite low.

On the other hand, regarding 5th graders, It should be noted that the average motivation of students with and without SEN is very similar; in fact, in P.E., students with SEN seemed to be more motivated, although only slightly (0,119 points), which supports the theory of Pérez-Cañado (2018) about the importance of time in CLIL. Besides, comparing their motivation

rates with those of 1st grade, the oldest students are more engaged in science than the little ones, probably as a consequence of language understanding, as they comprehend better the L2.

In terms of individual data, Student 2 in 5th grade with cognitive impairment had difficulties in content and L2 learning, but, supporting Arregi (1997), other factors conditioned her academic performance, such as motivation. In her case, this pupil presented a high level of motivation in science and P.E.: 3,87 and 3,67, respectively. Moreover, according to her answers to the questionnaire, she said she preferred English subjects over Spanish ones, as she loved the L2 and wanted to learn more. Her motivation could have been conditioned because of her family support which contributed to the increment in her self-esteem, which was reflected in her learning path. Nevertheless, in the case of the student with a medium-low cognitive level in 1st grade, although her motivational average in science was 3,28 and in P.E. 3,48, it was quite obvious from the information gathered through observation that her motivation was not represented in these scores, which could be explained because this girl tended to copy her classmates to be at the same level. In her questionnaire answers, she admitted she would have learnt more if everything had been in Spanish as she did not understand the language. However, this lack of motivation could have other explanations that could be the spotlight for future research: her personal background. It must be highlighted that this student was adopted and her adoptive mother recently died, which might affect seriously her level of motivation. Moreover, as she had a cleft lip which conditioned her pronunciation skills, the difficulty to understand her in Spanish might have had an impact on her motivation in the L2.

As far as students with dyslexia and speech disabilities concerns, in 1st grade, Student 1 rated 3,28 in science and 2,585 in P.E., and Student 7 2,42 and 3,37 respectively. Their values were quite under the averages of both students with SEN (3,17 in science and 3,7 in P.E.) and students without SEN (3,7 in science and 4 in P.E.). Besides, although they said they liked these subjects, they also admitted they liked more the ones in Spanish because they did not understand anything the teacher said, which may demonstrate that kids with problems in the L1 acquisition have much less motivation when acquiring the L2, supporting Arregi's (1997) findings. However, in the case of Student 1 who obtained a considerably low mark in P.E., his lack of motivation could be explained because he disliked the exercise as he used to avoid running or playing. Other two worth mentioning cases were from 5th grade. Students 3 and 4 had severe dyslexia, however, their motivation scores were even above the class average (3,822 in science and 3,703 in P.E.). Students scored 3 4,07 in science and 4 in P.E., whereas Student 4 obtained 3,34 and 4,67. P.E. especially motivated them, which can lead us to think that, in fact, more than scoring their attitudes towards CLIL methodology, they scored their like for sports and games.

Student 5 in 5th grade, diagnosed with High Capacities, obtained 3,80 points in science average and 4,45 in P.E., the former being relatively low compared to his performance and participation showed in class. He was, by far, the most participative student and always spoke in the L2. However, on many occasions on the motivation thermometers, he did not score the highest values as he said he could always do better or learn more. Besides, he admitted he practised at home what they were seeing in class, showing his high motivation in CLIL subjects. As mentioned above, his proficiency in the language due to his high capacities made him more engaged than the rest of the students, supporting Madrid & Perez-Cañado (2018) and their theory about CLIL being aimed at the most linguistically proficient students.

Regarding Student 6 in 1st grade who was diagnosed with Conduct Disorder, obtained 2,42 in science and 3,37 in P.E., supporting Arregi (1997), as he did not present any type of motivation in class and, normally, even he did not open the book. His opposition to the teachers, especially to those teaching other languages than the L1 made his motivation in these subjects drop sharply. In fact, he was one of the few students who said he did not like science and P.E. at all, particularly because of the L2. Nevertheless, another possible explanation for his lack of motivation could be the teachers' performance with these types of students, as they let him do what he wanted so that he would not disturb the class. The CLIL implementation and attractiveness should be another key factor in the behaviour of Student 6, as the class was far from being prepared for motivating students, especially the most active ones.

Finally, regarding the school community's opinions, 2 out of 3 teachers thought all students had a negative attitude towards English, which can lead us to question whether CLIL has an impact on the motivation of pupils with SEN or on the student body itself, as it has been demonstrated that, although there were students with SEN who did not reach the class average of motivation, there were other pupils also diagnosed with SEN who surpassed it. Besides, one of the teachers admitted students with SEN were not taken into account when planning the classes, and another one confessed there were not enough resources for doing so, although both Principals said there were more than enough resources to carry it out. In this same line, one of the Principals said teachers were not trained for teaching students with SEN. The lack of resources and teachers' training regarding SEN could be part of the motivational problem, which could also be a spotlight for further research.

CONCLUSIONES Y PREGUNTAS ABIERTAS

Habiendo analizado todos los aspectos y datos recogidos en el presente trabajo, podemos observar que la efectividad de la educación bilingüe es un asunto verdaderamente complejo donde entran en juego una gran cantidad de variables que condicionan los resultados de la misma. Como se puede observar a lo largo del documento, el tema en cuestión sigue siendo controvertido de acuerdo con las teorías y resultados dispares de las investigaciones existentes sobre la educación bilingüe y el alumnado con NEAE, por lo que el debate acerca de su efectividad continua abierto.

En cuanto al aprendizaje de contenidos, podemos concluir diciendo que en 1º de Primaria, el alumnado con NEAE mejoró su conocimiento notablemente, pues los resultados del examen posterior son considerablemente superiores a los del previo y la mayoría de los estudiantes sacó una nota superior a 5. No obstante, en 5º obtenemos una conclusión totalmente diferente: la metodología CLIL no se ha mostrado efectiva en la enseñanza de contenidos, pues únicamente el estudiante diagnosticado con Altas Capacidades aprobó, mientras que el resto no pasaron del 4, incrementando insignificadamente sus calificaciones del examen previo al posterior. Sin embargo, cabe mencionar que los resultados tan bajos no solo se registraron en el alumnado con NEAE sino en la clase en su totalidad, por lo que no podemos concluir que el estudiantado con dificultades aprenda menos con CLIL que el resto de niños y niñas, sino que se trata de un resultado generalizado independientemente de las características de cada cual, ya que, de hecho, obtuvieron una media mayor que la del alumnado sin NEAE.

Respecto a la observación del aula y a los termómetros de motivación, concluimos que en 1º de Primaria, sí hay una gran diferencia de motivación en cuanto al alumnado que presenta NEAE y el que no, pues sus puntuaciones medias tanto en Educación Física como en Ciencias Naturales está alrededor de medio punto por debajo de las del alumnado sin NEAE. No obstante, la motivación general es mucho mayor en Educación física que en ciencias, lo que nos lleva a otra conclusión: parte del problema reside en la forma tradicional y tediosa de impartir las asignaturas troncales. En 5º de Primaria, sin embargo, podemos concluir diciendo que, en cuanto a los aspectos motivacionales, no hay gran variación del alumnado con y sin NEAE, pues en Ciencias Naturales la media motivacional del alumnado con NEAE está ligeramente por encima de la media del resto de la clase, y en Educación Física ocurre de manera contraria.

En relación con los cuestionarios del alumnado, concluimos que algunos de los datos recogidos a través de los termómetros de motivación se respaldan, tales como la preferencia del castellano en las clases debido a la falta de comprensión del inglés. Asimismo, su motivación en Educación Física también se justifica con sus opiniones en el formulario, pues

todo el alumnado con NEAE prefiere dicha asignatura ya que, entre otras cosas, comprenden lo que se dice en inglés gracias a la representación física y lúdica. No obstante, en 5º de Primaria hay opiniones que no respaldan los datos obtenidos previamente, como la preferencia de la asignatura de Educación Física frente a la de Ciencias Naturales, ya que su media de motivación fue mayor en la última. Por otra parte, y de acuerdo con los bajos resultados obtenidos en los exámenes, el alumnado confirmó que podrían haber aprendido más en castellano ya que así comprenderían más.

Por parte del profesorado, sus opiniones también respaldan datos previos analizados, como por ejemplo las referentes a la diferencias existentes entre el alumnado con y sin NEAE en cuanto al aprendizaje de contenido y del idioma. Parte de los y las docentes también mencionó la escasez de recursos y formación a la hora de la enseñanza del alumnado con NEAE a través de CLIL, comentario respaldado, a su vez, por una de las directoras. No obstante, también hubo un consenso en que, gracias a la educación bilingüe, el aprendizaje del inglés es mucho más efectivo.

Una vez expuestos todos los resultados obtenidos en la recogida de datos a través de diferentes instrumentos, cabe replantearse si podemos dar una respuesta a la pregunta principal del presente documento. Hemos podido observar una mejora general en el alumnado con NEAE, si bien es cierto que la investigación ha estado limitada debido a diferentes motivos. En primer lugar, porque hemos obtenido diferentes resultados dependiendo de la edad del alumnado, lo que nos lleva a concluir que es necesario tener en cuenta todas las variables ya sean individuales o ambientales que pueden afectar a la educación bilingües. En segundo lugar, la investigación ha estado limitada por la recogida de datos, que se llevó a cabo en un grupo de estudio muy reducido y no abarcó a todo el alumnado, profesorado, instituciones ni programas de educación bilingüe. Además, la falta de respuestas por parte de los padres y las madres también ha supuesto una limitación en el trabajo, ya que no se pudo obtener información por su parte aun habiendo efectuado el cuestionario para ellas debido a la falta de respuestas ([Anexo 8](#)).

Así pues, son todavía muchas las investigaciones y preguntas sin respuesta acerca de la temática del presente documento. Entre otras, la formación del profesorado de programas de enseñanza bilingüe y la educación de alumnado con NEAE así como los recursos para ofrecerla, encabezan la lista. Con todo ello, la educación bilingüe ofrece grandes ventajas, ya sean a nivel cognitivo, social y emocional, que, a pesar de no poder verificar su efectividad en todo el alumnado con NEAE, continúa siendo una gran oportunidad en la actualidad. Así pues, la implementación de dicha educación debe ser justa, segura y equitativa, respetando siempre los Objetivos del Desarrollo Sostenible 2030.

REFERENCES

- Albes, C., Aretxaga, L., Etxebarria, I., Galende, I., Santamaría, A., Uriarte, B., y Vigo, P. (2013). *Orientaciones Educativas. Alumnado con altas capacidades*. Eusko Jaurlaritzaren Argitalpen Zerbitzu Nagusia.
- Al Khalil, M. K. (2016). *Advancing methodology and practice: The IRIS repository of instruments for research into second languages*. Routledge.
- Aparicio, E. M. (2009). Análisis de la educación bilingüe en España. *ICEI Paper*, 12, 1-4. <https://eprints.ucm.es/id/eprint/38479/1/iceipaper12.pdf>
- Arregi, A. (1997). Bilingüismo y necesidades educativas especiales. *Área de Necesidades Educativas Especiales*. https://www.euskadi.eus/contenidos/documentacion/inn_doc_esc_inclusiva/es_def/djuntos/especiales/110015c_Doc_IDC_bilinguismo_nee_c.pdf
- Baker, C. (1996). *Foundations of Bilingual Education and Bilingualism* (2nd Ed). Multilingual Matters.
- Baker, C. (2001). *Foundations of Bilingual Education and Bilingualism*. Multilingual matters Ltd.
- Beardsmore, H. B. (1986). *Bilingualism: basic principles*, 1. Multilingual Matters.
- Bloomfield, L. (1933). *Language*. Henry Holt.
- Comisión Europea (1995). *Libro blanco sobre la educación y la formación. Enseñar y aprender. Hacia la sociedad del conocimiento*. Oficina de Publicaciones Oficiales de las Comunidades Europeas.
- Constitución española. BOE Art.3.2, de 29 de diciembre de 1978.
- Coyle, D. (2007). Content and language integrated learning: Towards a connected research agenda for CLIL pedagogies. *International journal of bilingual education and bilingualism*, 10(5), 543-562.
- Darcy, N. T. (1953). A review of literature on the effects of bilingual measurement of intelligence. *Journal of Generic Psychology*, 82, 21-57.

- Cummins, J., and Corson, D. (1997). *Bilingual Education: 5*. Springer Science & Business Media.
- Decreto Foral 159/1988, de 19 de mayo, por el que se regula la incorporación y uso del vascuence en la enseñanza no universitaria de Navarra. (1988). *Gobierno de Navarra*, 67, de 1 de junio de 1988. <http://www.lexnavarra.navarra.es/detalle.asp?r=28807>
- Doppelbauer, M. y Cichon, P. (2008). La España multilingüe. Lenguas y políticas lingüísticas de España. *Praesens Verlag*. <https://www.aecgit.org/downloads/documentos/317/la-espana-multilingue-vvaa-2008.pdf#page=31>
- García, O. (2011). *Bilingual education in the 21st century: A global perspective*. John Wiley & Sons.
- Gardner, R. C., and Lambert, W. E. (1972). *Attitudes and Motivation in Second Language Learning*. Newbury House Publishers.
- Garrido, D., López, B. y Carballo, G. (2021). Bilingüismo y lenguaje en niños con trastorno del espectro autista: una revisión sistemática. *Neurología*.
- Hammers, J., and Blanc, M. (1983). *Bilingualité et bilinguisme*. Pierre Mardaga
- Harding, E., and Riley, P. (1998). *La familia Bilingüe*. Cambridge University Press.
- Haugen, E. (1953). *The Norwegian Language in American: A Study in Bilingual Behavior (2)* University of Pennsylvania Press
- Kalambouka, A., P. Farrell, A. Dyson, and I. Kaplan. (2007). *The impact of placing pupils with special educational needs in mainstream schools on the achievement of their peers*. 49(4), 365-382). *Educational Research*.
- Kohli, A., Sharma, S., and Padhy, S. K. (2018). Specific learning disabilities: Issues that remain unanswered. *Indian journal of psychological medicine*, 40(5), 399-405.
- Lambert, W. E. (1974). Culture and language as factors in learning and education. In F. E. *Fifth Western Washington Symposium on Learning*.
- Ley Orgánica 2/2006, de 3 de Mayo, de Educación. (2006). *Boletín Oficial del Estado*, 106, de 4 de Mayo de 2006. <https://www.boe.es/buscar/pdf/2006/BOE-A-2006-7899-consolidado.pdf>

- Lieberson, S. (1969). How can we describe and measure the incidence and distribution of bilingualism? Description and Measurement of Bilingualism: An international seminar. *Canadian National Commission for UNESCO*, 286-295.
- Lorenzo, F., Casal, S., Moore, P., and Afonso, Y. M. (2009). *Bilingüismo y educación. Situación de la red de centros bilingües en Andalucía*. Fundación Centro de Estudios Andaluces.
- Marsh, D. (2002). CLIL/EMILE. The *European dimension. Actions, trends, and foresight potential*. University of Jyväskylä.
- Ministry of Social Justice and Empowerment. (2018). *Department of Empowerment of Persons with Disabilities (Divyangjan)*.
- Montenegro, R. (2012). Insights on bilingualism and bilingual education: a sociolinguistic perspective. *Íkala, Revista de Lenguaje y Cultura*, 17(3), 263-272.
http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S012334322012000300004&lng=en&tlng=
- Montrul, S. (2013). *El bilingüismo en el mundo hispanohablante*. Willey-Blackwell.
<https://books.google.es/books?hl=es&lr=&id=cUvjAQAQBAJ&oi=fnd&pg=PT34&dq=%Biling%C3%BCismo+en+espa%C3%B1a&ots=wT0sEDT4sY&sig=BnmrkJk12AROdJXQbruJZNBcft8#v=onepage&q&f=false>
- Mor, B., Yitzhaki-Amsalem, S., and Prior, A. (2015). The Joint Effect of Bilingualism and ADHD on Executive Functions. *Journal Attention Disorder*, 19, 6.
- Moradi, H. (2014). An investigation through Different Types of Bilinguals and Bilingualism. *International Journals of Humanities & Social Science Studies*, 1(2), 107-112.
- Orden foral 93/2008, de 13 de junio, del consejero de educación por la que se regula la atención a la diversidad en los centros educativos de educación infantil y primaria y educación secundaria de la comunidad foral de Navarra. (2008). *Boletín Oficial de navarra*, 93, de 30 de Julio de 2008.
<http://www.lexnavarra.navarra.es/detalle.asp?r=29678>

- Pivneva, I., Palmer, C., and Titone, C. (2012). Inhibitory Control and L2 Proficiency Modulate Bilingual Language Production: Evidence from Spontaneous Monologue and Dialogue Speech. *Frontiers in psychology*, 3.
- Pérez-Cañado, M. L. (2012). CLIL research in Europe: past, present, and future. *International Journal of Bilingual Education and Bilingualism*, 15(3), 315-341.
- Pérez-Cañado, M. L. (2018). CLIL and Educational Level: A Longitudinal Study on the Impact of CLIL on Language Outcomes. *Porta Linguarum*, 29, 51-70.
- Madrid, D., and Pérez Cañado, M. L. (2018). Innovations and Challenges in Attending to Diversity through CLIL. *Theory Into Practice*, 57(3), 241-249.
- Real Decreto Legislativo 1/2013, de 29 de noviembre, por el que se aprueba el Texto Refundido de la Ley General de derechos de las personas con discapacidad y de su inclusión social. (2013). *Boletín Oficial del Estado*, 289, de 3 de diciembre de 2013. <https://www.boe.es/buscar/pdf/2013/BOE-A-2013-12632-consolidado.pdf>
- Seikkula-Leino, J. 2005. Supporting the pupil in CLIL education. *Tempus*, 5, 1-20.
- Snowling, M. J. (2013). Early identification and interventions for dyslexia: a contemporary view. *Journal of Research in Special Educational Needs*, 13(1), 7-14.
- Suárez, M. (2005). *Claves del éxito del aprendizaje integrado de contenidos y lengua extranjera (AICLE)*. Universidad de Deusto.
- Skutnabb-Kangas, T. (1981). *Bilingualism or not: The education of minorities* (Vol. 7). Multilingual Matters.
- Tennant, J., and Gardner, R.C. (2004). The computerized mini-AMTB. *CALICO Journal*, 21(2), 245-263.
- UNESCO International Standard Classification of Education. (2011). *United Nations Educational, Scientific and Cultural Organization*. <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>
- Weinreich, U. (1953). *Languages in contact: Findings and problems*. Mouton.

ANNEXES

ANNEX 1

All about plants

Name..... Date..... Class.....

1. Match with the correct answer.

Living things



Non-living things



2. Write producer or consumer.



.....

3. Circle the correct answer.

- a. Living things need food, sunlight and water.
- b. Living things need food, water, sunlight and air.
- c. Living things need food, air and sunlight.

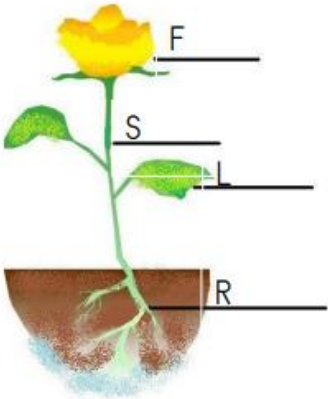
All about plants

4. Number and order the pictures. Then, use the words in the box to name the life cycle of plants.

Reproduce, die, grow, are born



5. Complete and label the plant.



ANNEX 2

Unit 4 **Ecosystems**

Name..... Date..... Class.....

1. Select the correct option.

An ecosystem is...

- a. A group of living things and non-living things that live in the same area.
- b. A group of different populations that live together in the same area.
- c. A group of organisms that can reproduce with other individuals that make up the species and produce fertile offspring.

Producers are...

- a. Herbivores and carnivores
- b. Bacteria and fungi
- c. Plants

When a big change affects the balance of living things, it can lead to the...

- a. Creation of a new ecosystem
- b. The extinction of species
- c. The extinction of the marine ecosystems

2. Match the columns.

- | | | | |
|---------------------|---|---|------------|
| Primary consumers | • | • | omnivores |
| Secondary consumers | • | • | herbivores |
| Tertiary consumers | • | • | carnivores |

3. Complete the sentence with the correct words.

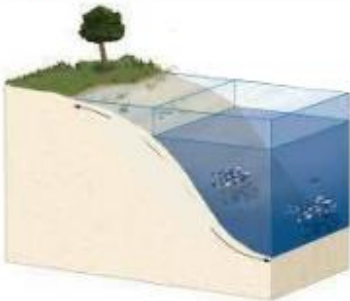
Animals need _____ to live, which, at the same time, need _____, _____ and _____.

4. Explain the difference between food chain and food web.

5. Identify and name the following terrestrial ecosystems.



6. Identify the different zones in marine ecosystems and explain their characteristics.



7. Write three ways to reduce the negative effects of human actions on ecosystems.






ANNEX 3

Nombre.....

1		Del 1 al 5, ¿cuánto te ha gustado la clase?
2		Del 1 al 5, ¿cómo de útil te ha parecido la clase?
3		Del 1 al 5, ¿cómo de difícil te ha parecido la clase?
4	
5	

ANNEX 4

Nombre.....

1		Del 1 al 5, ¿cuánto te ha gustado la clase? ¿Por qué?
2	
3		Del 1 al 5, ¿cómo de útil te ha parecido la clase? ¿Por qué?
4	
5		Del 1 al 5, ¿cómo de difícil te ha parecido la clase? ¿Por qué?

ANNEX 5



1. Soy

- Niño
- Niña



2. ¿Qué curso estás realizando?



3. ¿Cuál es tu lengua materna? ¿Tienes más de una? ¿Cuántos idiomas hablas?

4. Fuera del cole, ¿utilizas el inglés? ¿Dónde y para qué?



5. En el colegio, ¿qué asignaturas cursas es inglés?

- Science
- Arts and crafts
- Physical Education
- Maths
- Otra (di cual)



6. Te gustan estas asignaturas? ¿Cuál es tu preferida? ¿Por qué?

7. ¿Qué es lo que más te gusta de las asignaturas en inglés? ¿Y lo que menos?



8. ¿Prefieres las asignaturas que das en inglés o las que das en castellano?
¿Por qué?



9. Del 1 al 10, cuánto inglés crees que has aprendido en...
a. Science

¿En qué lo notas?



- Competencia lectora (reading)
- Competencia oral (speaking)
- Competencia escrita (writing)
- Competencia de escucha (listening)

¿Crees que podrías haber aprendido más? ¿Por qué?

b. Physical education

¿En qué lo notas?



- Competencia lectora (reading)
- Competencia oral (speaking)
- Competencia escrita (writing)
- Competencia de escucha (listening)

¿Crees que podrías haber aprendido más? ¿Por qué?

10. ¿Qué clase impartida en inglés te ayuda a aprender más sobre la asignatura?

- Inglés
- Science



Physical education



¿Por qué?

11. ¿Crees que aprenderías más si dieras estas asignaturas en castellano?
¿Por qué?



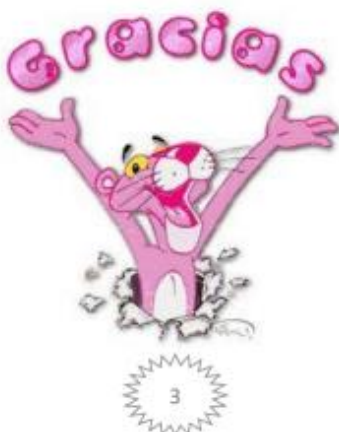
12. Del 1 al 10



- ¿cuánto has aprendido en inglés?
- ¿cuánto has aprendido en science?
- ¿cuánto has aprendido en Physical Education?

¿Crees que podrías haber aprendido más? ¿Por qué?

13. ¿Tienes alguna dificultad en alguna de estas asignaturas donde necesites ayuda? Si es así, ¿en que asignatura y qué tipo de ayuda recibes? ¿Qué tipo de ayuda crees que necesitarías?



ANNEX 6

Profesorado

1. ¿En qué cursos impartes clase?

2. ¿Impartes alguna asignatura en inglés? Si es así, ¿cuáles?

3. ¿Qué tipo de formación lingüística tienes? ¿Te sientes cómodo/a con tu formación lingüística impartiendo clases en inglés? ¿Por qué?

4. ¿Crees que la actitud del alumnado es positiva en tu asignatura al ser impartida en lengua inglesa?

5. ¿Piensas que la motivación del alumnado en cuanto al inglés aumentará si se trabaja también en otras asignaturas? ¿Por qué?

6. Del 1 al 10, cuánto consideras que ha mejorado la competencia lingüística de la lengua inglesa en
 - a. Science ¿En qué lo notas?

 - b. Physical Education ¿En qué lo notas?

7. Al estudiar inglés en varias asignaturas, ¿crees que el alumnado aprende el idioma más rápidamente que aquellos que únicamente lo practican en la asignatura de inglés? ¿Por qué?

8. Del 1 al 10, qué desfase consideras que hay en la adquisición de conocimientos respecto al alumnado que recibe las clases en castellano en
 - a. Science
 - b. Physical education

¿Crees que durante el proceso de aprendizaje se soluciona, o, por el contrario, permanece?

9. ¿Tienes en clase algún/a alumno/a con Necesidades Educativas Especiales? Si es así, ¿cuáles?

10. ¿Consideras que este alumnado tiene mayor dificultad en la adquisición lingüística y de contenidos? Del 1 al 10, numera su dificultad por asignatura.

11. ¿Piensas que se tiene en cuenta las necesidades personales del alumnado a la hora de planificar las asignaturas impartidas en inglés?

12. ¿Crees que el colegio está capacitado en cuanto a recursos materiales, humanos y/o pedagógicos para la enseñanza bilingüe incluyendo al alumnado con NEAE? ¿Por qué?

13. ¿Has experimentado dificultades con alumnado que presenta NEAE? Si ha sido así, ¿qué dificultades tenían por asignatura y cómo la solventaste?

14. Otros comentarios

ANNEX 7

Centro

1. Del 1 al 10, ¿cómo de satisfactorios y eficientes son los recursos empleados en la implementación del programa PAI?

2. ¿El profesorado presenta motivación a la hora de impartir las asignaturas si es de una manera bilingüe?

3. ¿La formación en lengua inglesa en el profesorado es suficiente para la impartición de asignaturas en inglés?

4. ¿La educación bilingüe proporciona resultados satisfactorios en la adquisición de competencia lingüística en inglés? ¿En qué aspectos?

5. ¿En qué medida están cubiertas las necesidades formativas del profesorado en cuanto a la lengua inglesa?

6. ¿La educación bilingüe condiciona la transmisión de contenidos en asignaturas impartidas en inglés? ¿En qué aspectos y en que asignaturas?

7. ¿Existe una desproporción significativa en los resultados académicos del alumnado que cursa las asignaturas en inglés de aquel matriculado en castellano? Son

- Entre un 10% y 20% mejores
- Entre un 30% y un 50% mejores
- Entre un 55% y un 75% mejores
- Entre un 75% y un 100% mejores

8. ¿En qué medida están cubiertas las necesidades formativas del profesorado en cuanto a la metodología para el programa PAI?

9. ¿En qué medida están cubiertas las necesidades formativas del profesorado en cuanto a la enseñanza del alumnado con Necesidades Educativas Especiales?

10. ¿El centro dispone de los recursos materiales, humanos y/o pedagógicos necesarios para la enseñanza bilingüe incluyendo al alumnado con NEAE? Justifique su respuesta

11. ¿Qué medidas se llevan a cabo por parte del centro para solventar las necesidades educativas especiales en el programa PAI?

12. Otros comentarios

ANNEX 8

Padres y madres

1. ¿Qué curso está realizando vuestro/a hijo/a?

2. ¿Cursa asignaturas en inglés? ¿Cuáles?

3. ¿Queríais una educación bilingüe para vuestro/a hijo/a? ¿Se han cumplido vuestras expectativas? Justificad vuestra respuesta

4. ¿Consideráis útil la enseñanza de las asignaturas en inglés? ¿Por qué?

5. ¿Creéis que vuestro/a hijo/a presenta la misma motivación en las asignaturas impartidas en inglés que en las de castellano? ¿Por qué?

6. ¿Creéis que el nivel de inglés de vuestro/a hijo/a ha incrementado gracias a las asignaturas impartidas en inglés? Si es así, ¿en qué lo habéis notado?

7. Consideráis que en PAI la instrucción del inglés por parte del centro es:
 1. Muy apropiada
 2. Apropiada
 3. Indiferente
 4. Inapropiada
 5. Muy desapropiada¿Por qué?

8. Desde vuestro punto de vista, ¿el PAI condiciona la transmisión de contenidos curriculares? (ya sea de manera positiva o negativa) ¿Por qué?

9. ¿Consideráis que se alcanza un aprendizaje significativo de los contenidos en las asignaturas impartidas en inglés? Justifica tu respuesta

10. Vuestro/a hijo/a presenta algún tipo de Necesidades Educativas Especiales? Si es así, ¿consideráis que le influye que la enseñanza de las asignaturas sea en inglés? ¿En qué lo notáis?

11. ¿Vuestro/a hijo/a recibe algún tipo de apoyo escolar en estas asignaturas? ¿Cuál? ¿Consideráis que es efectivo? Justifica tu respuesta

12. ¿Qué tipo de ayudas consideráis que serían necesarias para que vuestro/a hijo/a pudiera beneficiarse de las asignaturas en inglés?

13. Otros comentarios
