



PROGRAMA DE DOCTORADO EN LENGUAS MODERNAS:
INVESTIGACIÓN EN LINGÜÍSTICA, CULTURA Y TRADUCCIÓN

The impact of the Neuro Linguistic Programming spelling strategy in the teaching of Content and Language Integrated Learning subjects in bilingual schools

Tesis Doctoral presentada por

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0. INTRODUCTION

Bilingual programmes in the Community of Madrid have significantly changed the way content subjects are taught and learnt. Students in these programmes experience an increased exposure to a foreign language, which has considerably improved their level of proficiency. Therefore, it seems appropriate to think that Bilingual programmes have also changed the way our students feel about English. This change may be due to the fact that a foreign language is not only used in order to communicate, but also it has become a vehicle to learn contents. Furthermore, students are expected to produce a large and varied amount of language in content subjects, which can be challenging at times due to their limited resources (Halbach, 2012). Therefore, the input students are exposed to tends to be more natural not following a grammatical syllabus. Owing to these new teaching demands, teachers who develop their practice in a foreign language have become language teachers, regardless of the subject they teach. All these factors make explicit the need for a constant review of our practice that will involve risk-taking, whilst developing new approaches to language teaching.

0.1. General remarks

After over fourteen years of experience within the Bilingual programme in Primary Education, even though students at this level can usually understand messages in English, it is fairly common to see how many of them could not copy a word correctly in most cases (Ampuero López, 2017). This is due to the fact that the first years of Primary are devoted to the development of oral skills, whilst little attention is paid to written skills. Furthermore, written skills become more important and necessary for students to become competent in English from 3rd grade onwards. Given that correct spelling is a real challenge for students at this age, it is therefore key to placing a greater emphasis on pronunciation and spelling if we want to help students avoid misspelling words or making wrong word choices.

English is a language of great orthography ambiguity owing to the “accumulated irregularities of its spelling system” (Crystal, 1997:9). In fact, Crystal (1997) maintains that spelling patterns could be one of the aspects that may appear less desirable for English learners. Similarly for Spanish speakers, decoding English sounds and spelling tends to

be more complicated as in their L1, each sound is transcribed in a fixed representation. As Borgwaldt et al. (2006:1) suggest:

In contrast, in opaque orthographies such as English, spelling-sound correspondences are often unpredictable. The degree of spelling-sound ambiguity is one of the variables known to affect visual word recognition performance.

Therefore, it seems advisable to find ways and new perspectives to bridge the gap between the development of oral skills during the early years of Content Language Integrated Language (CLIL, henceforth) and the development of written skills to enable the process of language acquisition. As Harmer (1998) explains, one of the main reasons for teaching writing skills is that it helps reinforce the language being learnt. In the same vein, he points out that “the visual demonstration of language construction is invaluable for both our understanding and how it all fits together and as an aid to committing the new language to memory” (1998:79). Furthermore, Templeton and Morris (1999:108), indebted to Adams (1990) and Perfetti (1992), argue that “accurate, automatized knowledge of basic spelling patterns is at the heart of skilled reading and writing”.

As a consequence, strategies by means of which students learn how to spell effectively have been studied extensively. Research in County Durham (UK, 2006)¹, explored the impact Neuro-Linguistic Programming (henceforth NLP) had on the development of teaching and learning. One of the strategies they put into practice was the NLP Spelling Strategy, with the objective of helping learners retain and learn spellings more easily. This report, carried out with native English speakers, concluded that the use of different sensory channels and eye accessing clues made a great difference to the students’ ability to memorise spellings, being both strategies used in NLP. My students tend to fail at this writing attempt. One reason might be that poor spellers tend to use ineffective mental programs by trying to sound out words (Dilts, 1997). Since content-subject vocabulary tends to be very difficult for students learning through a foreign language, I aim to prove whether the NLP spelling strategy is effective for the early years of Primary Education within a CLIL context.

¹ Information about this project can be found at: <http://www.nlplifetraining.com/general-articles/durham-project-1> and <http://www.nlplifetraining.com/general-articles/the-durham-project-2-nlp-and-education>

0.2. Need for the study

Many teachers choose not to teach spelling since it is assumed that it is a skill that will develop naturally once students learn how to read. Although this might be true, many students in bilingual schools and especially those in the first years, struggle with reading both, Spanish and English. In Spain, preschool children are not expected to learn how to read. However, as soon as they start Primary, they will not only need to learn how to read in Spanish, but they will also begin facing their first written words in English. In addition to this, students at very early age will confront specific words related to the Science world. Hence, it seems appropriate to find efficient ways to help students improve their spelling skills, which will end up aiding the process of learning how to read. In Joshi et al. (2008:9) words:

The correlation between spelling and reading comprehension is high because both depend on a common denominator: proficiency with language. The more deeply and thoroughly a student knows a word, the more likely he or she is to recognize it, spell it, define it, and use it appropriately in speech and writing.

In my experience, spelling is many times seen as a secondary problem when correcting students' work. We are teachers and after all we have seen many times jokes like the one: 'ef yoo kan rid ths yoo prbli ar a teecha'. Dealing with illegible assignments usually comes with the job. As a matter of fact, the way most teachers would address spelling mistakes is by crossing out, underlying or marking a spelling mistake of a specific word in a text, hoping students will retain the correct order of the letters by noticing the problem. However, spelling is considered an essential part of language teaching (Jones, 2009).

If we choose to teach this, in many cases forgotten skill, we will therefore aid learners of the second language to understand this language's basics since according to Jones (2009), the sounds that are pictured by letters and their spelling is the groundwork to fluent reading. In addition to this, Joshi et al. (2008:10) highlight that "the major goal of English writing system is not merely to ensure accurate pronunciation of the written word – it is to convey meaning". For instance, if homophones were written with spelling mistakes, the reader would be lost in meaning.

In the attempt to teach spelling what it is done in many cases, is to ask students to copy the word until they get it right. Thus, spelling practice is usually seen as a chore rather than something fun to do. However, when students feel they are succeeding in their efforts to correct spelling and getting the appropriate feedback, learning to spell might not be as painful (Jones, 2009). This is where NLP gives way as “a supplementary tool in L2 teaching and an approach to support learners to achieve excellence in their performance” (Pishghadam and Shayesteh, 2014:1).

As Pishghadam and Shayesteh (2014:2) claim, “today, working in education seem to be a true challenge; given that, young learners manifest negative attitudes toward school and learning even more”. In this light, Olive Hickmott (2006:1) write in the preface of ‘Seeing Spells Achieving’: “I struggled through school with lists of words to learn and had poor test results [...] Whenever the class read aloud, I felt that it would be best to sink under the desk unnoticed”. Surely, many former students can relate to this sentence. In many occasions, the situation gets even worse when the foreign language is also used as a vehicle to learn new contents, that is the setting for students in Spanish bilingual programmes. Therefore, it is paramount to find ways and techniques that ease this problem.

In this sense, NLP techniques “can help EFL learners become successful by increasing their motivation, by decreasing their anxiety leading to learning improvement” (Lashkarian and Sayadian, 2015:1). NLP deals with how our brain interacts with the environment (NEURO), which is then translated and applied into our language (LINGUISTIC) and behaviour (PROGRAMMING)². As Hardindgham (1998) claimed, NLP is one of the resources to increase the efficiency of language teaching. In the same vein, Thornbury (2001:394) suggests that NLP helps to reach excellence in the process of teaching and learning as well as it improves classroom communication, increasing learners’ attitudes and motivation towards L2 learning. Added to that, NLP techniques used in class boost self-esteem changing their attitudes towards learning and life in a positive way (Thornbury, 2001:394).

Likewise, Mathison’s doctoral research (2003) claims that NLP seems to have potential for education even if it needs more research and critical evaluation. In fact, the use of NLP is quite popular “as a method of communication and personal development” (Tosey and Mathison, 2003b:1). Granted that, NLP is used in many different fields such

² This description is given by all NLP manuals, articles and books consulted for this dissertation.

as sports, coaching, sales or teaching. As Tosey and Mathison (2003b:2) suggest “NLP appears to hold much potential for teaching and learning” and it “is commonly used to offer solutions to problems encountered in teaching”. Spelling seems to be an important problem needed to be addressed, therefore, the aim of this doctoral research is to find solutions that will help students in bilingual schools, using an NLP approach to teaching as well as NLP specific spelling strategies in a CLIL setting.

According to the Durham Report conclusions (2006), the use of different sensory channels makes a great impact in children’s ability to memorize spellings. The NLP Spelling strategy works with the five senses, specially the sense of sight. Thus, by using NLP strategies we will be tackling into the type of learners we have in the class. This way, making more explicit the needs that we may have in a class group making possible to plan for a more individualized learning helping us reach our students a lot easier (Stoica, 2016).

Using NLP techniques and its spelling strategy is also a way to encourage learners of the foreign language to perceive themselves as strong and successful learners. By doing so, they will feel more motivated to continue learning not only aspects related to specific words in their content subjects but also, they will be likely to apply these techniques and strategies to other subjects and learning experiences.

0.3. Research questions, hypotheses and research objectives

This doctoral dissertation attempts to answer the following research questions:

1. Is the use of the NLP spelling strategy an effective teaching practice to raise spelling awareness and performance? Can the use of the NLP spelling strategy improve students’ spelling ability in content-subject classes? Is the NLP spelling strategy useful to memorize the spelling of content words? If so, will the use of NLP strategies in the classroom increase motivation towards written skills?
2. Do positive beliefs about spelling work bring about any change in the spelling performance? Do students who believe the NLP spelling strategy is effective perform best in spelling tests? Do students who believe that copying words is effective perform best in spelling tests? Will the use of peer and self-evaluation questionnaires make a difference regarding students’ self-concept and beliefs?

3. Do learning styles affect the ability to produce accurate spellings? If so, do visual learners perform best in spelling tests? Will the use of NLP spelling strategies make a difference in auditory and kinaesthetic spellers?

These research questions have made me develop the following hypotheses:

1. The use of the NLP spelling strategy in the learning of lexical fields within content-subject classes, will not only raise spelling awareness and performance, but also help students to become better spellers in a motivational and meaningful learning environment.
2. Positive beliefs towards a particular spelling strategy will help students perform best in spelling test.
3. Since the NLP spelling strategy deals with the visualization of words, visual learners will tend to perform best in spelling tests.

As far as this research is concerned, I expect that NLP spelling strategies will prove effective and that, in the long run, they might be useful as a learning to learn strategy as well as to bring about some improvements in L2 self-concept and motivation towards written skills.

The general objective of the present study is twofold. On the one hand, it seeks to find a gap in the literature by obtaining new understandings about the role of spelling for Spanish young students in a CLIL context. On the other, it suggests practical ideas for foreign language and CLIL teachers who are interested in helping students to overcome their writing difficulties in the foreign language in a motivational way. In the light of the hypotheses, the objectives of this research are divided into general and specific:

General Objectives:

1. To identify the key elements of the NLP spelling strategy.
2. To provide students with resources to bridge the gap between the early and the late years of bilingual education with regard to written skills.
3. To put into practice the NLP spelling strategy in bilingual primary education while checking and analysing the effectiveness of this action.
4. To examine the role that learning styles have in spelling.

Specific Objectives:

1. To find out possible strategies to foster motivation for foreign language learning.
2. To devise possible approaches and procedures to ease the writing process for students at primary level learning through English.
3. To analyse whether self-concept and beliefs interfere with learning.
4. To analyse whether visual strategies to learn spelling such as NLP are better than other approaches such as copying a list of words for spelling improvement.

0.4. Overall structure of the thesis

This doctoral dissertation is divided in two different sections: the first part is the study of the theoretical background in which aspects such as learners' diversity, reasons for teaching spelling, CLIL and NLP will be discussed (chapters 1 to 3). The different chapters in the rationale are designed to illustrate those concepts and theories that will lead the reader to understand the basics of the experimental study. For this reason, I have selected the most relevant studies that are connected to my research goals and objectives.

The second part presents the research study in which the context, the design of the intervention, the instruments for the data collection as well as the data analysis and conclusions will be displayed and evaluated (chapters 4 to 7).

In the experimental part, I initially define the methodology and work plan, describing the participants and the context (chapter 4). Henceforth, I present a pilot study (chapter 5), which contributed to the elaboration of the next research, in which quantitative and qualitative data are analysed (chapters 6 and 7). In the conclusion, I aim to answer the aforementioned research questions based on the results gathered as well as to provide suggestions for further research in this topic (chapter 8).

In the following chapter, I will start building a theoretical background that will help contextualise the case of study. In doing so, different definitions of bilingualism will be explained in order to illustrate how bilingual education is understood and applied in Europe. In this attempt, three of the most representative countries in Europe: Germany, France and Luxemburg bilingual programmes will be briefly outlined. This will build a bridge to depict the characteristics of CLIL education in Spain and more specifically the Community of Madrid. This background will focus on Primary Education for the benefit

of this study. In what follows, the acquisition of basic writing skills will be described. In addition, the role that spelling plays in the development of reading and writing skills will be analysed. Finally, the role of reading, writing and spelling in CLIL contexts will be considered.

CHAPTER 1. CONTENT AND LANGUAGE INTEGRATED LEARNING AND THE REINFORCEMENT OF READING AND WRITING

1.1. What does bilingualism mean? Understanding bilingual education and the common European Framework of Reference for Languages

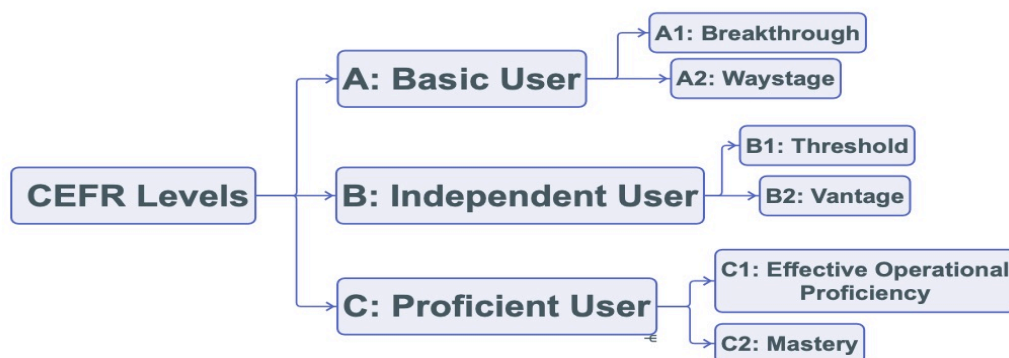
According to Merriam Webster online dictionary, the first known use of the word bilingualism was in 1873 and it was defined as “the ability to speak two languages”. Nevertheless, the real meaning of the concept bilingualism is a rather complex phenomenon. As Gottardo and Grant (2008) suggest, this is because being bilingual relies on many different aspects and circumstances such as the time of foreign language exposure, the expertise in using each one of the language skills, the age of acquisition and the context in which languages are learnt.

Likewise, defining the borders of what makes someone bilingual is also complicated. At one end, Bloomfield (1933) considers a maximalist view in which a person should have the control of two or more languages as a native speaker. At the other end, Diebold (1964) recognises incipient bilinguals as the individuals with minimal competence in any foreign language, such as a tourist who is able to utter some words or sentences to get out and about. From one end to the other, there are many interpretations of this term. As a matter of fact, Wei (2000) suggests that there are over 30 varieties of bilinguals depending on the extent of skills and abilities in the languages someone may speak. In his view, balanced bilinguals are individuals whose ability with the two languages is practically identical. This definition is likely to be shared by popular opinion. Nonetheless, as Wei (2000) also suggests, there are also receptive or semibilinguals whose abilities rely on receptive skills (i.e., listening and reading) even if they are not able to produce the second or foreign language (i.e., speaking or writing). In addition to this, he highlights other types of bilingualism such as subtractive bilinguals who take advantage of the skills acquired in their first language to learn the rest, functional bilinguals who are able to operate in two languages with different levels of fluency and secondary bilinguals who add a language from formal instruction.

In consequence, the concept of bilingualism is alive since the individuals adding two or more languages not only rely on the development of the language skills, but also the social aspects, the input received and the affective circumstances in which the language is learnt (McLaughlin, 1984). Furthermore, as stated in the Dictionary of

Language Teaching and Applied Linguistics (Richards and Schmidt, 2002) in order to be considered bilingual, an individual has to be able to read, speak and understand in two languages with an appropriate level of proficiency. Ergo the concepts of reading, writing and proficiency are added to the first definition of bilingual given in this chapter that defines bilingual as someone who is able to speak two languages. The fact that any individual or student has different levels of proficiency on each language skill and the many definitions mentioned above, made the Council of Europe (2001) establish a common basis and guidelines to measure the language competence and performance in all language skills. This was called the Common European Framework of Reference for Languages³ (CEFR, henceforth). The main aim was to solve the lack of standardization in terms of language levels of proficiency and serve as a tool to define linguistic domains by making explicit the minimum requirements a student learning a foreign language should reach. The CEFR determines three different levels from basic linguistic knowledge (A), to independent user (B) and mastery of the language (C). These levels are subdivided into 1 or 2 depending on “higher and lower interpretations of the classic division into basic, intermediate and advanced” (Council of Europe, 2001: 23).

Figure 1: CEFR Levels of proficiency



For foreign language students, the way to get a specific level is by fulfilling the competence and descriptors on each specific skill. These descriptors of language proficiency serve as a reference to any language exams and levels. Thanks to this tool, the evaluation becomes easier, more objective and, most importantly, the same for everyone across Europe.

³ The complete CEFRL is available online at: <https://rm.coe.int/16802fc1bf>

All the aspects and definitions explained above will shed some light on understanding what bilingual education means. In the light of the different definitions of bilingual given, I understand that all bilingual definitions provided by Wei (2000) in this text have a place in understanding bilingual education. First of all, students may start being receptive bilinguals understanding the language before being able to produce it. As they acquire language skills in their native language, students are very likely to transfer them to the new language becoming subtractive bilinguals. Later, students become functional bilinguals with different levels of competence on each language skill. Finally, they may reach the concept of balanced bilingual mastering both languages to the same extent. All things considered, secondary bilinguals would adjust just fine to the definition of bilingual in bilingual education, as the truth is that students gain a new language thanks to formal instruction.

As far as bilingual education is concerned, there are as many different programmes as types of bilinguals. Each country is unique in its economic, social and political factors that apply to education. The particular configuration of each country and its alliances with other countries shape the way they understand bilingual education. In the following lines, the most representative bilingual educational programmes in Europe will be illustrated in order to get an overview of how these programmes have influenced the ones in Spain and the *Comunidad de Madrid* in particular.

1.2. The most representative bilingual models across Europe

In 1995, the European Commission developed a White Paper⁴ to offer possible protocols as far as education and training are concerned. In this report, one of the main objectives was to develop proficiency in at least three European languages. This made necessary a new perspective and methodology to learn foreign languages at school. For that reason, Baetens (2002) highlights the importance of the involvement of subject teachers who grant time of their areas of expertise in favour of language learning and teaching. As Coyle, Hood and Marsh (2010) suggest, this implies using English as a vehicle to learn contents, officially named, Content and Language Integrated Learning (henceforth CLIL). As Garrido (2016) puts it, the problem was that the teaching of one or

⁴ Complete White Paper on Education and Training (1995) available at: <https://publications.europa.eu/en/publication-detail/-/publication/d0a8aa7a-5311-4eee-904c-98fa541108d8/language-en>

two foreign languages was time consuming and made educational programmes quite extended. Hence, CLIL was born as a way to amalgamate content and language to ease this obstacle. Furthermore, Garrido (2016) argues that CLIL and bilingual education go hand in hand and cannot be divided.

In order to understand how CLIL has been implemented across Europe, the most representative bilingual programmes will be described. The bilingual education context in the countries of Germany and France will be analysed due to their Treaty of Amity and Cooperation being on-going for more than 50 years. Furthermore, Luxemburg multilingual context will be depicted owing to its unique political situation and the impact it has in this country's language learning.

1.2.1. Germany

The German and French bilingual programmes were the consequence of the signature of the Treaty of Amity in 1963 between the German Federal Republic and the French Republic. Due to the good relationship between both countries, in 1994 the *Abibac*⁵ was created in which, one of the most important features, is that students get double certification German and French at the end of their baccalaureate. The *Abibac* certifies students to the highest secondary education level in both countries. In this programme, Language and Literature are learnt in French in Germany or in German in France, History and Geography are learnt in German in France and History plus an additional discipline in Social Sciences are learnt in French in Germany. In addition to this, the *Abibac* establishes a minimum of nine hours a week of the foreign language respectively. The possibility to get this certification enables mobility and promotes labour relationships for the population of both countries.

Additionally, according to Pont (2011) the Federal Republic of Germany also counts with a National Bilingual Programme where the *Länder* have the competence to shape the programme to its particular context. Its main aim is to improve oral communication in a foreign language. Each Land establishes the learning of a foreign language from third grade even though in some other Lands they start a bit earlier.

⁵ Abibac description available at the Ministère de L'Éducation Nationale et de la Jeunesse: <http://www.education.gouv.fr/cid20998/l-abibac.html&xtmc=langues&xtnp=1&xtr=2>

1.2.2. France

Undoubtedly, France shares the Treaty of Amity signed in 1963 with Germany with the characteristics that were mentioned above. Furthermore, France is a country with a large immigrant population that certainly makes an impact in its educational laws and bilingual programmes in order to attain integration. In addition to this, learning a foreign language is key throughout their educational system. According to Hélot (2008), bilingual education means getting students schooled in two languages by allowing them to learn a foreign language through other subjects. She argues that learning a foreign language through other content subjects is indeed bilingual education, whilst learning a foreign language for three hours a week is not.

Furthermore, France has also incremented the time devoted to foreign language learning in secondary education creating the European and International sections (Hélot, 2018). European sections choose CLIL methodology for at least one subject adding more time for the foreign language in higher levels so students can get the ‘European Mention’ at the end of their studies. In the case of the international section, this is only possible when at least one out of four students have different or double nationality. In addition to that, France and the country of that particular international section must work in collaboration in the curriculum development (Garrido, 2016).

1.2.3. Luxemburg

According to Eurydice Network⁶, the country of Luxemburg limits border with France, Belgium and Germany. The national language is Luxembourgish but French and German are also considered as official in legislative, administrative and judicial matters. This makes all schools offer programmes to enhance the learning of three languages. Primary Education is divided in three levels; the two first years are devoted to Luxembourgish although German is shortly introduced during the first year. In addition to this, French is included at the end of primary education that gives ground in favour of

⁶ This website provides with specific National Education Systems overview for each country of the Member States of the European Union: https://eacea.ec.europa.eu/national-policies/eurydice/content/luxembourg_en

German during secondary education (Garrido, 2016). As the Eurydice Network⁷ reports, this is the country with the highest number of foreign languages learnt per student although most students do not necessarily speak the language of instruction learnt at school at home.

Now that a brief overview of the most representative features of bilingual curricular models in Europe, I will concern myself with a review of bilingual education in Spain in general and the *Comunidad de Madrid* in particular.

1.3. A brief overview of bilingual education in Spain

According to the report published in 2013, European and Spanish educational objectives. Strategy, Education and Training 2020⁸, at least 50% of students in bilingual programmes should reach a B1 CEFR level in English at the end of secondary and 75% of students should be enrolled in one or two other foreign languages by 2020. The Spanish Ministry of Education, Culture and Sports is actively participating in all initiatives promoted by the European Commission for these matters. As Ramirez-Verdugo (2010) highlights, there is a significant boost in bilingual education throughout Europe adapting CLIL methodology to different foreign languages. As Lagabaster and Ruiz de Zarobe, 2010: 9 put it:

In the last decade CLIL (Content and Language Integrated Learning) has undergone a rapid development in the Spanish scenario. This is the result of a commitment with the European policies aimed at fostering multilingualism and a growing awareness of the need to learn foreign languages.

In reference to CLIL implementation in Spain, there are many differences between the territories since it is a country of great diversity in terms of linguistics. Our country is divided into 17 autonomous communities and the two autonomous cities of Ceuta and Melilla. On the one hand, there are monolingual regions where Spanish is the official language and CLIL is implemented to teach English as a foreign language and one or two other languages such as French or German. On the other, there are bilingual regions where,

⁷ This website provides with specific National Education Systems overview for each country of the Member States of the European Union: https://eacea.ec.europa.eu/national-policies/eurydice/content/luxembourg_en

⁸ Consult the complete 2013 report and the Linguistic Competence of Foreign Languages (page 25) at: <http://www.mecd.gob.es/dctm/inee/indicadores-educativos/informeet20202013.pdf?documentId=0901e72b81732dc8>

in addition to Spanish, there are co-official languages (Catalan, Galician and Basque) and dialects (Valencian, Majorcan, Bable), adding one or two foreign languages during mandatory education. As for CLIL, since every autonomous community adapts the current law on education (*Ley Orgánica 8/2013 para la Mejora de la Calidad Educativa, LOMCE*)⁹ to their territories, there are many differences in the way it is implemented. In spite of this, all autonomous communities, as Garrido (2016) points out, have adopted CLIL methodology to their contexts promoting bilingual and multilingualism.

In order to centre the aim of this research and due to the differences in organization of the regions in the Spanish territory, this doctoral dissertation will focus on the organization of bilingual education and CLIL in the *Comunidad de Madrid* in primary education.

1.3.1. CLIL in the *Comunidad de Madrid*

The progress and growth of the bilingual programme have been the two main priorities of the Regional Department of Education in the *Comunidad de Madrid* (CAM, henceforth) for all levels of education (Gerena and Ramirez, 2014). The CAM started its bilingual journey in 2004 with 26 bilingual schools and in 2017 counted with 687 bilingual educational centres¹⁰. That is so, that in several cities and towns of Madrid the number of bilingual schools and high schools has in many cases outnumbered, the non-bilingual ones.

Taking as an example the town where the research of this doctoral dissertation will be put into practice: in *San Sebastián de los Reyes* there are fifteen public schools¹¹, eight of them are already bilingual¹² and four additional ones have applied to become bilingual

⁹ Ley Orgánica para la Mejora de la Calidad Educativa: Consolidated text at: <https://www.boe.es/buscar/act.php?id=BOE-A-2013-12886>

¹⁰ Find more information about CLIL implementation in Spain from the file published by the ‘*Asociación de Enseñanza Bilingüe*’ (2017) <http://www.ebspain.es/pdfs/ccaa/MADRIDr.pdf>

¹¹ *San Sebastián de los Reyes* Schools’ guide for parents: http://www.ssreyes.org/acces/recursos/doc/Servicios_municipales/Educacion/Publicaciones/1171529353_123201813134.pdf

¹² List of bilingual public schools in the North of Madrid area: https://www.educa2.madrid.org/web/educamadrid/principal/files/8c5dec3a-4665-4b9d-a373-46ab12fbef6b/Documentos/Curso%202015_2016/Listados%20centros%20bilingües/lista_ceip_Norte.pdf?t=1454521367762

for the academic year 2019/2020 (in press)¹³. In the past, only children from wealthy families could study in a bilingual school and these usually were expensive, exclusive and private centres. However, the implementation of bilingual programmes across Europe has made learning a foreign language more accessible and not elitist (Marsh, 2002). Nowadays, parents tend to choose bilingual over (only) Spanish instruction regardless their socio-economic status. Already in 2017 a 45% of students in primary education and 42,5% in secondary education were enrolled in bilingual schools¹⁴, a number that increases every academic year due to the expansion of the bilingual project. Moreover, some schools with fewer students or in more underprivileged areas of the city tend to apply to become bilingual with the hope of boosting their schools or making them more eligible so they do not disappear.

In the *CAM*, two different programmes still co-exist: the *MEC*/British Council project since 1996 and the *CAM* project since 2004. With regard to the *MEC*/British Council project, this initiative was pioneering in Europe and Spain and it was a remarkable milestone that subsequent bilingual programmes have taken into consideration to design their own (Dobson et al., 2010). The project started in *Madrid* but it is also carried out in 10 other autonomous communities. In this project, there are around 89 schools and 56 high schools in which 40% of the time is dedicated to English and 60% to Spanish¹⁵. Furthermore, the British Council and the Ministry of Education work together in the curricular design of all academic levels. This project was exclusively designed for state schools and promotes the learning of the first foreign language from the beginning of formal instruction¹⁶.

¹³ Local news website in which the current situation in the municipality is depicted with regard to bilingual education: <https://www.esloquehay.es/los-colegios-de-sanse-sucumben-al-bilinguismo/>

¹⁴ Data taken from the 1st part of the Evaluation of the Bilingual Programme in the *Comunidad de Madrid*. *I Fase de la evaluación de Programa Bilingüe de la Comunidad de Madrid*. Available at: <http://ebspain.es/index.php/articulos>

¹⁵ This data was taken from the British Council webpage. In addition, this link offers free downloads that explain further about the programme and its evaluation. Available at: <https://www.britishcouncil.es/programas/educacion/educacion-bilingue>

¹⁶ Spanish and English primary integrated curriculum. Language and Literacy. Available at: <http://www.educacionyfp.gob.es/educacion/mc/bilinguismo/convenio-mecd-bc/curriculos.html>

The CAM bilingual project counts with 379 public and 218 semi-private schools and 166 high schools in the 2018/2019 school year¹⁷. This project establishes that at least thirty per cent of the subjects taught at school have to be using English as a vehicular language with the exception of Spanish language and Literature and Mathematics. In Madrid, the most common subjects taught in English tend to be Natural and Social Sciences, Art, Music and Physical Education as long as the teacher is certified with a C1 level of the Common European Framework of Reference for Languages (CEFR). The general objective of the bilingual programme in the province of *Madrid* is to give lessons in English through CLIL¹⁸ so that students can end up with an A2 CEFR level at the end of primary education and between B1/B2 level at the end of secondary education. Throughout mandatory education, students have to take different external exams that will determine their level of language and will also help as an evaluation of the programme. Although these exams mainly focus on testing oral skills at the beginning of primary education, students at the end of primary education will take an external exam that will determine whether they go to ‘*sección/programa bilingüe*’ during secondary education. This last exam includes the four main language skills: listening, speaking, reading and writing and it is either organized by Trinity, Cambridge or the Official School of Languages.

According to Madrid government’s evaluation report published in June of 2018¹⁹, external exams are an essential tool to measure and guarantee the quality of the bilingual programme. Even though more importance is given to the development of oral skills at the beginning of primary level, students still have to take written tests at the end of the elementary stage that will determine whether or not they study in English their secondary education. Thus, the teaching and reinforcement of written language skills is of paramount importance across this educational stage and should not be relegated to the last years of

¹⁷ Numbers taken from the *Evaluación del Programa Bilingüe de la CAM Junio 2018* (p.12):
http://www.comunidad.madrid/sites/default/files/doc/educacion/sgea_eval_programabilingue_2018.pdf

¹⁸ Further information on the objectives of bilingual education (p.6) and the *Evaluación del Programa Bilingüe de la CAM Junio 2018*:
https://www.comunidad.madrid/sites/default/files/doc/educacion/sgea_eval_programabilingue_2018.pdf

¹⁹ Find the complete 2018 *Comunidad de Madrid Bilingual Programme Evaluation* report and information about external evaluations (p.25) at:
https://www.comunidad.madrid/sites/default/files/doc/educacion/sgea_eval_programabilingue_2018.pdf

primary education. Yet, this is not what happens in practice. In fact, Gerde, Bingham and Wasik (2012) in their research about “Writing in Early Childhood Practices” highlight how emergent writing skills were an “underrepresented activity” or “non-existent” in preschool classrooms and how this can affect to reading and literacy skills development. Consequently, writing skills should be introduced as soon as possible.

The earlier foreign language instruction begins, the more efficiently and effectively the brain is able to learn its accent and grammar. Beginning foreign language instruction in pre-primary or primary school therefore gives students a biological advantage for learning certain aspects of that language. (Hinton et al, 2008: 99)

Although Dörnyei (2009) explains how the role of age in language acquisition can be contradictory since adult learners may have a greater control of morphological, syntactic and lexical elements of the new language, students who are surrounded with the foreign language at an early age can reach a level of competence that adults could never get (Schouten, 2009). This evidence was first pointed out by Lenneberg (1969) and named as the critical period hypothesis. This theory argues that once the brain has reached its total maturity (around puberty), certain capacities related to language acquisition are locked. Once this happens, it becomes very difficult to master any language the way a child would do.

Thirty years after Lenneberg’s hypothesis, Bialystok and Hakuta (1999) conclude their research by claiming that not only informal information demonstrates that young learners tend to be better at second language learning, but also empirical studies certify this fact. Nonetheless, they also argue that some adults are capable of achieving native-like control of the language or be as good as young learners, although ‘the older group’ of their research always performed poorer than the younger one. In addition to this, Hartsome et al. (2018) argue in favour of the existence of the critical period hypothesis for second language acquisition. They claim that native-like control of the language is only possible when the language is learnt in childhood due to the accent and grammar lacks adult learners often have. Nevertheless, they argue that the age of blockage happens quite later than puberty, around 17 years old. Consequently, the earlier students dive into the development of all skills in the foreign language, the best chances to naturally acquire the language before their brain makes it more difficult for them in some aspects.

One of the goals of bilingual education is to prepare students in order to become competent in a foreign language; that is to say, to prepare students for using the language in authentic situations so that they can access to more opportunities in the globalised world we live in (Crystal, 2003). According to Baker (2011), being competent in a foreign language, from the 1960s, has been considered as mastering a set of “listening, speaking, reading and writing and the components of knowledge comprise grammar, vocabulary, phonology and graphology” (Ibid. 13). Even though these theories did not include other important aspects such as the sociocultural and the sociolinguistic context of languages (Baker, 2011), it can be claimed that the four skills mentioned above have always been considered as vital for foreign language learners (Harmer, 2001).

In this section, the bilingual projects in the *CAM* have been outlined making special emphasis in the characteristics of the Bilingual Project of the *CAM* since it is the programme where this research will take place. In addition, the importance of including writing skills since the beginning of formal instruction in order to attain full communicative competence has been identified. In what follows, the development of reading and writing in English and English as a foreign language will be analysed to shed light into how spelling can aid the mentioned skills to promote literacy development in CLIL contexts. In addition, the importance of developing writing skills from the beginning of primary education will be considered.

1.4. The importance of spelling: reasons for teaching spelling and writing skills

Harmer (2001) attempted to draw a fine line between receptive skills (listening and reading) and productive skills (speaking and writing). Being able to communicate in any language comprises mastering the four skills mentioned whilst being able to interact with others in different contexts (Council of Europe, 2001). Hence, all skills must be taught and learnt in communicative situations where students can practice the language in use. Before the 1970s, learning English as a foreign language meant being able to read and write (or translate) in the foreign language. Unfortunately, students of these approaches were not able to use the language in authentic situations (Larsen-Freeman, 2000). For that reason, the Communicative Approach arose as a way to define what a speaker of a foreign language should know to communicate effectively or to be communicative competent (Hymes, 1971).

In order to be competent in a foreign language, the four skills mentioned above must be developed so students can understand and express the language orally as well as in writing. Since the topic of this doctoral dissertation deals with the development of a sub-skill of writing such as spelling, in what follows the receptive skill of reading and the productive skill of writing in the foreign language class will be reviewed. Additionally, the role that spelling plays in the learning of these two skills will be analysed.

1.4.1. Developing reading skills

According to Harmer (1998), the reasons why teachers should pay special attention to the development of reading skills are varied. In the first place, reading provides with rich input for language learners and contributes as a model for future writing. Furthermore, it is an opportunity to study the language in depth and the practice of the skill. As a result, Harmer (1998) criticises the view of reading seen as a passive skill. Accordingly, he claims how the identification of words, extracting ideas from a text and the development of a critical point of view of the reading material in front of us, are indeed active skills. In the same vein, Maclellan (1997) suggests how readers apply their own knowledge to the interpretation of meaning in an either conceptual (i.e. knowledge about language in a text) or strategic way (i.e. the set of strategies that enable readers to learn from what they read), which undoubtedly makes reading an active skill. With regard to the reading skills a student should acquire, Harmer (1998) points out how students should be able to extract the general idea skimming through the text to later be able to look for details by scanning information. He adds that the purpose of reading is also important since students need to know whether they are learning for pleasure or detailed comprehension in order to be able to make the most of the reading task at hand.

Reading is at the heart of learning due to the impact this skill has in making language and content accessible for students (Garipova and Román, 2016). This is because learning fluency and comprehension are related. As Pardo (2004: 273) claims: “In order to comprehend, readers must be able to read the words [...] Teachers support students’ continued development of automatic decoding through spelling, vocabulary, and high-frequency word activities”. Bearing in mind that reading fluency and comprehension are of vital importance for students to access knowledge, these kinds of activities must be therefore included in teaching plans as early as possible.

However, reading, as Hinton et al. (2008) point out, is the proficiency of several complex skills. To begin with, readers must have some knowledge at morphological, phonological and orthographic level. In fact, they explain how the orthographic symbols, of a rather variable number of combinations in the English language, must be understood as labels since not understanding them would be like having aimless signs on a paper. Adding to the previous skills, the reader's brain combines and uses other auxiliary strategies such as recognizing (or partially recognising) words, context clues and the understanding of syntactic rules, in order to extract meaning. In the same vein, Brewster et al. (2003) explain how children who know how to read in any language have become aware of speech representation in print, phonological, lexical, syntactic and semantic awareness and knowledge.

In this fashion, it seems appropriate to think that the first step is that students are familiar with letter names and they have developed some phonological awareness in order to be able to read (Leppanen et al., 2004). Regarding phonological awareness, Grossen (1997) in her study over 30 years in how children learn to read, highlights how "phonological awareness appears to be the most prevalent linguistic deficit in disabled readers" (1997:7). For that reason, she claims that the teaching of phonemic awareness should happen at an early age and should be complemented with explicit and systematic instruction in sound-spelling correspondences among other strategies. In contrast to these views, Freire (2005) argues that reading is a lot more than decoding language. He claims that readers get the culture of the world they are surrounded with from texts. Thus, it is fair to think that reading in the foreign language will also help students get acquainted with the culture imprinted. In view of this, given that CLIL involves the planning of content, communication, cognition and culture (Coyle et al., 2010), it can be expected that developing reading skills will help in this process.

Regarding learning to read in English as a foreign language, it is necessary to highlight how there is a distinctive code that learners need to decipher in each language in order to access meaning (Ziegler and Goswami, 2005). In this sense, even though there is not much research done in how reading skills in the first language help developing this skill in the foreign language (Brewster et al., 2003), it is widely accepted that the skills acquired in the first language will somehow aid the learning of the rest languages and skills (Cummins, 1979). Nonetheless, reading and spelling in English tends to be more

difficult for Spanish speakers since there are several sounds in words that can be pictured with one or more letters. In the English orthography system a single letter or combination of letters may have different pronunciations and “a phoneme can have multiple spellings” (Ziegler and Goswami, 2005:9). Consequently, Brewster et al. (2003) found out that native English speakers tend to fall behind in their reading skills, compared to Spanish or Italian speakers whose languages are easier to read due to the clear correspondence of sound and spelling.

For that reason, it seems advisable to reflect on the spelling of the written word as a way to help reading development (Moats, 2006). Without the proper reading skills, sooner or later students might find very difficult to gather information from the wide variety of written texts they are exposed to. Therefore, it seems fair to think that if students cannot easily recognize words whilst reading, they will end up losing interest and motivation in learning or it will make them feel less capable, which might lead to a school failure or even a drop out in the future (Reschly, 2010).

1.4.2. The role of spelling in developing reading skills

Bearing in mind the important role that reading plays in formal education and in life, Adams (1990) claims that spelling skills support reading development whilst helping with pronunciation and decoding new words. As Johnson (2013) points out, reading fluency and reading comprehension are highly influenced by the degree of accuracy in spelling. Consequently, reading and spelling are complementary. As a matter of fact, spelling and reading fall back on the same mental image of a word since “visual memory, or the ability to take mental pictures, is a vital skill in the process of reading” (Heath, 2007:47). Therefore, recognizing the correct spelling of a word is what makes fluent reading accessible (Snow et al., 2005).

Additionally, Martin-Chang et al. (2014) suggest that students who are proficient spellers are also fluent readers. This is because students who can spell correctly are faster at recognising the word than students who misspell the same word. In their research, they discovered that “the difference in reading speed appears to be a function of the orthographic representations stored in memory, rather than due solely to the general characteristics of the participants or the words” (Martin-Chang et al., 2014: 1500).

Therefore, the way individuals store spellings in their memory is more important than the word itself. This may indeed be a fortune gap for students learning through a second language who are formally taught effective spelling strategies.

As it was established above, developing phonemic awareness is an important factor to bear in mind when teaching to read. In this way, spelling can help students with phonemic awareness by making connections of the alphabetic principle to retrieve the pronunciation of printed words (Adams, 1990; Moats 2005/2006). Making sense of the structure of written words would be very difficult, for a student who is beginning to read and write, without some phonemic awareness instruction. Nevertheless, it is also true that the relationship among writing and speech is ambiguous (Shankweiler and Lundquist, 1992). As a result, the teaching of specific spelling strategies and learning about spelling may be an effective way for students to enhance reading skills (Jonhson, 2013).

Reading, spelling and writing are interrelated. As a consequence, some scholars like Krashen (1989) and Winch (2002) argue that the ability to spell accurately can be achieved without training while developing reading and writing skills. However, other researchers such as Shankweiler and Lunquist (1992) claim that spelling demands more orthographical knowledge than reading. As a matter of fact, although spelling and reading are complementary, spellers make a greater effort to withdraw information from memory (Ehri, 2000). For that reason, the power of teaching spelling techniques should not be underestimated (Ehri and Wilce, 1987) since its instruction whilst in the early stages of reading, can promote and strengthen phonological awareness and alphabetic understanding (Santoro et al., 2006).

Furthermore, Templeton and Morris' (1999) study on the most frequently questions about spelling asked by teachers highlight how teachers of all levels often tend to underestimate the power of teaching how to spell effectively as "orthographic or spelling knowledge is the engine that drives efficient reading as well as efficient writing" (Templeton and Morris, 1999:103). On a similar note, Graham and Santangelo (2014) claim that formal spelling instruction enhance not only spelling performance, but also that those spelling improvements students gain during instruction are retained over time. In like manner, by formal spelling instruction, students are able to write accurate spellings when writing texts.

In summary, reading skills in any language requires the individual to be able to put a series of strategies at work in order to be able to retrieve information from the written word. Among these strategies, phonological awareness was outlined as the primary source to begin with reading instruction, although the need to be complemented with other strategies, such systematic instruction in sound-spelling correspondences, were also analysed. With regard to reading in English for Spanish speakers, the literature reviewed indicates that the differences among both orthographical systems, makes English a bit harder to decode for students used to transparent languages. This was done in order to be able to illustrate how spelling and spelling instruction play an important role for the development of reading skills, and reading skills in the foreign language in particular. In the last section the connection between, reading, writing and spelling was established to take a step towards explaining the role of writing skills and spelling, which will be continued in the following sub-section.

1.4.3. Development of writing skills

As Chomsky (1986) states, humans have an innate ability to learn languages and apply grammatical rules in a subconscious way. Other scholars like Krashen (1982) agree that the acquisition of language is a natural process gained from comprehensible input. Likewise, Krashen and Terrell (1983) argue that acquisition happens naturally although this can be enhanced in the classroom so students not only learn but also acquire the language. However, not all language skills develop the same way. Even though oral skills can be grasped from continuous exposure to the language, writing skills need to be trained in order to achieve proficiency. As a matter of fact, Literacy²⁰ is “a purely cultural achievement that may never be learned at all (Kellogg, 2008:2)”. As it was stated above, writing in English is as complex as reading in terms of the lack of correspondence in phoneme-grapheme (see section 1.4. 3). Furthermore, writing not only requires to decode language but to produce it, if possible, in a clear way to avoid misunderstandings. For that reason, it is advisable to review the development of writing skills in teaching contexts.

²⁰ While a variety of definitions of the term Literacy have been suggested, this paper will use the definition suggested by McBride-Chang (2014) review on children’s literacy development comparing Chinese and American monolingual readers who highlights how “Literacy is defined here as the ability to read and write (p.4). Additionally, the term Literacy is understood as the ability to read and write according to the definitions provided by Oxford and Cambridge online dictionaries among others.

Even though in formal education there is an inclination to teach oral skills in a major degree than writing skills (Aliaño, 2017), Harmer (1998) maintains that there are four main reasons for teaching writing to students. He claims that writing helps as reinforcement since the visual demonstration of language supports the memorization of new language. Harmer adds that writing helps students, as it accompanies language development while taking into consideration “the mental activity we have to go through in order to construct proper written texts” (1998:79). With regard to learning style, Harmer points out that by learning in different ways, some of us may prefer to produce language at our own pace. Finally, he justifies that probably the most important reason for teaching writing is that “it is a basic language skill, just as important as speaking, listening and reading” (1998:79). In the same vein, Kovaríková (2016) highlights how the written language is the means by which knowledge of vocabulary and discourse connects.

In spite of the fact that past research has placed a lot more emphasis upon the development of reading skills, writing, as reported by Wagner et al. (2011), is gaining more importance. As they claim, the reality is that reading and writing are dependant on each other. However, children are usually taught how to read before they are taught how to write in formal education. The easier explanation to this fact is that the collocation of the expression ‘reading and writing’ sounds right, whereas ‘writing and reading’ sounds inappropriate. Therefore, from this fixed combination of words it can be assumed that reading comes before writing. As Elbow (2004) argues:

We could blame our blindness on the phrase "reading and writing," but that phrase—and the sequence it implies—merely encapsulates a deep cultural construction embedded in everyday language. The word literacy literally means power over letters—that is, over both writing and reading. But used casually (and in government policy and legislation), literacy tends to mean reading, not writing (p.10)

As a matter of fact, current law²¹ on education in the *CAM*, enhances the development of oral skills. It also describes that foreign language instruction should keep the sequence of listening, speaking, reading and writing presenting contents in that particular order. This is because writing is always presented as the most difficult skill to acquire. However, there is a large body of research suggesting that writing happens before reading. On the one hand, Chomsky (1971:296) suggests that “the natural order is writing first, and then reading what you have written”. She also defends that allowing students to write the spellings of familiar words by means of sensory activities, is a way to make active participants of the learning to read process. Treiman and Bourassa (2000a) add that children from an early age are eager to represent these symbols before they learn the name and sound (or sounds) assigned to that specific letter. Likewise, children at early age already have literacy skills since they are able to invent their own spelling of words (Read, 1971) before they are even able to read (Shankweiler and Lunquist, 1992). Similarly, Shankweiler and Lunquist (1992) claim:

Some writers have suggested that, contrary to the view that reading is easier, children may indeed be ready to write words, in some fashion, before they are able to use the alphabetic principle productively in reading. Montessori (1964) expressed this view, and it has more recently been articulated by several prominent teachers. (p.138)

For all the reasons stated above, it seems that there is a natural predisposition that makes students at a very early age be eager to write letters and form words. Hence, there is no need to delay teaching written skills since they usually happen along with learning how to read and spell (Ritchey, 2008). Consequently, the teaching of writing skills should not be delayed but be enhanced from the beginning of formal instruction. As it has been mentioned before, learning to read and write develops jointly. Whether reading happens before writing or vice versa, both processes require being able to identify the correct spelling of a word. Thus, learning to spell words takes place at the same time literacy skills develop. This makes necessary to review how spelling can aid with the development of writing skills, the same way it was done with reading skills in the previous section.

²¹ *Decreto 89/2014 de 24 de Julio, del Consejo de Gobierno, por el que se establece para la Comunidad de Madrid el Currículo de la Educación Primaria.* Retrieved from: https://www.bocm.es/boletin/CM_Orden_BOCM/2014/07/25/BOCM-20140725-1.PDF

1.4.4. The role of spelling in developing writing skills

Spelling is key when getting the message across in written communication. When writing, as Davenport et al. (2009) suggest, spelling is of great value since it is the key factor that enables the writer to be able to express his or her ideas conveniently. In point of fact, Hashemi and Ghalkani (2016:730) conceptualise spelling as “one of the sub-skills of practical and effective written communication”. In spite of that, many people would think that teaching and learning spelling is not important since our students will be likely to mostly write in electronic devices, and most word processors come with the tool ‘spell check’ to correct our writings. Although it may be true that using spell checkers in the Internet era is as usual as using the calculators in our mobile phones for basic mathematical operations in real life, spell checkers are not completely accurate.

In this regard, Montgomery et al. (2001) argue that this word processors’ tool can only catch between thirty and eighty percent of errors and in the case of students with learning difficulties, only fifty-three percent of correct guesses of words were pointed out. In reality, in order to get these spell checkers to guess the correct word, the writer has to give the correct order of a reasonable number of letters in a word to be able to provide with the right term. Therefore, this tool would never work for students who are (or think of themselves as) terrible spellers. As Moats (2015/2016) describes:

Those of us who can spell reasonably well take for granted the role that spell plays in daily life. Filing alphabetically; looking up words in a phone book, dictionary, or thesaurus; recognizing the right choice from the possibilities presented by a spell checker; writing notes that others can read—and even playing parlor games—are all dependent on spelling (p. 14).

Even though spelling skills can be taken for granted, these play a crucial role in real life and the development Literacy skills. In spite of this, the study of spelling has been overlooked as it has often been considered a sub skill that mostly relies on memory (Shankweiler and Lunquist, 1992). As Chandler (2000) argues, spelling can help students learning to read and write and it is often considered a tool for communication but not an end by itself. Perhaps, these are some of the reasons why spelling is not always covered in language teaching (Cook, 2001). Consequently, it is necessary to stress the importance of spelling as one more tool students can benefit from in their journey to Literacy.

In this respect, as it was highlighted before, spelling instruction can contribute to phonological awareness and alphabetic understanding in the early stages of reading (Santoro et al., 2006). Similarly, alphabet, phonological and print knowledge are necessary when it comes to writing. In addition to these skills, Puranik et al. (2011) point out how letter writing and blending skills are also necessary. On the one hand, children need to have blending abilities that help them to organise the sounds in their minds in order to be able to write the word. On the other, they suggest that children also need to be able to write letters, which it is considered the most powerful skill to achieve spelling proficiency.

In line with the evidence showed in the previous section (see section 1.4.2), it seems clear that learning to read and spell are dependent on the same set of skills (Rieben et al., 2005). The same way, it has been pointed out how features such as phonemic awareness or alphabet knowledge are also important in writing. For that reason, combining the teaching of reading, writing and spelling will strengthen the learning of all these skills (Hashemi and Ghalkhani, 2016). However, Kellogg (2008) claims that even though reading and writing are facilitated by the knowledge of the phonological speech system, the knowledge of the orthographical system is also significant. Therefore, spelling is something that needs to be trained and learnt that will not only come from reading and writing practice. In fact, as soon as students are able to start writing words, spelling becomes essential as a means towards effective writing (Aliaño, 2017).

In a nutshell, writing skills are as important as reading skills. Alike, reading and writing are as significant and powerful as oral skills from the beginning of formal education. For that reason, it has been noted how writing skills should be introduced in parallel with the rest of skills. Furthermore, whether it is developing reading or writing, it has been emphasised how spelling is fundamental for the achievement of both with the aim of language proficiency. However, learning to read and write in bilingual settings happens at the very same time in two languages. Thus, students are learning to decode two different languages, which indeed require an additional effort. With that in mind, the next section tries to shed further light on how spelling instruction can play an important role in the development of reading and writing in CLIL contexts.

1.4.5. Reading, writing and spelling in CLIL contexts

Native children of any language count with an advantage that foreign language learners do not have. From birth, they have been surrounded by the language and have been learning “the phonological rules of English that relate underlying representations to sound” (Chomsky, 1970: 299). As a consequence, it becomes easier to decode the linguistic and phonological aspects of the mother tongue due to the time of language exposure in context (Chomsky, 1976). In CLIL educational contexts, the natural acquisition of languages and communicative approaches are accentuated and thereby, the development of oral skills is fundamental in bilingual schools. From this perspective, Aliaño (2017) argue that there is a tendency to delay written skills in the foreign language, as they may seem more complicated to acquire. Nevertheless, as stated above in this text, prominent writers suggest that not only reading, writing and spelling develop in an interrelated way (Hashemi and Ghalkhani, 2016) but also, they claim that written skills should not be delayed as they may come before reading (Chomsky, 1970; 1971; 1976; Treiman and Bourassa, 2000a; Elbow, 2004).

Students who learn contents through a foreign language face the challenge of having to simultaneously learn new concepts whilst having to understand them in a foreign language (Halbach, 2012). Among the challenges that students in bilingual schools confront, reading and writing in English is certainly one of them. As it was outlined in the introduction, it is a well-known fact that English is orthographically complex. In contrast, Spanish language orthographical system is quite clear and consistent. Yet in any language, the relationship between what one hears into what one writes, “depends on a clear understanding of the phonological units that are converted into orthographical functional units” (Alvarez et al., 2009: 206). In like manner, Perfetti (2007) justifies that the way individuals can recall spellings are three: the way it sounds, the way is written and the concept that represents. Therefore, some phonemic awareness, spelling instruction and visual aids are needed when it comes to spelling. Since attention on phonemic awareness has been drawn whilst describing the development of reading and writing skills, it seems appropriate to tap into specific spelling instruction and visual aids as way to ease the process of learning to read and write in the foreign language, in CLIL contexts.

With regard to spelling instruction, traditionally reading research has been granted a lot more value compared to writing research (Wagner et al., 2011). Nonetheless, the studies of reading skills of CLIL in Spain are not many (Perez-Cañado, 2012). Hence, we can assume that studies of spelling in CLIL contexts are even fewer. Consequently, there is a gap in the literature that needs to be fulfilled in terms of vocabulary knowledge and spelling of specific content words. For instance, in relation to vocabulary eligibility, Hashemi and Ghalkhani (2016) claim that this should be introduced from general to specific and specialized words. Nevertheless, in the CLIL classroom is not always possible to do it this way.

Students in the CLIL classroom usually face technical and specific words related to the natural and social sciences world (such as heterogeneous, homogeneous, weather, biosphere, chemicals, etc.), before they even see simple or high frequency words printed. As mentioned earlier, reading fluency and spelling is more about the orthographical representation of words stored in memory than the word themselves (Martin-Chang et al., 2014). However, teachers expect students to learn how to spell words correctly by memorizing them from lists without teaching them any spelling strategy to help them retain certain words (Westwood, 2005). As a result, students end up not being able to use the correct spelling when writing compositions (Beckham-Hungler and Williams, 2003). Reasons why some time should be allowed for storing the spelling of content words in memory by means of meaningful strategies.

With reference to visual aids, it is undeniable the powerful aid visuals are in the foreign language class (Pateşan et al., 2018). In this respect, Aliaño's (2017) study about the contribution of imagery to the learning of English spelling, stresses the importance, in her own words, of "allowing students to see orthography" (Aliaño, 2017:66) by decorating the classroom with the written form of different words. Concretely, her research concludes by affirming how visual support enhances and improves the acquisition of spelling as different learning styles are activated. In the same vein, Treiman and Bourassa's (2000b) research about children's written and oral spelling suggest "that the linguistic analysis of spoken words - a major component of spelling- is facilitated when the results of the analysis can be represented in a visible and lasting form" (Treiman and Bourassa, 2000b: 201). Added to that, they emphasise how written spellings produced by students are more rigorous, than those constructed aurally.

Furthermore, with the use of Internet in our classrooms we can find images about almost any concept in life that may help students understanding new language. In this regard, Dolati (2011) argues that even though pictures are the most common way to supply the learning of the words, not all the words can be put into a picture. In the CLIL classroom, students may encounter abstract concepts that can be put into words but not pictures. For instance, it is possible to represent sunny, foggy, hill, mountain range or even the planets in the Solar System using pictures to name a few. However, it is not always possible to use images to represent the abstract concepts of respect, values, freedom and justice, concepts and words that may arise in the Social Science or Art classroom. According to Borghi et al. (2018), the way individuals learn these concepts and words are by the social experiences they share with others. This being said, it is necessary to bring to light that understanding a concept is not the same as using the correct spelling when writing about it.

Regarding writing skills, if there was a skill that is more likely to have more time invested in the class that would be reading (Treiman, 1998). In point of fact, as discussed earlier, some scholars may think that spelling instruction is not necessary, since immersing students in reading and writing should be enough (Krashen, 1989; Winch, 2002) or think that spelling instruction is “not effective or efficient” (Graham and Santangelo, 2014:1703). Nevertheless, in CLIL contexts, the time students are exposed to English is quite limited as in many occasions this only happens at school. In that regard, Nieto Moreno de Diezmas (2016) claims that learners in CLIL contexts tend to be best at spoken interaction compared to students learning English as a foreign language. However, she highlights that reading and writing development are not significantly improved with CLIL methodology even if CLIL students show higher results than English as a Foreign Language students. Consequently, the improvement of speaking skills might have overshadowed the development of the rest of the skills in CLIL contexts. This may be due to the fact that every so often CLIL teachers tend to praise the effort to convey written words in the foreign language over accuracy. Proof to this is Tragant et al.’s (2016) study on vocabulary learning at primary school in which they compare CLIL to EFL students. They conclude by saying: “In scoring tests, correctly produced items were awarded one point, even if words were misspelled” (Ibid.: 584). Truth is that in many cases, everything is possible and readable as long as new concepts are understood and students are able to express it orally.

In the first years of primary education, writing is usually neglected in favour of speaking, perhaps because “the level of accuracy in writing is traditionally required to be much higher” (Kovaríková 2016:12); thus, communication becomes more demanding. Indebted to Simonsen and Gunther (2001), Reed (2012) explains:

At times, spelling has been marginalized in education; presumably because teachers either place more importance on other reading and writing skills^[1] or believe that the English language spelling system is too irregular and unpredictable to make instruction profitable (p.5)

In CLIL settings, time constraints make teachers draw attention to skills that are considered more important, such as spoken proficiency in the first place or reading and writing afterwards. However, it has been analysed how the two latter cannot happen without the understanding of the spelling system. Additionally, students at the beginning of the bilingual programme have just started to develop writing skills in Spanish and are still learning the ins and outs of handwriting. For that reason, Treiman and Bourassa (2000b) point out that it is important to take into account that handwriting problems can aggravate spelling difficulties. Consequently, writing skills in the foreign language class tend to be delayed hoping that once the students are “literate in their first language they can transfer some of their knowledge and skills in first language reading to second foreign reading” (Nagy et al., 1993: 242).

Contrary to this view, in the previous sections evidence shows that the development of reading and writing (and spelling) should not be delayed but be worked simultaneously, which in CLIL contexts means in two languages. If the main goal is to get students use the language in authentic situations (Savignon, 2004), the teacher has to provide with scaffolding techniques (Walqui, 2006) that promote students to learn how to learn. In the CLIL classroom, sometimes students are asked to reflect about a topic or to write a short text to share their ideas with a language structure that is new to them. With this in mind, it is necessary to make use of all the equipment and materials that may help getting the message across, and for students to create their own language with the linguistic resources they have.

As noted earlier, even though the bilingual programme has inevitably increased the level of our students' proficiency, there is a lack of time and commitment to reinforce writing skills during the early years of primary education. In language teaching oral skills are the first skills to be acquired. Nevertheless, we have seen the need to gradually develop writing skills. As a matter of fact, reading comprehension and proficient writing skills are foretells of academic achievement and "a basic requirement for participation in civic life and in global economy (Graham and Perin, 2007: 3).

Our students will be very likely to maintain relationships with other international people, study or apply for jobs abroad in the future. Thanks to the worldwide web, it is fair to think that these first exchanges will be possible in the form of a written text from a number of social media and apps that they have at the tip of their fingers. If the main goal is to prepare students to communicate and socialise in a world where languages are not considered a barrier anymore (Crystal, 2003), it could be argued that one of the most important facts is that "accurate spelling is a laudable goal, and not only because poor spelling is often interpreted as a sign of laziness or a lack of intelligence" (Reed, 2012: 24). Consequently, there are many reasons why teachers should pay special attention to spelling and orthographic skills in general and in CLIL settings in particular. In real life, having orthographic mistakes in presentation letters and resumes when applying for a job might be seen as a warning of the cultural level of an individual.

In conclusion, learning through English in CLIL contexts is not the same as learning English as a foreign language, nor learning the first language. The time of exposure to the foreign language is limited and, therefore, students, even though they have acquired a good level of oral communicative competence, face the challenge of writing about content subjects with vocabulary that it is in fact demanding. In order to be able to read and write in English, students have to understand the language at phonological and orthographical levels. While language exposure in every form (oral or written) has, on the one hand, been proven as a very powerful source for language learning, literature argue, on the other hand, how this is not totally successful when it comes to writing and spelling and that some training is needed.

Explicit spelling instruction and the use of visuals and imagery in the foreign language can be part of this training. Furthermore, effective writing skills have been identified as a valuable tool for the future of students not only at academic level, but also

as a way to improve language confidence. In addition to this, the view of good spelling as a remark of one's cultural level and performance has been analysed in an attempt to explain how these skills are also important after formal instruction and in real life. However, we have seen throughout the chapter how the teaching of writing skills is minimized (and spelling instruction has often been neglected) in favour of oral skills. This is due to the fact that in the first stages of primary education, when students are learning reading and writing skills in Spanish, writing skills in English are delayed as a hope for, once students are literate in their first language, they can transfer these skills to English.

1.5. Summary

In the first part of this chapter the terms bilingual, bilingualism and bilingual education have been described. This helped building a bridge towards reviewing CLIL implementation in Europe, Spain and particularly, in the *Comunidad de Madrid*. By doing this, we could find out how the role of external exams, based in the CEFR, is critical to decide on students' future and continuity in the bilingual programme during secondary. This served as background information to highlight the importance of early development of reading and writing skills in CLIL settings.

Within this framework, the literature reviewed indicates that the development of reading, writing and spelling skills are interrelated. Regarding reading skills, research done suggests that phonological awareness (although important) is not enough when learning to read and trying to decode new language. Other aspects such as morphology, lexical, syntactic, semantic, orthographical knowledge and systematic instruction in sound-spelling correspondences must be also considered. Additionally, students need to be familiar with the letter names and the sounds they represent. In terms of reading development, contrary to the view that spelling can be acquired through reading and writing, spelling instruction has been identified as a powerful source that enhances reading fluency and comprehension. This is due to the role that visual memory plays in recognizing spellings.

As for the development of writing skills, the standing literature suggests that contrary to popular opinion, these should be promoted from the beginning of formal instruction and not after students have acquired other skills such as speaking or reading. Both, reading and writing demand identifying the spelling of words. However, traditionally, spelling skills have not been considered important as they mostly rely on memory. Although this may be true, spelling knowledge is not always acquired exposing students to language, nor copying words from lists. Spelling should be trained since it is undeniable that the role spelling plays is essential towards effective written communication.

In the last part of this chapter, the development of reading, writing and spelling in CLIL contexts has been outlined. In bilingual schools, students are learning two or more languages at the same time. Therefore, the development of all language skills happens, without delay, in more than one language. Furthermore, the irregularities in the English spelling system compared to Spanish are a barrier that needs to be undertaken. In this sense, we have seen how writing skills are often relegated in an attempt to oral proficiency. However, by means of spelling instruction, visual aids and writing practice, students can improve reading and writing skills in CLIL contexts.

Now that the importance of spelling skills in reading and writing in CLIL contexts has been discussed, the second chapter deals with the role of Krashen's affective filter, emotions, Neuro Linguistic Programming (NLP) and their implications to content and language teaching. This has been done in order to help the reader understand how motivation, self-confidence and reduced anxiety are crucial in language learning. In the same spirit, NLP will be described as a tool that will help teachers and students recognize their beliefs, behaviour and cognitive strategies they use when learning languages. Regarding learning strategies, the NLP spelling strategy will be delineated as an instrument to store the spelling of specific content words (sometimes above students' level of proficiency) in memory, by means of visual representation of words. Finally, I will analyse the NLP spelling strategy in order to frame how this procedure can support vocabulary learning in CLIL contexts.

CHAPTER 2. THE ROLE OF EMOTIONS AND NEURO LINGUISTIC PROGRAMMING: IMPLICATIONS TO FOREIGN LANGUAGE LEARNING TEACHING

2.1. Unlocking the role of emotions: Krashen's affective filter variables and implications to CLIL teaching and learning

Hinton, Miyamoto and Della-Chiesa (2008) claim that from birth, all that we learn is influenced by the circumstances we are surrounded with, from the language that we acquire as our mother tongue to the way our personalities are shaped. More specifically, they argue that the brain is designed to make sense of the world around us and highlight how culture plays a predominant role in casting our experiences. In this regard, they understand culture as the values, expectations, practices and aspirations that “influence a wide range of experiences, such as how much time children spend in schools or how teachers tend to respond to mistakes” (Ibid.: 88). In a previous study, Stigler and Stevenson (1991) analyse how the way teachers approach mistakes, changes the culture of learning since they are seen as opportunities to diagnose learning deficits and forge understanding.

Furthermore, Hinton et al. (2008) explain how learning is more effective when stress and fear at school are minimized and when the environment in which learning occurs is positive and motivating to students. In the same vein, they argue that the same way negative emotions block learning, positive emotions can impulse learning. This was supported by a later study held by Ismail (2015) that affirms that all emotions experienced, whether positive or negative, influence foreign language learning. Although positive emotions are essential for learning to take place, this idea is not new in the literature. Previously to this study, it was Krashen (1985) who suggested that learners, at any age, need to feel confident, motivated and self-assured. In his view, the classroom must be a safe place where learners feel as an accountable part of the group. In accordance with this principle, Richards and Rodgers (1986) recall Krashen's affective filter hypothesis as “the learner's emotional state or attitudes as an adjustable filter that freely passes, impedes, or blocks input necessary to acquisition” (p.133). In the same spirit, Ginnis (2002) adds that everybody needs to feel emotionally secure and psychologically safe in the learning environment.

As Krashen (1985) argues, this affective filter must be low so that students can reach the optimal conditions for learning to happen. Specifically, the affective filter hypothesis has three variables with regards to second language acquisition: motivation, self-confidence and reduced anxiety. In subsequent paragraphs, these three variables will be defined as a way to clarify the functions they have in language learning.

2.1.1. Motivation: the key for language learning success

There is a plethora of studies that deal with the variable of motivation in learning (Anderman and Dawson, 2011; Beck, 2004; Dörnye, 2001; among others) and foreign language learning (Bahous, Bacha and Nabhani, 2011; Dörnye and Otto 1998; Tuan 2012; among others). The influence of motivation in learning has led to research about practical procedures in an attempt to tap into learners' motivation in order to make learning an enjoyable experience (Al-Mahrooqi et al., 2012, Dörnye, 2007, Dörnye and Csizér, 1998). Regarding motivation in learning, Anderman and Dawson (2011) claim that theory can be applied into practice. They argue that even though motivation, to a certain extent, comes from inner resources, the crux of the issue lies in teachers. They suggest that tasks and grouping selection, the way each teacher delivers lessons and the particular languages s/he uses are indeed factors that may boost motivation.

With reference to the role teachers play in motivating students, Svinicki (2005) points out how they can affect the learning process by either easing or hindering students' motivation. In that sense, Dörnye and Csizér (1998) argues that "skills in motivating learners should be seen as central to teaching effectiveness" (p. 207). In doing so, the teacher has to bear in mind what he calls '*Ten commandments for motivating language learners*²²'. Among these commandments, the teacher has to set an example of behaviour, create a relaxed and pleasant atmosphere in the classroom, present the tasks in a way that raises students' interest, build good rapport between teacher-students relationships and increase the learners' linguistic self-confidence. In their study, they depict how making

²² The 10 commandments for motivating language learners according to Dörnye are: 1. Set a personal example with your own behaviour; 2. Create a pleasant, relaxed atmosphere in the classroom; 3. Present the tasks properly; 4. Develop a good relationship with the learners; 5. Increase the learners' linguistic self-confidence; 6. Make the language classes interesting; 7. Promote learner autonomy; 8. Personalize the learning process; 9. Increase the learners' goal-orientedness; 10. Familiarize learners with the target language culture.

language lessons interesting and giving the learner a sense of autonomy are also strategies to increase motivation.

In relation to this last commandment, Ginnis (2002) claims that, when learners have some control over their learning, they tend to show themselves as motivated, open and engaged. For that reason, it seems advisable to design tools and classroom dynamics that include students in some decision-making. Furthermore, Ryan and Deci (2000) suggest that by increasing student's autonomy, sense of competence and relatedness, intrinsic motivation can be promoted.

In addition to Dörnye and Csizér's (1998) commandments to enhance motivation in the foreign language class, they discover that teachers should be able to engage students in tasks and activities carried out in class by personalising the learning process and increasing the learner's goal-orientedness. Their last commandment deals with familiarising learners with the target language culture that is already implicit in language learning and the communicative approaches.

Summarising, motivation comes from many different sources. From the role of teachers in the classroom, setting the example of behaviour to creating good rapport and relationships within the group. From personalising the learning process, to creating a sense of autonomy in learners. All these aspects make learners open to new learning due to the impact they have in boosting motivation. One significant aspect of this analysis is the relationship among the commandments aforementioned that go hand in hand with Neuro-linguistic Programming strategies that will be presented later in this text. In this regard, three important aspects in which NLP relates to motivation can be highlighted. First, in NLP, teachers need to create positive rapport in the relationships they build with students (Lashkarian and Sayadian, 2015). Second, NLP tasks are goal-oriented (Vieira and Gaspar, 2013) and third individual differences and learning styles are taken into account (Pritchard, 2013).

Furthermore, it has been noted how the role of the teacher setting an example of behaviour is an important aspect when it comes to promoting motivation. In connection with this, NLP lays its foundations into what O'Connor and Seymour (1990) call learning by modelling. They claim that whilst growing up, children learn by modelling other individuals that are close to them. However, they argue that the reinforcement, positive or

negative, children get from parents and peers is what makes a difference. They suggest that the reinforcement children get from their actions is what makes them wish for success and fear the failures. In O'Connor and Seymour's (1990) words, "it seems that this fear of doing it wrong, more than anything else, is how we learn to inhibit our natural learning processes" (p. 179). Therefore, the way teachers react to students' performance and the reinforcement teachers do of students' work can open or hinder natural learning processes.

However, O'Connor and Seymour (1990) go a step further in explaining learning by modelling in NLP. In their own words, modelling is defined "as the process of replicating human excellence" (p. 181). In fact, NLP learning by modelling is what "makes explicit the behavioural patterns of excellence" (p. 181) where the teacher (or coach) is the facilitator and "students learn from themselves how to get the results" (p.182). In other words, as Richards and Churches (2007) suggest, NLP modelling studies "what people do, the ways they think, and behave" (p. 1). Therefore, NLP provides with strategies that model successful learning patterns delivered in a way where students are encouraged to use their inner resources to achieve. Consequently, this makes a connection to the reviewed studies on motivation that indicated that having learners work things out by themselves is a way to enhance a sense of autonomy and, thus, an approach to raise motivation. Added to that, Lashkarian and Sayadian (2015) claim that NLP can help reducing the levels of anxiety in the classroom leading to increasing motivation and foreign language learning proficiency.

On the other hand, the only commandment reviewed that would not have place in NLP strategies applied to foreign language learning and teaching is the familiarization with the target culture. Nevertheless, as mentioned before, CLIL methodology implies planning focusing not only in contents, cognition and communication, but also, culture. Since the development of this research takes place in a CLIL context, it is assumed that this way of motivation will be also promoted.

Hence, the strategies and commandments reviewed to enhance motivation will help the reader understand how NLP is linked to motivation in learning and foreign language learning. In conclusion, learners must feel safe and need to feel an accountable part of the group. All these areas of motivation must take place in the learning environment in order to achieve the intended outcomes in a profitable way.

2.1.2. Self-confidence and reduced anxiety

Going back to Krashen's (1985) affective filter variables of self-confidence and reduced anxiety, Richards and Rodgers (1986) describe how Krashen's Input Hypothesis theory claims that the way humans acquire new language has a lot to do with the type of 'input' they are exposed to. In Richards and Rodgers' (1986) words:

Input must be comprehensible, slightly above the learner's present level of competence, interesting or relevant, not grammatically sequenced, in sufficient quantity, and experienced in low-anxiety contexts (p.18).

Hence, input that is delivered in such manner becomes a way to help learners developing a sense of confidence towards the foreign language while reducing the possible stress that they may encounter when facing new language. Similarly in a previous study, Vygotsky (1962) suggests that learners have to be presented with knowledge and information that is new but not far from what they already know. He called this as the zone of proximal development. According to Mahony (2007), this has important implications for teachers in terms of "setting proximal goals for a student means describing targets that are challenging but not beyond the limits of the comfort zone" (p. 39). From these studies it can be assumed that teachers are encouraged to use language and set objectives for tasks that are within the limits of students' skills and anxiety levels.

For this reason, language exposure is not enough if individuals are not susceptible to embrace this new input. In this sense, research on brain-based approach to language learning and teaching maintains that "learning is as natural as breathing, and it is possible to either inhibit or facilitate it [...] In fact, the actual 'wiring' of the brain is affected by school and life experiences" (Caine and Caine, 1990:66). As a result, Caine and Caine (1990) argue, in line with Ornstein and Sobel's (1987) study, that it seems that humans learn best when the brain does not feel threatened or stressed. In addition to this, Gayle et al. (2007) suggest that the human brain is able to perform many functions at the same time. Consequently, they argue that our brain is able to operate thoughts, emotions and perceptions all at once. In their view, this is why learning a foreign language is a lot more than developing the language skills or providing with a rich input environment. In point of fact, they claim that learning a foreign language requires the learner to be open to learning, which involves feeling safe, confident and in a ready to learn state.

Therefore, research gives evidence that affective and emotional factors are important when it comes to learning and language teaching. In this direction, Ni's (2012) investigation about the pedagogical implications of affective factors in second language acquisition concludes suggesting that affective factors make a difference about the amount of input students can take in and output can produce. Likewise, she points out how the three variables of the Krashen's affective filter (motivation, self-confidence and reduced anxiety) are determined by teachers' management and feedback, which will hinder or encourage learners' participation and success. Similarly, she stresses the importance of teachers being aware of these factors due to the great impact they have on learning, in order to "adopt some practical and effective techniques to promote learner's affective development and hence get them actively involved in class activities" (Ni, 2012:1512). Hence, teachers need to establish routines and practices that make learners be willing to take part in learning in a positive way.

In this fashion, cutting-edge research confirms that emotions are the key that triggers foreign language learning motivation. On the one hand, Dörnyei (2005) highlights how everyone would agree that the undeniable ingredients in the path to foreign language achievement are language aptitude, motivation and learning styles. On the other hand, Pishghadam et al. (2016) examine emotions in English language learning classes and conclude by suggesting that teachers need to be aware of the emotions activated by the development of all language skills in order to be able to make the most of the learning experience. They add that this necessarily implies the need to feel safe in the learning atmosphere whilst building an optimistic frame of mind in students to achieve learning.

Along the same line, Mercer and Gkonou (2017) emphasise the role that emotions play in English language teaching. In their view, emotional and social intelligence are crucial due to the part they take in communicative language teaching. They add that in these current approaches, students are required to cooperate and collaborate with each other whilst using the foreign language in authentic situations, which necessarily entails having teachers and students "emotionally and socially competent" (Mercer and Gkonou, 2017:8). Consequently, being aware of the emotions and motivation that may arise during the development of language skills or realization of tasks in the classroom are of great importance when trying to achieve the best possible results.

2.1.3. The role of emotions in CLIL contexts: similarities and differences in learning

Whilst analysing the factors that may hinder the development of reading, writing and spelling skills in CLIL contexts (see section 1.4.5), it was suggested that, learning contents through a second language is sometimes a real challenge for students in the early years of primary education. This is due to the lack of linguistic resources and the cognitive effort students have to make when integrating content and foreign language (Halbach, 2009). This may indeed block learning when these challenges are not addressed on time. In this sense, Meyer (2010) points out “there is still a lack of appropriate teaching materials and a comprehensive and integrative CLIL methodology” (p.11). Meyer compiles a set of strategies for successful and sustainable CLIL teaching and learning. In particular, he argues that one of these strategies is the need of rich input in the content subject class. In this light, he also stresses the importance of presenting this input in a meaningful, challenging and authentic manner in order to enhance motivation, which is in fact a way to lower students’ affective filter. Finally, he describes how subject learning through a second language gets its best results when new topics are dealt with “in such a way that the affective filters of the students remain wide open and when students can link new input to prior knowledge, experiences and attitudes” (Ibid: 14). Thus, emotional factors that apply to language learning are coming to the fore.

Additionally, Ginnis’ (2002) research shows that humans share some similarities as learners. In particular, he claims that there are four main similarities between learners. On the one hand, learners need to feel emotionally and psychologically safe. This affirmation would take us all the way back to the affective filter hypothesis reviewed in the previous section (see section 2.1). On the other hand, learners need to have some control over their learning in order to feel motivated, engaged and open. Accordingly, the one more similarity Ginnis (2002) suggests is that everyone needs to work things out for themselves. As a consequence, Jensen (2008) defines learning as the process that learners go through when making sense of nonsense. Finally, Ginnis (2002) claims that learners are better at remembering experiences for longer and in detail when these are extraordinary, dramatic, emotionally strong and when experiences come from multi-sensory perspectives. In line with this, Ginnis (2002) affirms the following:

When several senses are simultaneously involved, the message is being received through a number of different channels and stands a better chance of remaining prominent. (p. 23)

Considering this, it can be argued that the more senses involved the better learning. This takes us to Gardner's (1983) theory of Multiple Intelligences in which he establishes seven intelligences²³ (i.e. visual, auditory, kinaesthetic, musical, logical-mathematical, verbal-linguistic, inter and intra personal intelligences), as a way to depict a teaching approach that taps into each one of them to ensure effective learning. In order to reach learners best, teachers are required to plan activities that embrace all intelligences in such a way that will strengthen the intelligences students are best at, whilst improving the weakest ones.

Reason for this, is that we all understand and experience the world differently. In order to explain this, Neuro Linguistic Programming founders wrote the following presupposition in the early 1970s: the map is not the territory. Using this metaphor, Revell and Norman (1997) explain, "we all have frameworks or metaprogrammes (why we do what we do), through which we react to different contexts in life" (p. 26). As a consequence, if teachers want to positively influence students learning, motivation, levels of anxiety, confidence and behaviour, the context in which language learning occurs is crucial. Hence, since not all learners are motivated in the same manner or understand the world the same way (nor learn at the same time), it seems advisable to explore into approaches that encourage the planning of tasks from different sensory perspectives that will facilitate learning in a motivational and tension-free manner.

How language learning is highly influenced by the circumstances in which this happens has been analysed so far. Consequently, creating a positive classroom atmosphere will aid in order to foster the desired emotional states that encourage learning. In this regard, a brief overview of Krashen's affective filter hypothesis was outlined. In particular, the variables of motivation, self-confidence and reduced anxiety have been illustrated due to the impact they have in language learning.

²³ Howard Gardner revisited his theory many times adding other intelligences such as the naturalistic in 1995 or existential in 1998 grouping the former inter and intra personal intelligences. Furthermore, his team in Harvard and himself have published numerous papers in which they add new intelligences or reconsider previously accepted intelligences. Nonetheless, the seven depicted in this chapter have always been part of this theory.

Regarding motivation, we have noted how promoting learner's autonomy and developing a more individualized learning process are among the elements that boost motivation. In the same way, the teacher's role as a model of behaviour along with the relationships and rapport built within the group rise motivation levels and self-confidence. As for self-confidence and reduced anxiety, we have seen that although language exposure to loads of comprehensible input is important, this is not enough if learners feel insecure or are in distress. That led to the review about the affective and emotional factors that strike learning. Again, the role of the teacher was emphasized as a diagnostician that finds elements that might negatively influence learners in order to build a learning environment that changes the learner's negative state of mind into positive.

In addition to this, it has been considered how approaches that require learners to interact with each other, such as CLIL, demand emotionally competent students. Finally, the role of emotions in CLIL contexts was examined. Bearing in mind that learning contents in a foreign language tends to be a challenge for students, the way teachers present tasks and input can make an impact enhancing motivation and reducing anxiety. Accordingly, the similarities and differences among learners with regards to learning styles and intelligences were depicted.

This section concluded by describing how we are all different in reference to learning. As a matter of fact, these differences are what make us unique in our ways and thoughts. In this sense, we have seen how NLP's most famous presupposition (the map is not the territory) is the starting point to plan activities and design strategies that reach learners from a variety of perspectives, learning styles and intelligences. However, before attempting to describe this or other NLP presuppositions it is necessary to establish what is meant by NLP.

2.2. What is Neuro Linguistic Programming? A brief description

In the 1970s, Richard Bandler, back then a student of mathematics and computer science and John Grinder, a professor of linguistics, coined the name Neuro-linguistic Programming (henceforth NLP) at the University of California at Santa Cruz. Bandler and Grinder studied successful therapists in different fields such as the family therapist Virginia Satyr, Fritz Perls founder of the Gestalt school and Milton Erickson a hypnotherapist (O'Connor and Seymour, 1990; Revell and Norman, 1997; Richard and Churches, 2007; Mahony, 2007; Witkowski, 2010, among others). NLP creators found

out that these outstanding therapists shared similar patterns in relating to clients (O'Connor and Seymour, 1990) and the language they used (Mahony, 2007). Furthermore, they shared similar beliefs about what they were doing (Revell and Norman, 1997). As O'Connor and Seymour (1990) describe, Bandler and Grinder decided to uncover these patterns and beliefs to determine whether others could learn them.

This shows a need to be explicit about what exactly is meant by NLP. In order to illustrate what NLP is, cutting-edge researchers such as O'Connor and Seymour (1990), Revell and Norman (1997), Krusche (2006), Miller (2008), Muradep (2012), among many others agree to divide NLP into three terms:

The term **Neuro** has to do with the nervous system, the brain and the things that go on in our mind along with the five senses (Miller, 2008). In this sense, Muradep (2012) points out that behaviour is the outcome of the neural processes we go through and, consequently, NLP is related to the way individuals make sense of the world and their experiences. Additionally, she claims that being aware of our own thinking patterns empower flexibility to wield a lot of influence in order to make positive changes.

The term **linguistic** comprehends spoken and non-spoken language that we use to communicate (Miller, 2008). According to O'Connor and Seymour (1990), our thoughts and behaviour are implicit in the language we use, which in fact gives the listener a great deal of information about others. Added to that, Revell and Norman (1997) add that it is possible to change our own behaviour by changing the way we speak about things, or even help other people who are willing to change. Similarly to what has been mentioned in the previous section (see section 2.1), the language we use to communicate is a powerful tool that can either hinder or facilitate the learning process. Furthermore, it can help understand how others think or behave in a way that helps them achieve their outcomes.

Programming deals with individual behaviour and thinking patterns (Miller, 2008). In O'Connor and Seymour's (1990: 3) words:

NLP deals with the structure of human subjective experience; how we organize what we see hear and feel, and how we edit and filter the outside world through our senses. It also explores how we describe it in language and how we act, both intentionally and unintentionally, to produce results.

Hence, programming is about how individuals classify their ideas and actions in order to develop outcomes. Furthermore, Revell and Norman (1997) note that, in order to get the desired outcomes, programming deals with practicing positive thinking, speaking and acting in order to unlock our personal potential. In this vein, Krusche (2006) claims that programming is about the systematic use of sensorial perceptions and language that will aid achieving the goals in mind.

Now that the term NLP has been described, it is necessary to clarify exactly what is the main aim of NLP. In Revell and Norman's (1997) words:

The main aim of NLP is to enhance the quality of people's lives by helping them to identify and achieve their outcomes, and to interact more effectively with others. It is a means of achieving intra-personal and inter-personal excellence. (Revell and Norman, 1997: 14).

This definition is connected to the similarities and differences in learning that were reviewed in a previous section (see section 2.1.3) in which it was concluded that the more intelligences involved in learning the better as a way to tap into different learning styles. As defined above, NLP is especially considered to strengthen those intelligences that help us understand the way we learn and think (i.e., intra-personal) in order to be able to relate and communicate effectively (i.e., inter-personal) to achieve explicit outcomes. Accordingly, Revell and Norman (1997) highlight how these set of tools and strategies are extensively practised in personal development, business, coaching and, for the matter of this research, education and language learning.

2.2.1. NLP Presuppositions

NLP lays its foundations in a set of presuppositions that taken and accepted as truth can drastically change life and teaching to the better (Revell and Norman, 1997). Dilts (1998a) highlight how these presuppositions come from many different fields such as general semantics, transformational grammar and pragmatics among others. He also distinguishes among linguistic presuppositions (i.e., the way we accept information to be true in order to make sense of a specific statement) and epistemological presuppositions (i.e., the fundamental assumptions that cannot be proven but are "presupposed"). As

Elston and Spohrer (2009) claim, presuppositions are therefore fundamental beliefs that are crucial “for an internal representation to make sense” (p. 137). In other words, they are ideas that individuals take for granted or consider true in order to make sense of the world.

There are not a state number of presuppositions since different authors adapt them to their fields of interest. On the one hand, Dilts (1998) establishes that all presuppositions are based on four fundamental epistemological presuppositions²⁴ that he summarizes in two basic presuppositions from what all the others result: The map is not the territory; Life and ‘mind’ are systemic processes. Nonetheless, in order to have an overview of the most typical presuppositions gathered in NLP training manuals, Tosey and Mathison (2003a: 383) list them as follows:

- The map is not the territory
- Mind and body are part of the same cybernetic structure.
- All behaviour is positively intended.
- People are making the best choice available to them in any situation.
- Every limitation presented to you is a unique accomplishment by a human being.
- There is no failure, only feedback.
- The meaning of your communication is the response you get.
- Consciousness is a limited phenomenon.

Some of these presuppositions are self-explanatory, whilst others need to be further undertaken. Since this doctoral dissertation will focus on one strategy of NLP such as spelling, only those presuppositions that are useful to learning, learning a foreign language, CLIL and spelling will be considered.

NLP is then about recognising internal thinking patterns of successful individuals, in such a clear way, that these could be taught to others. It is therefore an approach of effective communication (Mahony, 2007). From its birth, NLP has studied and determined a numerous set of strategies and practical applications to many different fields in life. In this regard, NLP has been extensively put to use in British education (Singer and Lalich, 1996). In addition, Tosey and Mathison (2003b) claim that psychologists have largely

²⁴ The map is not the territory; Life and ‘mind’ are systemic processes; At some level, all behaviour is positively intended; The law of requisite variety

accepted NLP. Furthermore, Witkowski (2010) highlights how NLP has become widespread in very important companies such as IBM, McDonalds's or even NASA and the US Army.

Given that the aim of this doctoral dissertation is to find out the impact of the NLP spelling strategy in CLIL contexts, I will concern myself with reviewing studies, presuppositions and strategies that are related to teaching and learning in general, foreign language teaching and learning in particular, and spelling. Accordingly, this study will delve into the most important NLP presupposition, the map is not the territory, representational systems and eye accessing cues, as the strategies of NLP that will aid the process of learning to spell content words. In addition to this, a review of the most popular criticism on NLP in the fields mentioned above will be considered, to continue analysing the role that NLP plays in ELT, CLIL and spelling. Finally, the NLP spelling strategy will be depicted as a set of the steps that students will have to take (and teacher guide) in order to make explicit the strategies that will follow in the methodology.

In what follows, the first and most important presupposition (i.e., The map is not the territory) will be addressed in order to help the reader understand how this links to the fields of interest of this doctoral dissertation.

2.2.2. The map is not the territory

As mentioned before, we all experience the world in different ways. In this vein, Korzybski in 1958 outlined the theory that a map is not the territory that it represents (Bandler and Grinder, 1975). Out of this fact, Bandler and Grinder (1975) wrote what it has become the basic NLP presupposition: The map is not the territory. In this respect, they argue that there is always going to be a difference among the world and the map or representation of the world. This is because the way our senses understand and decipher the world is unique in each of us. Consequently, we all have our own map of reality and can live different realities.

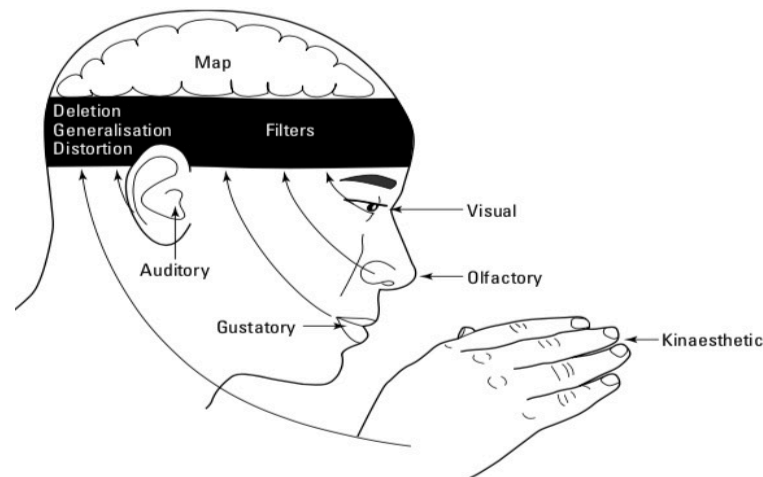
As O'Connor and Seymour (1990) argue, the way our senses make sense of the world around us is the map that we create to understand (our) reality. They claim that the way we operate about our reality is different to the territory due to the role that filters have

in our perceptions. Therefore, they add that “the difference lies not in the world, but in the filters through which we perceive it” (Ibid.: 13). However, they suggest that each one of us filter this information through our own set of “experiences, culture, language, beliefs, values, interests and assumptions” (Ibid:4). In this spirit, Ready and Burton (2010) add to the aforementioned, that this process of filtration has to do with social background, memories, decisions and experiences we all have. These are the natural filters that in NLP are called meta-programmes (Zamfir, 2015). In NLP not a single map of reality is objective and universally true (Cuellar, 2012). However, he claims that each map can be useful in a specific moment or context to the person using that map. As he suggests, this is due to the fact that individuals have the ability to make their maps more useful and effective.

In this sense, O’Connor and Seymour (1990) claim that the way to get positive outcomes is to change those filters that are impeding someone to achieve them. Specifically, they suggest that when someone believes that something is possible and acts according to it, the successful outcome gets a lot closer. In addition to this, Krusche (2006) argues that this map is not only determined by our own subjective experiences, but also that it is what make us react, make choices and behave in a certain way. Furthermore, he claims that getting to know each other’s maps is what enables us to understand one another.

Consequently, as Ready and Burton (2010) claim, Bandler and Grinder (1975) found out that the way we speak about things go through three mechanisms or filters that come from experience. The first mechanism is deletion that is activated when, for example, some information is omitted in a story. The second one is generalisation that it is the way in which we all make connections with other experiences and for example, make use of words such as always, never, must, etc. The third mechanism is distortion that has to do with imagination and creativity, sometimes not aligned with reality. Therefore, using these mechanisms of filtration, while checking what is perceived from reality through the five senses, is the way individuals create their maps of the world. In addition to this, Zamfir (2015) points out that our internal map of reality is created by “pictures, sounds, feelings, smells and tastes” (p.225) that have been unconsciously filtered.

Figure 2: The NLP model of experiencing the world around you. Taken from Ready and Burton (2010: 239)



NLP suggests that the language used to communicate can influence in the way the world is perceived (Ready and Burton, 2010). As a matter of fact, the evidence presented in the role of emotions in CLIL contexts section (see section 2.1.3), concluded that this basic presupposition (i.e., the map is not the territory) is the place to start planning and designing strategies in order to be able to provide activities from a variety of angles, learning styles and intelligences. Nevertheless, it can be assumed that each student will create a different map of reality. On that premise, the context and the environment in which learning occurs is vital in terms of reducing the levels of anxiety whilst creating confidence and positive behaviour. Getting to know students' maps will enable flexible planning and practice that will enhance relationships within the group while training how they learn best to achieve the desired outcomes.

So far, this review indicates that the role of the five senses is fundamental when getting information about the world around us. They are the channels through which individuals perceive reality. In NLP they are usually called sensory modalities or representational systems. As a consequence, in the following lines they will be depicted as a way to introduce how taking them into account can help with spelling.

2.2.3. Representational systems

In NLP, O'Connor and Seymour (1990) argue “the ways we take in, store and code information in our minds – seeing, hearing, feeling, taste and smell – are known as representational systems” (p. 27). In consonance, Revell and Norman (1997) add that “we experience the world through our five senses or representational systems” (p. 31), that in NLP are called ‘VAKOG’. However, NLP defines three primary representational systems²⁵, the Visual (V), Auditory (A) and Kinaesthetic (K) since the olfactory (O) and gustatory (G) senses are included in the kinaesthetic sense (O'Connor and Seymour, 1990; Muradep, 2012). These systems are inclusive; that is to say, even though we can experience them all at the same time, each individual unconsciously pays more attention to only one or two systems, building their preferred sensory style (O'Connor and Seymour, 1990:27).

Revell and Norman (1997) suggest that “people naturally tend to use one system more than the other two, or one system before the others, either when noticing things around them, or when learning something” (Ibid.:31). This is what NLP understands as the preferred representational system. In this vein, Amirhosseini and Kazemian (2019) point out that by analysing the representational systems, it is possible to find out how the mind operates information and interpret meanings. Furthermore, they claim that identifying the preferred representational system is one of the most significant points on NLP. Consequently, in what follows the three main representational systems will be depicted.

On the one hand, individuals whose preferred system is visual (V) classify the world by the way it looks because what they see is more significant to what they perceive through the senses of hear or feel (Monkeypuzzle training and consultancy, 2016). In this sense, Mahony (2007) analyses how even the physiology and behaviour of a person changes depending on their preferred system. In the case of visual learners, he claims that they stand straight, sit leaning forward, and breathe with the upper chest. In terms of the way they learn, he highlights how visual learners tend to have problems remembering and following verbal instructions but they are very strong at remembering what they see. Therefore, Mahony (2007) clarifies that they like to read instructions for themselves

²⁵ The terms learning styles, learning channels and representational systems are interchangeable in this study.

although they tend to miss participation or get easily bored driven to doodle or daydream. Amirhosseini and Kazemian (2019) explain that visual learners memorise by creating pictures in their minds by means of observation and imagery.

On the other hand, individuals whose preferred representational systems is the auditory (A), what they hear becomes more important to what they see or feel (Monkeypuzzle training and consultancy, 2016). Basically, they prefer getting information through their ears (Revell and Norman, 1997). As for behaviour and physiology, Mahony (2007) points out that they breathe from the middle chest, have well modulated voices and tend to move their eyes side to side when listening. In addition, he argues that auditory learners like to engage in discussion and love when they are “told how well they are doing” (Ibid.: 43). Furthermore, Muradep (2012) notes the types of language auditory learners tend to use. These expressions in NLP are usually called predicates. For instance, while visual learners would use the expression “I see what you mean”, an auditory learner would use “I hear what you mean” or “I feel you” for kinaesthetic learners. This is a hint teachers (therapists, coaches, etc.) can use to detect their students preferred representational system. Furthermore, auditory individuals tend to talk to themselves (Mahony, 2007; Bensted, 2014) and like to memorise the sequence of procedures (Amirhosseini and Kazemian, 2019). However, they are not hands-on learners since they need to understand something quite well before attempting to do it (Monkeypuzzle training and consultancy, 2016).

Regarding individuals whose preferred representational system is the kinaesthetic (K), Revell and Norman (1997) point out that they get information from their bodies, hands and emotions. In addition, they argue that these learners like taking notes since the movement helps them to retain information. Mahony (2007) notes that they usually have their breathing happening in the abdomen, their hand movement is low and small and usually have slow speech. Furthermore, these learners tend to be interested in trying and doing things rather than learning theory since relying on what they feel makes them take more time to process information (Monkeypuzzle training and consultancy, 2016).

As mentioned before, there are certain hints that teachers can use in order to guess the primary representational system of a student. From the way they move, behave or even talk (Mahony, 2007) to the language they use in a conversation that is considered key to identifying the different sensory modalities (Amirhosseini and Kazemian, 2019). As

reviewed in the motivation section (see section 2.1.1), this positive rapport built within the group raise motivation levels and self-confidence (see for instance, Dörnye and Csizér, 1998; Lashkarian and Sayadian, 2015). By identifying students preferred representational systems, teachers make sure students get the information through their preferred channel (Revell and Norman, 1997) and are able to easily create rapport with students by mirroring behaviour or using similar kind of words (Mahony, 2007; Muradep, 2012). However, Ready and Burton (2010) highlight the importance of not making generalisations of identities since it is a “complex system of activity that includes input, processing, storage, retrieval, and then output” (p. 99). Therefore, this is a complex unconscious process that becomes of preference in a particular context (Ready and Burton, 2010).

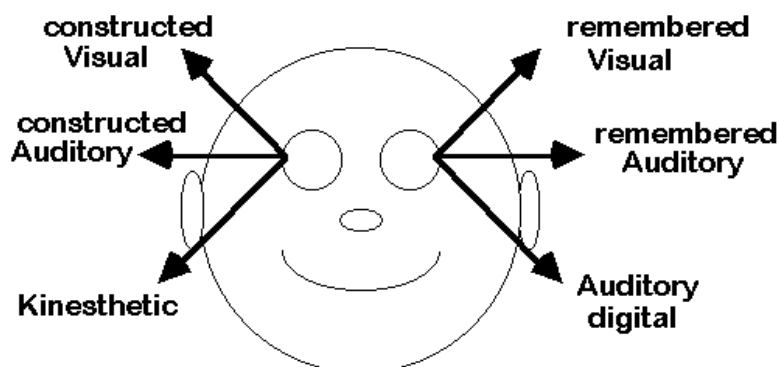
So far, it has been depicted how language and body language offer hints to guess individuals preferred representational system. From the way they breathe, they move to the way they speak or learn. In addition to this, in NLP it is believed that the way the eyes move give information about the sensory modalities individuals are using when interacting with others (O'Connor and Seymour, 1990; Grinder, 1991; Ready and Burton, 2010). Consequently, O'Connor and Seymour (1990:35) suggest that it is easy to know if a person is thinking in pictures, sounds or feelings”. As Revell and Norman (1997:39) explain that “there is a correlation between the representational system a person is using and their eye movement”. Thus, it is possible to guess the representational systems students are using at a certain situation. All in all, being aware of these facts can help us teachers learn more about our students' personalities and cognitive styles. As a consequence, the most representative model of eye accessing cues will be depicted to help the reader understand how this can help in language learning strategies.

2.2.4. Eye Accessing Cues

According to O'Connor and Seymour (1990), the visual system (V) can be used when looking outside the world (Ve), or when we are internally visualising (Vi). The auditory system (A) can be split into external sounds (Ae), or internal (Ai). The kinaesthetic system (K) is about feelings including external tactile sensations (Ke) and remembered sensations or inner feelings (Ki). In the same vein, Dilts (1998b) claims that the eye movements or “eye accessing cues” offer valid information to understand the train of thought an individual makes to use or retrieve information from a specific representational system.

According to Dilts (1998b), a large number of studies conducted during the 70s and 80s have illustrated the following model that it is identified as the consistent pattern for right handed individuals all over the world, since some right handed or ambidextrous individuals may reverse some eye movements.

Figure 3: Basic NLP Eye Accessing Cues. Taken from Dilts (1998)



The picture above represents what someone can see when looking at another person. In addition, Dilts (1998) suggests the following eye movement patterns examples to examine the relationship between the eye movements and thinking:

Table 1: Relationship between eye movement patterns and thinking.

<i>Eyes Up and Left:</i> Non-dominant hemisphere visualisation - i.e., remembered imagery (Vr).	<i>Eyes Up and Right:</i> Dominant hemisphere visualisation - i.e., constructed imagery and visual fantasy (Vc).
<i>Eyes Lateral Left:</i> Non-dominant hemisphere auditory processing - i.e., remembered sounds, words, and "tape loops" (Ar) and tonal discrimination.	<i>Eyes Lateral Right:</i> Dominant hemisphere auditory processing - i.e., constructed sounds and words (Ac).
<i>Eyes Down and Left:</i> Internal dialogue, or inner self-talk (Ad).	<i>Eyes Down and Right:</i> Feelings, both tactile and visceral (K).
<i>Eyes Straight Ahead, but Defocused or Dilated:</i> Quick access of almost any sensory information; but usually visual.	

Taking this into consideration, different authors (O'Connor and Seymour, 1990; Grinder, 1991; Dilts, 1998; Ready and Burton, 2010 among others) suggest a number of exercises to train this ability. For instance, when asking someone about the clothes they were wearing the day before, it is likely to find out that individuals look up and left. However, when asking about their favourite song, they might look to the left lateral recalling from the auditory system or look down right if what they are remembering what their favourite song makes them feel. As a consequence, teachers can identify whether students are recalling the spelling of a word from the auditory, visual or kinaesthetic systems when asking someone the correct spelling of a word.

Tapping into spelling, Grinder (1991) establishes that these eye movements are external signs of the part of the brain students are using. In this sense, he gathers a set of possible responses visual, auditory or kinaesthetic will be likely to have in terms of neurological external signs (i.e., eyes location, movement, voice and processing speed and predicates) and behaviour. He describes most accurate spellers as visuals since they genuinely see the words in their mind. Furthermore, he claims that seeing words in our mind is “the key to academic success” (p. 93) what makes it an indispensable tool to be practiced at school.

Dilts (1998b) claims that the eyes movement strategy in NLP is used to uncover unconscious thinking-processes that will enable “modelling a person’s inner strategies for decision making, learning, motivation, memory, etc.” (p.1) As noted in previous sections (see section 2.1.1), NLP is about modelling successful patterns by making them explicit, where the teacher allows students to work things out for themselves (O'Connor and Seymour, 1990). Nevertheless, Revell and Norman (1997) argue that a model is just that, a model. Therefore, some students may differ in some patterns even if they are consistent in their own ways, to what the teacher needs to be observant.

Ready and Burton (2010) argue that the way individuals move their eyes when trying to convey meaning gives the teacher advantage to guess if the information they are gathering is in pictures, sounds or feelings. In consonance, they claim that this is valuable information to talk back in a way that enhances a positive response. Given that knowing students preferred representational systems will enable teachers to deliver information in a sensory integrated language that will meet every learner, it can be assumed that the more senses involved in learning the merrier. This is because, as commented in the previous

section (see section 2.2.1), each student will have their own map of reality and will gather information from the world through different channels. Thus, tapping into all of them enables teachers to engage all different learning styles. Despite the fact that students may have one or two as preferred channels of information, we all use the five senses to learn about the world.

Considering all of this evidence, it seems that NLP strategies to find out information about how students perceive the world are very useful when it comes to learning. Nonetheless, NLP counts with a large number of adepts but a similar number of detractors. For this reason, it seems appropriate to inquire into the most relevant literature refuting the main representational systems network and eye accessing cues.

2.2.5. NLP Critique

Since the onset, various studies have assessed and discussed the efficacy of NLP throughout the years (Ridings, 1983; Heap, 1988; Craft, 2001; Tosey and Mathison, 2003, 2010; Diamantopoulos, Wolley and Spann, 2009; Witowski, 2010). In the following lines, a critical review of the papers published confronting NLP application to aspects such as representational systems, eye accessing cues, learning theories and the epistemological foundations of NLP will be addressed. This will be done in order to have an overview of the research done in these topics while taking into consideration other fields that need further research.

Regarding representational systems, Ridings (1983) studies Bandler and Grinder's hypothesis about the predicates used by individuals as a way to exhibit their primary representational system. On the one hand, he finds out a tendency of kinaesthetic predicates in the subjects of his study, which initially appears to show evidence supporting the hypothesis. However, he highlights that this "may be a reflection of the underlying high base rate occurrence of kinaesthetic predicates in the English language" (Ridings, 1986: 86). This is because in English there are many predicates that relate to kinaesthetic senses more than the visual or auditory. Thus, his research does not show evidence supporting the claim that people make use of specific predicates that reveal their primary representational systems in their language usage.

In the same vein, Heap (1988) studies three hypotheses²⁶ all of which have to do with the use of predicates and eye accessing cues as the way to guess someone's primary representational system. However, he concludes that all hypotheses investigated were weak leading him to refute the idea that primary representational systems are noticed by the choice of specific predicates or eye movements. Thus, the evidence reviewed here indicates that there is not a relationship between predicates or eye accessing cues in recognising someone's primary representational systems.

More recent research carried out by Diamantopoulos, Wolley and Spann (2009) argue that even though eye accessing cues has been a research focus in the past, only ten studies have been conducted since the 70s. As a response to Heap's (1988) work, they point out that the sources of information of his review come from "master's dissertational theses" (p. 9) whilst their "review is restricted to peer-reviewed publications that concern the EAC²⁷ model only" (p. 9). In addition to this, they claim that there are numerous weak points in past research about eye accessing cues (EAC). Two of which are the lack of advanced eye-tracking devices to record the eye movements and the disagreements throughout past studies. For that reason, despite the fact that 60% of the studies do not support the eye accessing cues model they are invalidating, in a certain way, previous research in the topic.

A broader perspective is adopted by Witowski (2010) who conducts an analysis of most scientific NLP articles ever divulged. As a result, he revised 35 years of research on NLP concluding that "results contradict the claim of an empirical basis of NLP" (Ibid.: 58). In addition to this, he claims that even those studies backing NLP do not provide clear data about the presence of several representational systems or having a dominant one. From all studies reviewed he could only find one (Yapko, 1981 as cited in Witowski, 2010) that supports the claim of these representational systems helping with communication and therapy. Furthermore, he argues that factors such as having only one hypothesis or factor evaluated and the absence of control groups make the papers reviewed unreliable. Nevertheless, these papers are not related to learning, teaching or English language teaching but are more focused on NLP uses in therapy or business. As a

²⁶ 1. A person has a PRS which is observed in his choice of predicates. 2. A person has a PRS which is observed in the direction of his eye movements. 3. Communicators may enhance effectiveness if they match their client's PRS in their choice of predicates.

²⁷ Eye Accessing Cues – EAC.

consequence, it seems advisable to tap into the criticism made to the fields closely related to this dissertation.

With regard to learning theory, Craft (2001) investigates the role NLP has in the accepted learning theories. She points out five major issues that need to be addressed due to the influence that NLP has in education. On the one hand, she makes a differentiation among models, strategies and theories. This is because in her view NLP “remains as a set of strategies rather than a theory or a model” (Ibid.: 125). Theoretical cohesion is then put to question. On the other hand, she challenges the idea of copying an expert’s behaviour to become one in the same field. In addition, she argues that there is disagreement in NLP claims that suggest that learning is best done through experience while accommodating the different personal identities and learning styles within a group. Furthermore, she finds controversy in the ‘logical levels’ theory²⁸ that suggests that learners are predictable to a certain degree. Finally, she discusses the epistemological foundation of NLP affirming that if individuals create their own maps of reality, this means there is a reality “out there” (Craft, 2001: 133) as a separate entity.

As a critical response to Craft’s (2001) opinions, Tosey and Mathison (2003a), two Masters Practitioners of NLP experts in education and management, wrote an article that tries to shed light on the five concerns previously described. Regarding theory cohesion, they claim “NLP was led by a pragmatic, applied interest, not by a concern to develop theory” (Tosey and Mathison, 2003a: 381). At a later stage of their research, Tosey and Mathison (2010) clarify that NLP founders were not interested in what it is true but what it is useful. As a consequence, it does not deal so much about theory but pragmatics or practical approaches. Thus, NLP does not pursue to create a theory since their creators (Bandler and Grinder) were more interested in finding useful patterns close to experience than developing a theory. NLP was created to be used (Tosey and Mathison, 2010) and to be put into practice.

²⁸ This theory was proposed by Dilts (2001) and consists on the idea that brain structure, language and social systems create different hierarchies or levels. This hierarchy creates different neurological levels: identity, beliefs and values, capabilities, behaviour, environment and spiritual. For more information about this theory visit [A Brief History of Logical Levels by Dilts \(2014\)](http://www.nlpu.com/Articles/LevelsSummary.htm). Available at: <http://www.nlpu.com/Articles/LevelsSummary.htm>

With reference to modelling an expert's behaviour in order to achieve success, Tosey and Mathison (2003a) draw attention to one misconception Craft makes in her article. In their opinion, she tends to refer to modelling as copying. However, they highlight how copying someone's behaviour has to do with an NLP technique called mirroring, where you reflect others behaviour. As they indicate, modelling is about deciphering language patterns and internal representations to create a useful 'map' that will aid acquiring certain ability.

In relation to the discrepancy between learning through experience and learning styles, Tosey and Mathison (2003a) remind Craft (2001) the "experiential learning cycle"²⁹ (Tosey and Mathison, 2003a indebted to Honey and Mumford, 1982: 3) that in fact include all basic learning styles. In addition to this, they argue that this discrepancy presented by Craft lacks theoretical foundation to be properly addressed. As for the logical levels, theory that implies a certain degree of predictability in learners, the main critical response they make is that Craft's sources of information are not original but secondary. Second, they argue that knowing about the different logical levels students go through when learning is aimed to aid further thinking about these concerns, but not a way to manipulate students to get a particular response as Craft implies.

Finally, concerning the epistemological foundations of NLP Tosey and Mathison (2003a) respond to Craft's (2001) idea of a separate reality outside the idea of territory as "a surprising and unexamined statement" (Tosey and Mathison, 2003a: 384). According to them, this is due to the fact that NLP lays its epistemological foundations in "the processes of perception and conceptualization (through language) that create individuals' experiences" (Tosey and Mathison, 2003a: 384). Thus, as explained in previous sections of this dissertation (see section 2.2.2), they are referring to the map of the territory individuals create and the way they exhibit how they perceive the world. In addition to this, Tosey and Mathison (2003a and 2003b) claim that NLP approaches are similar to Vygotsky's (Tosey and Mathison 2003a indebted to Vygotsky, 1939) learning theory that

²⁹ In 1986, Honey and Mumford identified four different types of learners: activists, reflectors, theorists and pragmatists. They argue that students tend to take one or two of these paths when learning. As a consequence, they point out that making students aware of how they learn empower effective and efficient learners. For further information about this topic, the University of Leicester provides a brief overview about this theory.

Available at:

<https://www2.le.ac.uk/departments/doctoralcollege/training/eresources/teaching/theories/honey-mumford>

suggests that language and thought are interconnected.

All in all, the critical response Tosey and Mathison (2003a) make to Craft (2001) is discredited paragraph after paragraph due to the lack of authority sources or evidences supporting her claims. Nevertheless, contrary to what might be assumed, that NLP Practitioners will always defend NLP contributions for the better, Tosey and Mathison (2010) also identify seven critical challenges³⁰ that need to be addressed due to the lack of NLP academic research that is indeed scarce. One of the challenges they suggest is the popular idea affirming that there is proof of studies invalidating NLP. Among the studies they mention, Heap's (1988) research refuting evidence about the relationship between predicates or eye accessing cues in recognising someone's primary representational systems is found again to be one of lacking credibility.

Another challenge, Tosey and Mathison (2010) suggest, is the lack of research evidence for NLP recognised by both practitioners and critics. In their own words, "academic research into NLP is thin, with virtually no published investigation into how it is used in practice" (Ibid.: 2010: 323). Hence, a need to evaluate the effectiveness of NLP and NLP strategies in practice is one of the major issues that need to be undertaken.

As a consequence, they highlight the importance of researching about NLP due to the potential impact that may have in education. In their view, in NLP teacher's use of language to deliver messages is done in a way that can aid learners to process information. However, they point out that this is something that it is usually done even for teachers who have never been NLP trained. Another aspect that Tosey and Mathison (2010) find relevant is that NLP can offer a step forward to open and closed questions with the Meta Model³¹ that provide a basis of verbal patterns and questions that aid teachers explore the way in which learners build information, challenging and broadening their maps of the world. Additionally, they claim that in NLP non-verbal communication is important due

³⁰ 1. NLP's pragmatic, anti-theoretical stance. 2. Eclecticism and lack of theoretical coherence. 3. Weak linkage to contemporary work in relevant fields. 4. The belief that there is evidence refuting NLP. 5. An unclear evidence base for NLP, and a lack of evaluation of its practices. 6. Ethical concerns about the way NLP is used in practice. 7. A lack of reflexive critique of NLP's discourse and social practices.

³¹ Tosey and Mathison (2003b) claim that the Meta Model as the core model of NLP. They suggest that the Meta Model is based on the language patterns that reflect the basic cognitive processes individuals go through while speaking. They argue that the way individuals speak has a role into revealing their own maps of reality. In their view, the way teachers communicate with students can help broaden their understanding of the world from different perspectives or representational channels.

to the connection between behaviour and internal processing. According to Tosey and Mathison (2010), teachers can engage in observations that can enhance their knowledge about students' experiences and their replies. In NLP, this is done building personal relationships whilst adapting the way in which teachers plan and design a task to reach all students.

In conclusion, as Roderique-Davies (2009) claims, investigations have failed to determine NLP effectiveness, as there is no credibility to its theoretical foundation. As it has been reviewed in these lines, this view is in fact supported by some scholars (Ridings, 1983; Heap, 1988; Craft, 2001; Witowski, 2010) and challenged by some others (Tosey and Mathison, 2003a, 2003b, 2010; Diamantopoulos, Wolley and Spann, 2009). In spite of this critique, NLP is still considered to have potential for learning and teaching in formal education (Tosey and Mathison, 2003b; 2010) and have positive pedagogical implications for English language teaching and foreign language teaching (Antić, 2006). Nevertheless, Biswal and Prusty (2011) argue that NLP empirical research counts with very few solid databases despite the fact that "Science needs evidence" (Ibid.: 46). Furthermore, Farahani (2018) notes the following:

In spite of all the numerous lines written and training courses held on NLP strategies, there are still a few sources that provide the teachers and learners of English language with NLP strategies used in the teaching skills and subskills of the language. (p. 84)

Consequently, recent research on NLP in EFL demand studies of NLP strategies that deal with teaching skills and sub-skills of the foreign language. Consequently, in the following chapter the role that NLP has with regard to foreign language learning and CLIL contexts will be analysed. This will be done in order to overcome one of the major issues that NLP demands: the lack of empiric academic research that explores the efficiency and efficacy of NLP, more precisely in one of its strategies, the NLP spelling strategy.

2.3. Summary

This chapter began by describing the role that emotions have in learning in general and specifically in CLIL contexts. All circumstances and experiences that surround learning make an impact on the way people learn. Factors such as cultural beliefs and teachers' approach to mistakes have been noted. In addition to this, an environment where stress and fear are minimized has been pointed out as an element of successful learning. Reason for this, is that the literature reviewed argues that positive emotions towards learning are vital for learning to take place and to avoid learning blocks. In order to establish the factors that enhance positive attitudes towards learning, Krashen's (1985) affective filter hypothesis variables of motivation, self-confidence and reduced anxiety have been presented. With regard to motivation elements such as, the role of the teacher setting an example of behaviour whilst creating a sense of learning autonomy, personalising the learning process, increasing the learners' goal-orientedness have been highlighted.

Later, the first link to NLP has been established. This has been done by pointing out how NLP teachers are determined to create positive rapport with students whilst taking into account learning preferences and specific goals. In addition to this, the importance of creating a sense of autonomy while learning as a way to increase motivation has been identified. In both, learning in general and NLP in particular, students are encouraged to work things out for themselves. This necessarily implies having students develop learning to learn strategies. Furthermore, the role of the teacher setting an example of behaviour has been highlighted. In connection with this, NLP learning by modelling has been defined as the process of modelling human excellence that studies what successful people in different fields do, the ways they think, and behave that help them to achieve their goals. This section has concluded that successful learning and motivation levels are increased when students feel safe and see themselves as an accountable part of the group.

With regard to the variables of self-confidence and reduced anxiety, literature reviewed indicates that helping learners to develop a sense of confidence towards the foreign language is crucial for success in learning. In this section, the need for setting challenging goals that are not beyond the limits of the students' comfort zone has also been stressed. This is because, when learning the human brain goes through emotions, thoughts and perceptions all at once. Thus, in order to be able to learn, students need to

open to learning. In this sense, teachers are required to establish routines and practices that make learners willing to positively participate in learning.

Furthermore, the role that emotions play in learning and language teaching has been pointed out. The need for teachers to be acquainted with the emotions that are activated during the development of all language skills has been noted as a way to make the most of the learning experience. Therefore, in CLIL contexts (alike other communicative approaches), strategies and activities carried out in class must pursue having students emotionally and socially competent. This section concluded by pointing out that when aiming to the best possible results, emotions and motivation make a difference when it comes to learning success.

Turning now to the role of emotions in CLIL contexts, the similarities and differences in learning have been analysed. This section has begun highlighting the challenges that students face when developing reading, writing and spelling skills in CLIL contexts that had been previously established in chapter 1 (see section 1.4.5). The challenges derived from the lack of linguistic resources and cognitive effort that CLIL students go through, are elements that can indeed block learning. In view of this, Meyer's (2010) set of strategies for successful and sustainable CLIL teaching and learning have been mentioned, concluding that they imply the important role that emotional factors have when it comes to learning.

With regard to similarities among learners, Ginnis's (2002) four main characteristics have been outlined. The first one deals with the need to feel emotionally secure and psychologically safe. The second is the need for learners to have some control over their learning in order to feel motivated and open to learning. The third deals with learning to learn processes that students go through when learning things for themselves. Lastly, the fourth similarity considers promoting the practice of activities that are carried out from multi-sensory perspectives. This last similarity has built a bridge to briefly mention the theory of multiple intelligences. This has been done in a way that reminds the reader that other theories have indeed reflected on the need to approach learning from multiple perspectives catering for each individual learning style.

This has helped to shed light into what has NLP to offer in education. Since the way individuals understand the world is different and unique to each one of us (a base upon NLP lays its foundations), trying to accommodate all different types of learners in

the context in which learning occurs is imperative. As a consequence, the need to explore into approaches that enhance learning from different sensory perspectives has been identified.

In the second part of this chapter, the NLP definition and description have been provided. Neuro refers to the nervous system and the brain, linguistic has to do with verbal and non-verbal communication and programming deals with behaviour, thinking patterns and the way ideas and actions are classified in the brain. The main aim of NLP is to uncover successful patterns of behaviour and beliefs that can be taught to others to help them achieve similar results. Later on, the differentiation among linguistic and epistemological presuppositions was established. This helped building a bridge towards examining the basic NLP presuppositions that can be found in most NLP manuals. Given that the aim of this dissertation is to find out the impact of the NLP spelling strategy in CLIL contexts, the most basic presupposition (i.e., the map is not the territory) was illustrated in a following section (see section 2.2.2).

Individuals experience the world differently. Aspects such as the way we perceive the world through our senses, beliefs, values, social background, language and culture shape each individual's map of reality. These aspects act as filters through which individuals create their own map of reality. Thus, it has been established that the difference among maps lies in the filters that enhance or impede the learning process. In this sense, NLP suggests that language can make a difference in the way the world is perceived. Therefore, teachers are encouraged to cater for diversity not only when planning and designing activities (as seen in section 2.1.3) but also using inclusive sensory language. All in all, in a context in which learning happens without anxiety where confidence and positive behaviour are stimulated. This section reached to the conclusion that getting acquainted with students' maps of reality will promote teacher-student relationships in a way that makes a better understanding among subjects. Furthermore, bearing in mind that we all learn differently, teachers become flexible when training students how to learn best to achieve specific outcomes.

Due to the influence the five senses have when getting information about the world, the NLP sensory modalities or representational systems have been outlined in a following section (see section 2.2.3). There are three main representational systems, visual (V), auditory (A) and kinaesthetic (K). They are inclusive but individuals tend to show

preference to one or two representational systems. In this vein, the reviewed literature justifies that analysing and identifying the representational systems is one of the most significant aspects of NLP. As a result, the three main representational systems (i.e., V-A-K) were examined. Each type of learner shares as a series of physiology characteristics, similar talk and behaviour depending on whether they are V, A or K. The characteristics included in each representational system serve as hints for teachers to guess their students' preferred sensory modality.

Taking into account students' learning preferences, teachers can build up relationships with students by mirroring behaviour or adapting language whilst ensuring they get the information through their preferred representational system. However, it has been established the importance of not making vain generalisations of identities. This is due to the complexity of the activities the brain goes through that deal with the input, the way it processes, stores and retrieves information to be able to produce an output. The overall conclusion of this section is that getting acquainted with students' personalities and cognitive styles can help teachers to know them best. This information offers opportunities to become flexible in the ways teachers try to reach students.

In addition to this, in NLP it is believed that the way our eyes move when retrieving information and interacting with others gives evidence about the use of a specific representational system. As a result, the next section of this dissertation dealt with the concept of Eye Accessing Cues (EAC) (see section 2.2.4). In the first part of this section, the basic NLP eye accessing cues model and the relationship among eye patterns and thinking were analysed. Later the first connection to spelling and the visual representational system was established. NLP studies reviewed indicate that those who are good spellers see the word in their minds and thus, are mostly visual learners. All things considered, knowing the relationship between the eyes movements and thinking, gives teachers an important advantage in order to find out whether students are retrieving information in the form of pictures, sounds or feelings. Consequently, in order to engage different personalities, maps of the world and representational systems, teachers should ensure that they present lessons with sensory integrated language and activities.

Having discussed the NLP description, presuppositions, the most important presupposition (i.e., the map is not the territory), representational systems and eye accessing cues, the final section of this chapter addresses several studies that are very

critical with NLP in general and some of the aspects mentioned above in particular. Critics have questioned the efficacy of NLP since it was ideated. In this section several studies (Ridings, 1983; Heap, 1988) reveal that there is no evidence in recognising someone's primary representational system through the use of predicates or eye accessing cues. However, some of these studies are disproved by other researches (Diamantopoulos et. al., 2009) due to the lack of original references or the disagreements among studies. Other authors (Witowsky, 2010) question the results of scientific NLP articles ever published discrediting NLP in the use of therapy. However, since the purpose of this doctoral dissertation is to deal with a specific strategy of NLP in a foreign language learning context, the criticisms made to this field were examined.

In this sense, Craft (2001) challenged the role that NLP has in the accepted learning theories. The five major issues she addresses in her study such as theoretical cohesion or epistemological foundations of NLP were mentioned. Craft's study was devastatingly critiqued by Tosey and Mathison (2003a) who invalidated her study in a response that tried to shed light into misunderstandings and misconceptions that Craft had done in her review. In addition, they claim that Craft's paper fails to show original sources or evidence in refuting the efficacy of NLP in learning contexts.

Nevertheless, to conclude this section, the literature reviewed identifies a lack of academic research in NLP. In this vein, Tosey's and Mathison's (2010) study in NLP as an innovation in education and teaching was outlined in a set of critical challenges that need to be addressed. The belief that there is evidence that invalidates NLP or the lack of research evidence were specially considered in this section.

To conclude, this last section attempted to provide a brief summary of the literature contradicting the effectiveness of NLP. However, most studies are found to be challenged by other scholars who still claim that NLP can offer with positive pedagogical implications for English language teaching and foreign language teaching. In particular, a need of empiric studies that plunge into NLP strategies that deal with teaching skills and sub-skills of the foreign language was identified. Consequently, in the chapter that follows, the role of NLP in ELT and CLIL will be analysed in order to shed light into how the NLP spelling strategy can help students with content word spellings in CLIL contexts.

CHAPTER 3. NEURO-LINGUISTIC PROGRAMMING IMPLICATIONS TO FOREIGN LANGUAGE TEACHING AND CONTENT AND LANGUAGE INTEGRATED LEARNING: THE NEURO-LINGUISTIC SPELLING STRATEGY

3.1. Neuro-linguistic Programming in teaching English as a foreign language

English is one of the most spoken languages around the world. According to Baker (2011), English is found as first, second and foreign language in all five continents. As previously stated in chapter 1, the position English takes in relation to bilingualism is quite different across Europe. This is due to diverse elements such as politics or even other languages spoken within a country that make each situation unique. Nevertheless, any English teacher across the world may face similar challenges (Copland, Garton and Burns, 2014). In this vein, Vedha (2017) identifies some challenges in India, where English is taught as a second language, such as dated methodologies, large groups, lack of language expertise from teachers or lack of useful resources that surely meets some challenges that need to be faced worldwide.

In order to overcome these challenges, as Vedha (2017) suggests, NLP can help teachers since it “has proved to be highly useful for enhancing learning environments” (Ibid.: 208) even if it cannot be considered an English language teaching methodology. In a previous study, Darn (2005) argues that there is no discordance between NLP and present ELT methodologies and approaches. What is more, he claims that NLP can assist language learning with a wide range of strategies that can be applied to various language learning methodologies and doctrines. Nevertheless, Richards and Rogers (2000) argue that NLP and its use in language lessons have been given little attention. The following is a brief description of how NLP can assist in language classes in general and in English classes as a foreign language in particular.

Puchta (2010) argues that many language teaching methodologists and practitioners fail to determine the factors that promote success in the foreign language class. As it has been established in previous sections (see sections 2.1.1 and 2.1.2), Krashen’s affective filter variables of motivation, self-confidence and reduced anxiety are elements that enhance the success of language learning processes. Similarly, Puchta (2010) stresses importance in the role of motivation, beliefs and identity beyond materials, techniques and linguistic analyses that are also important elements when it comes to language learning

success. He stresses the role of beliefs in the foreign language class as “strong perceptual filters” (Ibid.: 4) that promote or block language learning. He suggests that beliefs are strong perceptual filters of reality because “when we believe something, we act as if it is true” (Ibid.; 8).

In his view, beliefs are formed when modelling significant others, and with the conclusions we get from the repetition of experiences. Puchta (2010) claims that for young foreign language learners, their English teacher is indeed, a significant other. This connects to the motivation section explained in chapter 2 (see section 2.1.1), in which it was established that since in NLP, learning is done by modelling, the way teachers react to student performances can open or block the learning process. In line with this, O’Connor and Seymour (1990) suggest that the expectations shared by significant others around us, high or low, make an influence into what young children believe as capable of doing. They argue that these beliefs may persist unaltered by later achievements, as there is no way to test these beliefs when we are young. In their opinion, as a rule, young children believe what they are told.

This idea takes us back to the theory of the logical levels mentioned above (see section 2.2.5) where the environment makes an impact of an individual’s thinking (Puchta, 2010). Thus, he implies that students’ skills and the consequent behaviour in the foreign language class is determined by their belief system or identity. Consequently, there is a need to maintain high levels of motivation and preserve the learner identity as good language learners in order to increase the chances of success in the foreign language class.

Both students’ and teacher’s belief systems play an important part in the potential language learning success (Puchta, 2010). As mentioned earlier, Revell and Norman (1997) claim that NLP lays in in a set of presuppositions that can enhance the teaching learning process (see section 2.2.1). That is so, that Revell and Norman (1997: 15) point out 13 essential NLP presuppositions for English language teachers to add to their beliefs system:

1. Mind and body are interconnected: they are parts of the same system, and each affects the other;
2. The map is not the territory: we all have different maps of the world;
3. There is no failure, only feedback... and a renewed opportunity for success;
4. The map becomes the territory: what you believe to be true either is true or becomes true;
5. Knowing what you want helps you get it;
6. The resources we need are within us;
7. Communication is non-verbal as well as verbal;
8. The non-conscious mind is benevolent;
9. Communication is non-conscious as well as conscious;
10. All behaviour has a positive intention;
11. The meaning of my communication is the response I get;
12. Modelling excellent behaviour leads to excellence; and
13. In any system, the element with the greater flexibility will have the most influence on that system.

Taking these presuppositions to be true may have potential benefits for language teaching (Revell and Norman, 1997), regardless the methodology used in class (Antic, 2006). As an example, analysing the third presupposition “There is no failure, only feedback [...] and a renewed opportunity for success”, a practical teaching approach would be to provide the learning context with feedback opportunities that encourage further learning (Baker, 2005). In this regard, it has been noted that the way teachers approach mistakes have an influence in the learning process (see section 1 in chapter 2). Given that mistakes are seen as opportunities to diagnose learning deficits and forge understanding (Stigler and Stevenson, 1991), adopting a negative attitude towards mistakes will translate into losing learning opportunities. Therefore, the way teachers deliver feedback in the foreign language class by for example, providing with NLP feedback that “focuses on behaviour (and doesn’t criticise the person), is clear, specific and timely” (Baker, 2005: 16) is a powerful tool that can encourage high motivation and low anxiety levels in the foreign language class.

Furthermore, it has already been concluded that NLP has positive pedagogical implications for English language teaching and foreign language teaching (see section

2.2.5). Similarly, Antić (2006) claims that NLP practitioners consider that when language teachers follow NLP techniques they become more effective. Yet, Millrood (2004) argues that “there is little evidence of the impact that NLP techniques in teachers’ discourse can have on learners” (p. 28). Nevertheless, he concludes his study about teachers’ discourse by stating that taking teachers’ discourse into consideration enhances teachers’ awareness of this fact. In his opinion, this is a vital aspect since the way the teachers interact with students is a sign of success or failure in learning contexts.

Hence, the seventh presupposition depicted above “Communication is non-verbal as well as verbal” relates to English language teaching by taking into consideration, as Tosey and Mathison (2003b) argue, that teachers cannot not communicate as they do it consciously and unconsciously throughout the whole teaching and learning process. Consequently, Pishghadam and Sayasteh (2014) claim that NLP “is now emerging as an emotional bridge” (p.2) to help teachers motivate students towards learning success by means of functional rapport. Hence, NLP is also a way to enhance the language learning process by encouraging personal relationships.

Nonetheless, Farahani (2018) claims that NLP involves much more than the use of language. In her review, she adds that NLP deals with behaviour and strategic thinking that happens during the learning process. In her opinion, this “is more likely to result in effective language learning compared to focusing on language alone” (Ibid.: 79). Therefore, NLP also deals with behaviour and strategic thinking that happens in the language class.

From a language learning context point of view, Herbert Puchta³², a writer of ELT material, professional teacher trainer and master practitioner in NLP, maintains that when students excel at some skill, as for instance, remembering new words in a foreign language, an NLP approach would be to find out what these students do in terms of behaviour, supportive beliefs and cognitive strategies they use. Puchta adds later on that NLP has explored a set of tools to learn how to model the skills of successful people in order to be able to teach them to others.

³² The full Herbert Puchta’s interview is available at:
http://www.cambridge.org/elt/englishinmind/teacher_resources/interview_teacher.htm

However, as described in the second chapter (see section 2.1.1), motivation is the key that triggers language-learning success. Thus, no matter how many strategies NLP can offer to enhance the language learning process if students are not motivated to use them. In line with this, Puchta and Rinvoluceri (2005) argue that motivation partially relies on activities that are meaningful, which implies students feeling they are being addressed. In order to do so, teachers need to tackle into sensory input or representational systems of students (see section 2.2.3). This view is supported by Revell and Norman (1997) who claim that, even though teachers are not always acquainted with the different representational systems, they have probably used many activities that enhance VAK learning. As an example, Revell and Norman (1997:32) divide teaching activities used in English Language Teaching (ELT) as follows:

Table 2: Teaching activities used in ELT that can favour different representational system preferences of students.

Visual	Auditory	Kinaesthetic
- Using lots of picture, graphs, colours and shapes.	- Using listening with varied voices, songs, music, rhythm and rhyme.	- Having real objects for students to touch as they talk about them.
- Decorating the classroom with pictures ad students' work.	- Oral drills.	- Using mime activities that get students moving.
- Giving an overview of what you are going to teach.	- Pausing when you speak from time to time to allow students to repeat what has been said (in their head or out loud)	- Drama and role-play.
- Allowing students to take notes.		- Practical project work.
		- Engaging students' feelings.
		- Allowing students to take notes.

As seen in previous sections, the more representational systems teachers can include in their classes, the merrier (see section 2.2.3). This way, teachers will be more likely to tap into their students learning preferences during the teaching and learning process. By allowing students to take notes, for instance, teachers will be enhancing visual and kinaesthetic learners but will be missing those students whose preferred channel is

auditory. For that reason, Revell and Norman (1997) argue that since auditory acuity is of vital importance for the learning of pronunciation in a foreign language, teachers must ensure that they try to present or recycle language from all three main representational systems. In so doing, they claim that students will be able “to transfer the learning to other situations” (Ibid.: 32). Consequently, NLP becomes a tool to help students develop learning to learn strategies that will enhance their learning throughout the curriculum.

A couple of years after Revell and Norman’s book on NLP in ELT, Puchta (1999) observes that NLP has “become a buzzword in EFL circles” (1999). He points out “how the mind (neuro) interacts with language (linguistic) and the body [...in order to develop...] explicit skills and techniques – patterns of excellence – that people can learn and thus, enhancing their own performance” (p. 246). Thus, teaching and learning strategies that take into account mind, body and language in order to promote everyone’s successful performance. Similarly, Harris (2001) notes that NLP has to do with the relationship between language and mind, which is in fact an appealing topic for language teachers and researchers. In contrast, she also suggests that there are also some NLP detractors who defend that “NLP lacks upon which to lay its foundations” (Harris, 2001:35). As it has been extensively discussed in other sections of this dissertation (see section 2.2.5), NLP benefits in learning contexts is controversial among researchers.

The benefits of NLP in ELT is no different. In this sense, Harris (2001) observes once more the lack of academic literature to meet the popularity that NLP has in ELT contexts. Since Harris words, there has been several studies reflecting on the efficacy of NLP (Craft, 2001; Tosey and Mathison, 2003a, 2010; Diamantopoulos, Wolley and Spann, 2009; Witowski, 2010) and the use of NLP in education, (Tosey and Mathison, 2003b; 2010) and NLP in ELT and EFL (Puchta, 1999, 2010; Darn 2005; Antić, 2006; Pishghadam and Sayasteh 2014; Vedha, 2017; Farahani, 2018) but certainly not enough. Teaching is a challenging position since there is a vast repertoire of approaches and methodologies that can be applied for this purpose. My own view on this aspect is that the key is always to adapt different approaches, methods, techniques and strategies that best fit our learners and context. This necessarily implies the need to take risks and try out new tools and strategies that may help and enhance the teaching learning process.

To sum up, regardless the differences in the different programmes of ELT and CLIL across Europe and Spain in particular, teachers share similar challenges in practice. As it has been depicted, NLP can assist ELT/EFL with strategies and techniques that complement other methodologies. By acknowledging the fact that the environment plays a crucial part in learning, a base upon NLP lays its foundations, teachers are empowered to keep up with levels of motivation and anxiety. Both are identified as indicators of learning success (see sections 2.1.1 and 2.1.2). In order to do so, NLP use in ELT proposes to embrace 13 presuppositions (Revell and Norman, 1997) that will enhance ELT and learning if accepted as truth. On the one hand, the importance of well-timed, clear, specific and respectful feedback that encourages and promotes further learning without blocking emotional filters has been highlighted. On the other, it has been reviewed how NLP can promote communication that improves personal relationships since it not only deals with the use of language but behaviour and strategic thinking that happens throughout the process conscious or unconsciously.

This has led to the review of NLP in language learning contexts. Once more, NLP is depicted as modelling what tends to be successful in terms of behaviour, beliefs (both, students and teachers) and cognitive strategies, bearing in mind that these might be different among individuals. In practical terms, the activities categorization in the three most common representational systems is the evidence that most activities tap into one or more students' systems. By making sure that activities are varied to enhance learning performance, teachers will be providing with opportunities for deeper learning. This enables them to use the strategies learnt in many other contexts.

Finally, despite the fact that NLP creates controversy among academics, there are still many voices that claim further research in ELT suggesting that NLP has positive implications in language teaching (Harris, 2001 and Farahani, 2018, among others). Since CLIL implies a lot more than teaching English as a foreign language due to the additional challenges of learning contents through a second language, it is necessary to delve into ways of how NLP can assist to overcome some of these challenges, such as specific scientific vocabulary that students have to face since the very beginning of CLIL programmes.

3.2. Neuro-linguistic Programming in Content and Language Integrated Learning

Although CLIL methodology shares many aspects of ELT/EFL such as using language in a meaningful context, teaching English is not the same as teaching and learning through English (Darn, 2006). On the one hand, CLIL is considered to get better results regarding Communicative Competence compared to EFL more traditional approaches (Dalton-Puffer, 2008). This is because in CLIL contexts, “students have to be able to use the vehicular language to learn content” (Coyle et al., 2010: 33). Accordingly, Clegg (2011) suggests that teaching CLIL lessons makes teachers grow into proficient spotters at anticipating language problems. Given that language planning is necessary in CLIL methodology, this becomes a habit and routine, and thus, effortless. In addition to this, Coyle et al. (2010) suggest that:

CLIL teachers will have to consider how to actively involve learners to enable them to think through and articulate their own learning. This turn implies that learners need to be made aware of their own learning through developing metacognitive skills such as ‘learning to learn’ (p. 29).

As for teachers, the goal is then recognizing learning patterns and finding out ‘learn to learn’ strategies, whilst being able to teach them to others. This in fact resembles some of the NLP definitions provided in this chapter by Puchta (1999) as the way mind and language connect in order to develop explicit skills and techniques that can be taught and learned. In addition to this, taking Coyle’s et al. (2010) above words into account, one important element of CLIL success is making learners aware of the way they learn. By doing this, teachers focus on learning procedures or ‘how’ students learn rather than ‘what’ they learn. This should be done whilst making students informed and aware of learning steps in order to help them develop learn to learn strategies. This is indeed the sort of philosophy that NLP represents, “a ‘how to’ rather than a ‘what’” (Churches and Terry, 2007: ix). Hence, NLP and CLIL put emphasis on procedures and strategies that help students learning to learn in order achieve specific outcomes.

Throughout this dissertation, different core NLP concepts related to learning and foreign language learning have been depicted. NLP comprises a set of set of teachers and student beliefs (see sections 2.2.1 and 3.1) that taken as truth can enhance personal performance. NLP claims to cater individual learning styles (see sections 2.2.3 and 2.2.4) and most importantly, NLP suggests a set of strategies that can be trained for better

performance in foreign language classes contexts (Puchta, 1999 and 2010). Furthermore, by making explicit the learning of procedures they become learning to learn strategies (Revell and Norman, 1997; Dilts, 1997).

With regard to learning styles, Lazăr's (2016) suggestions on introducing CLIL in primary schools highlight the need to adapt activities and strategies to different students. In her article, she asks readers to imagine they have visual, auditory, kinaesthetic and tactile learners, that are no other than the NLP main representational systems, and suggests a set of activities and strategies that can enhance each type of students. Hence, NLP is an aid for the CLIL teacher that when designing lesson, plans to cater for learning differences in styles and paces. In addition, she claims that CLIL teachers need to offer students with verbal, content and learning scaffolding throughout the process. Therefore, high challenging tasks or high challenging vocabulary, require more opportunities for language support to be provided (Gibbons, 2002).

Whilst analysing reading, writing and spelling in CLIL contexts (see section 1.4.5), the double challenge of having to simultaneously learn new concepts whilst having to understand them in a foreign language (Halbach, 2012) was highlighted. Therefore, it seems necessary to analyse approaches to vocabulary teaching. In this sense, Hunt and Beglar (2002) differentiate among three approaches to vocabulary teaching: incidental learning, explicit instruction and independent strategy development. Among these three, they argue that explicit vocabulary instruction is necessary for students at early learning stages since the lack of vocabulary students have restricts their reading skills. Accordingly, Nation (2002) suggests that the non-contextualized vocabulary instruction is in fact a swift way to expand vocabulary knowledge. Consequently, explicit vocabulary teaching is necessary to ensure language learning.

CLIL teachers not only have to explicitly teach content-based vocabulary to enhance the comprehension of content-subject reading texts, but also have to develop strategies to encourage an accurate use of the language. At the same time, Templeton and Morris (1999) clarify that the words students learn must always be at their developmental level avoiding frustration. However, this is something that sometimes does not happen within CLIL contexts in which students have to work with words that are far beyond their competence level. This is supported by Tragant et. al. (2016) who argue that students at primary education level, who learn content subjects in a foreign language through CLIL,

often have to deal with challenging abstract and technical vocabulary above their competence level that is certainly more demanding.

As a matter of fact, they conclude their study claiming that learning English through Science has proven to be more difficult than learning English in EFL contexts. In line with Halbach (2012), they suggest that this is because learning vocabulary in CLIL contexts is more elaborated since it does not only deal with new words, but the understanding of new contents developed in tasks that have different cognitive demands. As a consequence, teachers at primary level should be aware of the fact that walking through procedures and sharing expectations with students, NLP fundamentals, is required if we want our students to succeed at this stage (Grinder, 1991).

In conclusion, ELT, EFL and CLIL seem to share some fundamentals but also some challenges. One of the most important challenges that CLIL students face is having to work with textbooks and materials that are significantly more difficult than learning a language with the EFL textbook (Trangant et. al., 2016). Another important challenge is that CLIL teachers and students deal with the use of specific abstract, scientific content words that in many occasions are above students' level of competence. In spite of this, CLIL is always described as the most successful methodology in terms of language proficiency. Evidence reported throughout this dissertation has pointed out that learning in CLIL contexts has emotional implications that need to be considered (see section 2.1.3). In order to do so, NLP has been depicted as an additional tool that can empower the teaching practice by means of creating positive rapport, taking into account individual learning differences and as a source of learning to learn strategies.

Given that CLIL and NLP share the need to develop metacognitive skills such as learning to learn strategies, it seems appropriate to delve into one strategy that claims to improve spelling. As mentioned earlier, many scholars complain about a lack of NLP empiric research (Biswal and Prusty, 2011), lack of empiric research on NLP in learning theory (Craft, 2001), NLP in Education (Tosey and Mathison, 2010), NLP in ELT (Harris, 2001; Farahani, 2018) and a shortage of empiric research on NLP effectiveness in these and other fields (Witowski, 2010; Diamantopoulos et al., 2009). However, any of the sources reviewed throughout this dissertation mentions a lack (or a need) of empiric research of NLP in CLIL. Therefore, given that NLP research in ELT is scarce, it is fair to think then that sources of empiric research of NLP in CLIL are even fewer and almost non-existent.

In the next section, the NLP spelling strategy will be highlighted as a strategy used in the teaching of spelling, a sub-skill of written language. In line with Farahani's (2018) request for sources that outline NLP strategies used to teach skills and sub-skills of the language, the NLP spelling strategy will be illustrated. This will be done in order to bridge the gap between NLP strategies in theory and in practice.

Furthermore, this doctoral dissertation is carried out in Spain. According to Harris (2001), in this country, there is brief time to investigate new sources and approaches to language teaching due to heavy timetables and increasing bureaucracy. Therefore, there is a need of ready to use strategies that are easy to understand and learn for both, teachers and students. Concerning this, he argues that NLP offers with learning strategies that "can be just as easily transmitted by teachers as they can be absorbed by learners of all learning stages" (Ibid.: 36). Thus, NLP should provide with an easy to follow spelling strategy that is uncomplicated to learn for students. First, the characteristics that make the NLP spelling strategy will be outlined along with some examples of how this strategy can be followed in practice. The next step is to explore the efficacy of the spelling strategy in CLIL contexts.

3.3. Neuro-linguistic Programming and Spelling

In a previous section of this dissertation the relationship between the main representational systems and eye accessing cues was established (see section 2.2.4). Within this relationship, it was noted that Grinder (1991) suggests that accurate spellers are individuals who can see words in their mind, what he considers fundamental for academic success. In this sense, he argues that "students who have less difficulty [...] are students who can immediately convert information heard (input) into internal (storage) visual form" (Ibid.: 93). This happens, for instance, when students are taking notes, which indeed involves the visualisation of words and body movement, an attempt to use the three main representational systems.

Nonetheless, spelling is something else, especially in the English language where words are not always written the way they sound. As it was established in previous sections of this doctoral dissertation (see section 1.4.4), spelling is a key element of written communication. Its instruction combined with the learning of reading and writing strengthens the learning of both skills. In this sense, it was highlighted that spelling

instruction also contributes to phonological awareness and alphabetic understanding in the early stages of reading (Santoro et. al., 2006). Although phonological awareness has been mentioned as a primary source in the development of reading skills, it has been noted that this should be complemented with other strategies that enhance instruction in sound-spelling correspondences (see section 1.4.2).

In connection with this, Revell and Norman (1997) remark that an auditory approach to a non-phonetic language tends to forge poor spellers. They suggest that “good spellers in English are people who visualise the word [...] and check how it feels kinaesthetically” (Ibid.: 41). Thus, writing what it is seen in the mind. In fact, many of us need to jot the letters of a specific word to find out whether it feels right. In the same vein, Dilts (1997) claims that whilst phonics may be of great help when trying to spell out a complete new word, it can also be a misleading strategy since many words in the English language are not written the way they sound. Consequently, he suggests that good spellers simply remember how the words look.

In addition to this, Dilts (1997) argues that there are other factors influencing spelling such as beliefs that ‘could create a large amount of unconscious resistance if not addressed’ and identity issues since “good spellers perceive their success as a statement about their identity and their failures as a specific behaviour”. Hence, if students are able to see themselves as successful learners thanks to the NLP Spelling strategy, motivation and positive emotional factors towards the foreign language learning and use will be promoted.

Finally, Dilts (1997) highlights how spelling’s objective is learning to learn new words. Hence, learning the spelling of words is an activity that promotes learning to learn new ones. As it was previously commented in this dissertation (see section 3.2), NLP and CLIL have in common the development of metacognitive skills that enhances students to learn how to learn. Therefore, we have encountered a learning to learn approach to spelling that meets with the cognitive demands promoted by CLIL contexts. Nonetheless, it is necessary to review what past research pointed out about the use of the NLP spelling strategy in education.

3.3.1. Review on the effectiveness of the NLP spelling strategy in education

In 2010, Carey et al. (2010) carried out a research on ‘NLP teacher case studies on the impact of NLP in education’. In the full report, they review evidence about the use of NLP in education, and study 24 teacher case studies that in most cases confirm the positive implications NLP has in education. Regarding the evidence about the use of NLP in education, they suggest that university academic research done from 1985 to 1995, supports “the use of the NLP ‘visual’ spellings strategy” (Ibid.: 12). However, they note once more the controversy this creates among critics who suggest that there is no evidence to support this claim. As commented in previous sections (see section 2.2.5), one of the most controversial aspects of NLP is the eye position individuals tend to show when thinking, as a way to discover whether they are thinking visual, auditory or kinaesthetically.

However, as far as spelling is concerned, Carey et al. (2010) argue that there is some evidence supporting the effective memorisation of spellings and eye position. As an example, they mention Malloy (Carey et al., 2010 indebted to Malloy, 1995) who carried out a research in the effectiveness of a visual spelling strategy in which three different groups of ‘average’ spellers were investigated. In one group, the NLP spelling strategy was taught, in a second group spelling was approached using phonetics and sounding out words and a third control group that was not given any strategy. This study reveals that those students who were taught to recall spellings visually (looking up and to the left) significantly improved and retained the spelling of new words for longer when compared to any of the other groups. In the same vein, another research carried out by Kennedy, Van Nagel and Lovett (1994) with 10 students that were taught the NLP spelling strategy, concludes that this practice significantly improved spelling scores compared to the control group. In addition, they note how students taught and NLP approach to learning spelling words were able to spread this method to other content areas.

Regarding the eye position, the NLP spelling strategy suggests (up and left), Carey et al. (2010) also mention a research carried out by Loiselle (Carey et al., 2010 indebted to Loiselle, 1985a) that finds out that training to recall spellings looking up and left, doubles the effectiveness of the strategy when compared to only requesting the visualisation of words. In the same vein, identical studies are reviewed and supported by Biswal and Prusty (2011), who published an article about current research trends in NLP,

being “studies on NLP model of sensory system use and the NLP spelling strategy” (Ibid.: 47) one of them. They conclude by saying that evidence showed by Malloy (Biswal and Prusty, 2011 indebted to Malloy, 1995) and Loisel (Biswal and Prusty, 2011 indebted to Loisel, 1985b) support the idea of eye accessing cues, sensory system use, strategies in general and the NLP spelling strategy in particular. However, they request future further research on the NLP effectiveness due to the insufficient data backing NLP utility, although they focus on therapeutic and self-development courses.

With regard to the teachers’ case studies presented in Carey et al.’s (2010) report, only two cases (17 and 20) work with the notions of eye accessing cues and the spelling strategy. A year later, Carey et al. (2011) publish a report based on teacher case study evidence that aim to support the effectiveness of NLP in primary and secondary school classrooms’ where these two cases are stressed. In the discussion of evidence in the teacher case studies, they highlight one (Case Study 17) that focuses on eye accessing cues and visual spelling for the teaching of reading. This case study concludes reporting positive implications into using the NLP spelling strategy with students using an ineffective phonetic approach to reading or with limited flexibility. A different teacher’s case study (Case Study 20) points out how the use of the NLP spelling strategy in class made an impact in terms of learning and behaviour. This case observes that not only spelling improved by making the student target of the research more confident, but also that she was able to use similar strategies to help her remember other areas of the curriculum.

As commented in a previous section when reviewing the effectiveness of the NLP spelling strategy in education (see section 3.3.1), this makes a connection to Kennedy et al. (1994) study on the efficacy of the NLP spelling strategies. As a reminder, they concluded their study by arguing that this strategy not only helped with spelling, but also became a strategy that students were able to use in other areas. Therefore, the positive implications presented about the use of the NLP spelling strategy in education requires additional research on the potential benefits this may have for CLIL education.

So far, the important position of spelling instruction in the development of reading and writing skills has been once more remarked. In a language with a non-transparent orthography, the role that spelling plays in reading and writing is crucial. Therefore, giving opportunities to train this skill becomes then something to be considered. Especially in CLIL contexts where, as previously commented (see section 1.4.5), the challenges are

doubled since students are learning two (or more) languages at the same time. However, there are elements that make spelling more successful than others. In this sense, several studies reviewed affirm that good spellers visualise the words in their minds, what makes those spellers recalling spellings from the auditory or kinaesthetic channel less effective. As a consequence, other studies supporting the evidence of the memorization of spelling, through the visualisation of words and a more specific eye position (up and left) have been reviewed.

Research on the effectiveness of NLP is scarce and mostly conducted during the 20th century. Therefore, it can be concluded that the case studies presented by Carey et. al. (2010 and 2011), are the most contemporary evidence on the use and effectiveness of the NLP spelling strategy in education. The positive outcomes reported, make an explicit need to further research about the effectiveness of this spelling strategy in learning contexts and more specifically in CLIL contexts. However, once established the potential validity of the NLP spelling strategy throughout this section, it is necessary to specify in detail the procedures for its practical application. Consequently, in the section that follows the NLP spelling strategy will be presented.

3.4. Neuro-linguistic Programming Spelling Strategy

As noted earlier, NLP is more concerned about the process rather than the outcome (Darn, 2005; Richard and Churches, 2007) and, thus, from an NLP perspective, the ability with spelling is about the organization of internal mental procedures a person does when spelling (Dilts, 1997). To date, there are various examples of activities or practical exercises to follow in order to teach the NLP spelling strategy (Grinder, 1991; Revell and Norman, 1997; Hickmott and Bendefy, 2006; Gabarró and Puigarnau, 2010). In order to have a brief overview a few examples will be mentioned. Grinder (1991) for instance, presents four different examples of three to six steps that enable the visualisation of spelling. In order to illustrate this, the following is an example of one of the exercises that he suggests (Ibid.: 118):

Table 3: Practical example of the NLP spelling strategy

Step	Example 1
1	Write the words on the board and say to class, “As you see the letters, say them aloud forward.” Use an auditory non-verbal clue (i.e. snap your fingers) to indicate the pace of saying each letter. Repeat.
2	Have them look anywhere in the room but the board, see the letters and recite aloud together (use the same auditory nonverbal cue). Repeat.
3	Have students look back at board and say, “As you see all the letters, say all the letters backwards.” (Use the same auditory nonverbal cue). Repeat.
4	Say “look somewhere else in the room, see the letters and spell the word backwards.”
5	Say, “with eyes still on same place as before (previous step), say word and spell forward.

As it can be observed, following these steps the teacher tries to use all three main representational systems, focusing on the visual when recalling spellings. However, he does not explain the reasons behind having to spell backwards nowhere near his exercises’ proposal. With regard to this, Revell and Norman (1997) explain a similar strategy in very simple steps in which the final aim is to ask students to spell words backwards. They affirm that spelling backwards is only possible if students are visualising the word by reading the letters in their minds. Accordingly, Dilts (1997) claims that something visual keeps its shape whether people look it left to right or right to left. Therefore, this strategy deals with the visualisation of words.

Due to the correspondence that exists in the representational system people use and their eye movements, the idea is to locate the word up so students can create a clear picture. Therefore, the first step that Revell and Norman (1997) propose is to hold a word card up high so students need to look up to see it. Later on, students would need to consciously take a mental photograph of the word given in order to be able to write it down from memory. This will happen after visualising the word in their minds for some time. Revell and Norman (1997) also describe how the use of colours and sizes highlight important spelling features that can support the process. These steps should be repeated until students are able to learn the word. Then, it is possible to prove the success of this strategy by asking students to spell the word backwards, and thus, recalling the word from their visual memory.

According to Gabarró (2010 and 2012), those who manage well in orthography share the same strategies. First, when they hear or say to themselves a word that they want to write, they see the letters of the words in their minds. Second, they know if the word they see in their mind is accurate enough to write it down or need to seek for help if they are unsure about it. Third, they write the word the way they see it and recognise with confidence. Therefore, he claims that good spellers follow these steps as going through a maths operation:

Good hearing + Visual recall + Feelings of contentment = Accurate writing production
writing (taken and translated from Gabarró, 2012: 40)

Furthermore, he argues that these steps can be learned and automatized in order to help others improve with spelling. Thus, it becomes the process that teachers need to present to students when dealing with spelling. In this regard, Gabarró and Pigarnau (2010) suggest a series of spelling activities to link visual memory and spelling. The objective of these activities is to compel students to use visual memory. For instance, by remembering the colours of specific letters or spelling backwards. In addition, they propose other activities to deal with the feelings of contentment that students have when visualising the words. These activities focus on developing a confident feeling when visualising the word that will enable students to know whether they are correct or need to seek for help. In general terms, teaching that words must be seen before writing them. Despite the differences among the different applications of the NLP spelling strategy, it is clear that the main aim is to train students in the visualisation of spelling. NLP reveals what tends to be successful in terms of the patterns good spellers use. This allows teacher and students to easily learn and apply them in order to improve their spelling.

Nahari and Alfadda (2016) have also investigated the effect of using visualisation strategies to improve students spelling skills. In their study they do not mention NLP. However, they conclude by pointing out that visualisation strategies have proven to have positive implications not only with regard to students overcoming spelling difficulties, but also a positive effect on students' attitude. In their research they gather students' opinions in the experimental group through attitudinal questionnaires. These questionnaires reveal students' beliefs and feelings gathered during the process of learning to spell using visual strategies. From the results of these questionnaires they argue that visualisation strategies made students more motivated and interested than when taught in a more orthodox

approach in spelling teaching. Furthermore, they point out that visualisation strategies not only helped students in the experimental group to overcome anxiety but also improved students' confidence when spelling words.

To conclude this section, the literature identifies that good spellers share a common pattern. When they hear or want to write a word they **see** the word in their mind. In order to outline the steps that the NLP spelling strategy suggests, several sources have been investigated. All of them suggest a number of exercises or steps to be taken in order to make students recall spelling from their visual system. From the examples given above, every activity consulted has a spelling backwards element. This is because individuals are only able to spell backwards when seeing the words in their mind. By including this factor, teachers guarantee that students are recalling spellings from the visual system and not any other. Other strategies suggest taking mental photographs or highlighting special features of words in different colour and sizes. Some other activities' purpose is to develop a sense of confidence with spelling that helps the speller recognise whether they are correct or need to seek for help asking or going to the dictionary before spelling a word. All in all, it has been established that the NLP spelling strategy deals with the visualisation of spelling.

Regarding this, a different study about the visualisation of spelling as a strategy to improve spelling skills has been reviewed. In spite of not making any reference to NLP, visualisation techniques seem to have a quite successful influence in learning the spelling of new words as well as in students' attitude while learning. In addition to this, this study is addressed to students who learn English as a second language. Therefore, an approach to spelling that deals with the visualisation of words works, regardless if they are worked in a different language.

3.5. Summary

This chapter has attempted to provide a brief summary of the literature related to NLP implications to EFL and CLIL contexts. More specifically, the first section of this chapter has reviewed the position that English takes in relation to bilingualism. Regardless the bilingual programme students follow or the country of instruction, similar challenges such as large groups or lack of useful resources have been identified as common worldwide. In order to ease these challenges and difficulties, NLP has been described as an additional help with strategies that can be useful for improving learning environments. Even if NLP cannot be considered a foreign language teaching methodology, a brief description of how NLP can assist in foreign language classes was examined in the first section of this chapter.

Concerning this, Krashen's affective filter variables of motivation, self-confidence and reduced anxiety, depicted in the previous chapter (see chapter 2, sections 2.1.1 and 2.1.2), have been connected to the role of motivation, beliefs and identity. This has been done due to the influence all these factors have in terms of language learning success. In this sense, it was concluded that beliefs, that are formed when modelling significant others, play an important role into what students believe they are capable of doing. Beliefs systems or identity are formed at a very early age, and the environment plays an important part in the way students think of themselves. This beliefs system necessarily relates to what students show in terms of skills and behaviour in the foreign language class. Thus, levels of motivation and a positive self-image as learners of the foreign language are at the heart of learning success.

Beliefs play an important part in the potential language learning success for both, teacher and students. As seen in the previous chapter (see section 2.2.1) NLP provides a set of presuppositions that can strengthen the teaching learning process. In a similar vein, 13 presuppositions specially addressed to English language teachers were illustrated (Revell and Norman, 1997). Literature reviewed indicates that regardless the teaching approach or methodology used, adding these presuppositions to the teacher's belief system increase the chances of success in English language teaching. In relation with this, two presuppositions (i.e.:, There is no failure, only feedback... and a renewed opportunity for success) (i.e.:, Communication is non-verbal as well as verbal) were further explained. On the one hand, NLP encourages the need to deliver specific, clear and timely feedback that

focuses on behaviour. On the other, in NLP the way teachers engage in communication with students is found to have implications for success (or failure) with regard to learning. Therefore, NLP helps improving personal relationships whilst enhancing the language learning process.

Furthermore, NLP has been described as the tool that uncovers the patterns of beliefs, behaviour, and cognitive strategies successful learners have (and do) when excelling at a particular skill. Once these patterns are uncovered, NLP creates models that can be easily followed and taught to others. Later, special attention has been drawn to the role of motivation in foreign language contexts that was extensively commented in chapter 2 (see section 2.1.1). Motivation is like an open door that opens or closes opportunities for foreign language learning. In order to keep the door of motivation open, teachers are suggested to make students feel connected to the activities carried out in class. The way to make this happen is by eliciting all three representational systems in a variety of tasks that help all students connect to activities one way or another. Literature reviewed indicates that NLP is present in language learning, ELT and EFL contexts. However, the lack of academic research fails to fully define the efficacy of NLP in these contexts. This fact has directed efforts into finding out aspects that are common to both CLIL and NLP in a following section (see section 3.2).

The second section of this chapter has established that even though ELT/EFL and CLIL share some similarities, such as the need to use language in a meaningful context, CLIL tends to be more demanding for both, teachers and students. Regarding students, throughout this dissertation several sections have identified critical aspects of CLIL learning for students. For instance, in the first chapter, the challenges addressed to reading, writing and spelling in CLIL contexts (see section 1.4.5) were examined. In the second chapter, the role of students' emotions in CLIL contexts was also stressed (see section 2.1.3). Now in the third chapter, different approaches to vocabulary teaching were considered since literature reviewed indicates that vocabulary learning in CLIL contexts presents a special difficulty for students.

Concerning CLIL teachers', the main aim has been highlighted as to involve learners in a way that helps them to develop metacognitive strategies that help them learn how to learn. This is parallel to both, CLIL and NLP. In NLP, making explicit the learning patterns, behaviour and strategies students need to follow in order to achieve specific

outcomes are crucial. Thus, special attention has been drawn to walking through learning procedures that results in developing learning to learn strategies. In addition to this, another connection between CLIL and NLP has been established in this section. In order to reach learners best, at an initial learning stage all learning preferences need to be involved by eliciting their preferred channel of information (V-A-K) in tasks and activities. However, the fact that CLIL implies a use of the language that might be challenging for students with lack of linguistic resources, make necessary to plan opportunities for language support and scaffolding. Therefore, the more the challenge, the more support students need to be provided with.

This section has concluded establishing the relationship between CLIL and NLP. Both approaches share the need to develop learn to learn strategies that encourage learners to learn by themselves in a meaningful way. In addition, the last consideration of this section deals with the lack of empiric research of NLP in ELT/EFL reviewed throughout the dissertation. Given that research in ELT and EFL is scarce, the section concluded with the idea that research in NLP in CLIL is also quite insufficient. For that reason, since the literature reviewed claims that there is a need to develop sources that outline NLP strategies to teach skills and sub-skills of the language, in the following section NLP and spelling along with a review in the effectiveness of the NLP spelling strategy in education has been investigated.

Turning now to NLP and spelling (see section 3.3), literature reviewed indicates that accurate spellers tend to see the word in their minds. However, there are factors such as students' beliefs that can enhance or hinder the learning process. In this sense, if students perceive themselves as good spellers it is though that this successful feeling will promote motivation and positive emotional factors towards the learning of other skills in the foreign language.

Additionally, spelling's objective from an NLP point of view was pointed out. This is no other than learning to learn new words (Dilts, 1997). Thus, a connection between CLIL and NLP was again highlighted as they both promote the development of metacognitive skills that reinforce getting students to learn how to learn. However, before explaining the NLP spelling strategy, it was necessary to revisit some studies on the effectiveness of the NLP spelling strategy in education in a subsection (see section 3.3.1). In line with this, studies reviewed in this section reported positive implications for the

teaching of spelling using the NLP strategy. This section concluded highlighting once more that research evidence in this field is scarce and mostly conducted in the last century. Thus, the need of further research about the effectiveness of the NLP spelling strategy in CLIL contexts was stressed.

To conclude, the NLP spelling strategy was described (see section 3.4). Some examples have been mentioned making special emphasis on the need to compel students into using their visual memory when recalling spellings. In line with this, literature studied suggests that one easy way to find out whether students are using the visual system (or other) is to ask them to spell the word backwards. It is argued that this can only happen when visualising the word in the mind. Therefore, in NLP a good speller is considered to be able to see the letters of a word in their minds. All in all, regardless the NLP spelling strategy example followed, the main aim is to practice the visualisation of spelling.

In the last part of this section, one study regarding the impact of visualisation strategies that is not related to NLP was examined (Nahari and Alfadda, 2016). This study concludes by indicating positive implications with regard to spelling and attitude towards spelling work. One significant aspect of this study is the use of questionnaires that reveal students' beliefs towards the learning of spelling using visual strategies. Students showed more engaged and motivated than when taught following a more traditional approach. Furthermore, being able to correctly spell foreign language words made students to reduce anxiety, boosting self-confidence.

In the chapter that follows, I present the methodology of this doctoral dissertation in an attempt to further explain how the NLP spelling strategy will be put into practice in a CLIL context in the Community of Madrid.

CHAPTER 4. METHODOLOGY AND WORK PLAN

The present chapter describes the procedures and methods used in this investigation. This is the pathway to understand how the actual performance of this study has been undertaken in order to reach the objectives and research questions stated in the introduction (for a complete review see section 0).

1. Is the use of the NLP spelling strategy an effective teaching practice to raise spelling awareness and performance? Can the use of the NLP spelling strategy improve students' spelling ability in content-subject classes? Is the NLP spelling strategy useful to memorize the spelling of content words? If so, will the use of NLP strategies in the classroom increase motivation towards written skills?
2. Do positive beliefs about spelling work bring about any change in the spelling performance? Do students who believe the NLP spelling strategy is effective perform best in spelling tests? Do students who believe that copying words is effective perform best in spelling tests? Will the use of peer and self-evaluation questionnaires make a difference regarding students' self-concept and beliefs?
3. Do learning styles affect the ability to produce accurate spellings? Is there a relationship between learning styles and spelling performance?

For the purpose of specifying the potential of the NLP spelling strategy, the present study was developed in two different phases. In 2016, an exploratory case study was conducted with a group of 25 students in 2nd grade of primary education in a *CAM's* bilingual school. Based on that experience, a set of new experimental activities have been designed and empirically tested in the second phase of the study (see sections 4.2, 4.3 and 4.4). Furthermore, several implications regarding the results and discussion from the pilot study are addressed in order to improve the main study in a following chapter (see section 5.6).

Given that the present doctoral dissertation is the result of a previous pilot study, it is worth pointing out the benefits of conducting pilot studies (Kezar, 2000; Edwin and Hundley, 2002; Thabane et. al., 2010; Arain et. al., 2010). In line with Kezar (2000), this pilot study was done in a bid to develop understanding that is gained from experiential knowledge. Parallel to this, this pilot study matches Edwin's and Hundley's (2002) definition of pilot study as a small version of the major study that puts to test research

instruments in a way that increases the chances of success in the principal study. In the belief that pilot studies are fundamental when trying to elaborate a good intervention design (Edwin and Hundley, 2002), a major advantage of conducting this pilot study is that it gave me the opportunity to better design instruments for data collection, as they had been put to test in a shorter scale study.

Furthermore, the beneficial implications of conducting this pilot study are varied. I agree with Kezar (2000) in the fact that pilot studies are what make further research practice more effective. The pilot study gave me the chance to gain experience as a researcher. Indebted to Thabane et al. (2010), the pilot study allowed me to assess the feasibility of a smaller scale study of the impact of the NLP spelling strategy in the early years of primary education before deepening into a large investigation. Given that results in pilot studies are sparsely reported (Arain et. al., 2010) and results usually focus on statistics rather than feasibility (Thabane et. al., 2010), the results of this particular study are shared in a way that brings understanding of the methods that proved to be effective.

In pursuit of assessing feasibility, the pilot study not only analysed quantitative data, for instance, from spelling performance, but also analysed qualitative data that brought an opportunity for reflection of results in tests and questionnaires under a different light. Following Arain et al.'s (2010) definition of pilot studies, this study resembles the main study as it is the initial phase that supports the final analysis.

In the following sections, I will therefore present the context of the study, the design of the intervention as well as the instruments of data collection and analysis. The methodology of this study has been improved based on previous research experience. Furthermore, the results of the pilot study conducted in 2016 will be presented in order to note implications for the betterment of the new study analysis.

4.1. The study

4.1.1. Socio-cultural background

CEIP Ntra. Sra. de Valvanera is a school situated in a low-middle socioeconomic class area of San Sebastián de los Reyes (Madrid), where many families in the neighbourhood are still struggling due to the impact of the last economic crisis. The immigrant population of the school is around 15% most of them coming from Latin American countries, China, Romania and Morocco. This school has been part of the CAM's bilingual programme since 2005 and it has recently become trilingual adding French to the programme in the last two years of primary education in 2018. In addition to this, the ACT 2126/2017 *de 15 de Junio*³³ made possible for schools to voluntarily apply to be able to implement the extension of the bilingual programme to infant education. As a result, this school extended the bilingual programme to the second cycle of infant education, allowing more foreign language time at this stage³⁴ and providing infant groups with the help of language assistants in the year 2019/2020. The main aim of the expansion of the bilingual programme to infants is to help the youngest students at school to be more prepared and ease the access to the bilingual project in primary.

In general terms, students and families with older children understand the challenges and commitments the bilingual project requires. Nonetheless, experience has taught me over the last twelve year that most parents seem to encounter many problems in helping their children with the foreign language homework and assignments. In addition, families usually feel overwhelmed with the amount of contents taught in English and find it difficult to figure out ways to help without knowing the language. As a consequence, different elements such as the class blog for content learning support (i.e., glossary of terms, videos and content songs) and Apps (i.e., Class Dojo³⁵) that connect teacher and parents are used as an additional help.

³³ *ORDEN 2126/2017 de 15 de Junio* regulates the *extension* of the bilingual programmes Spanish-English to the second cycle of infant education (3 to 5 years old) in the CAM bilingual schools. The requirements and applications forms, along with the complete law can be found at: https://www.bocm.es/boletin/CM_Orden_BOCM/2017/06/21/BOCM-20170621-16.PDF

³⁴ The *ORDEN 2126/2017 de 15 de Junio* provides at least 3 sessions of 45 minutes a week in the first year (3 years old), at least 4 sessions of 45 minutes a week in the second year (4 years old) and at least 5 sessions of 45 minutes a week in the third and last year. In addition to these 5 sessions in the last year of infant education, my school allows another 45 minutes a week for music and psychomotricity (Psico Motor Education) at this stage.

³⁵ Class Dojo is a communication app used in the classroom to share reports with parents about behaviour or achievements. In my class, it is also used to encourage certain skills such as being able to communicate in English. More information can be consulted at: <https://www.classdojo.com>

The whole school is immersed in an emotional education programme that has been awarded with the *Convive 2019*³⁶ prize in its first edition. This award recognises the best initiatives about peaceful coexistence and betterment of school climate. In the school, every year there are different actions taken with all members of the school community that encourage sharing our feelings within the class group, but also twinning older and younger groups of students. In the activities worked throughout the year and through all stages in the school, the main aim is having students to get to know each other whilst promoting emotional learning and the ability to empathise with others.

Regarding the participants, this research is aimed for the 2nd year of Primary Education. There are around 25 students in both pilot and main study. Their ages range between seven and eight years old. The specific groups of students participating in this study were depicted at the beginning of the analysis in the pilot study (see section 5.1) and the main study (see section 6.1). At this level, the standing legislation (LOMCE Act provides four hours a week for English, and one hour and half a week for Natural and Social Sciences (in English for bilingual schools) respectively. Students at this school have also Physical Education in English twice a week. Added to that, the school counts with the help of five language assistants of different nationalities (4 English native speakers mostly from the United States and the United Kingdom, and 1 French native speaker, usually from France) that are assigned to groups of students for an approximate time of 6-7 hours a week.

In the academic year in which the main study was carried out (i.e., 2019/2020), there were several textbooks and materials that were used in 2nd grade. With the purpose of designing materials for this study, key Natural and Social Sciences content words were extracted from the textbooks used in class: “Learning Lab Natural Science Madrid 2 Primary” and “Learning Lab Social Science Madrid 2 Primary” (*Ed. Santillana*). I teach English, Natural and Social Sciences to both 2nd grade groups. In addition to this, I teach Arts and Crafts to both groups for a period of forty-five minutes a week. I take advantage of this area to reinforce and support CLIL subjects with Science projects and other artistic projects that deal with the culture of the foreign language. I am ‘the class teacher’ for 2B group. Hence, 2B will be the experimental group; whereas 2A will be the control group.

³⁶ The following link describes the rules of the competition as well as the prize winners: <http://www.premioconvive.com/iedicionpremioconvive/>

Overall, the students' level of English is still limited although most of them have experienced great improvements and maintain good progress towards an A2 level of the MCERL. As previously stated in the literature review (see section 1.4.5.), Walqui (2006) claims that English language teachers need to provide with high level of support to help students to become aware of their progress through and build language confidence scaffolding techniques. As a consequence, during the realisation of tasks many verbal, content and learning process scaffolding techniques were implemented to help me respond effectively to the challenging tasks in CLIL contexts (Massler, Ioannou-Georgiou and Steiert, 2010). As an example, verbal scaffolding techniques such as building redundancy, modelling language use, supportive error correction, prompting and allowing response time to students among others were often used.

With regard to content scaffolding techniques, referring to previous knowledge, sharing content and language goals with students, the use of visualisation techniques, providing key vocabulary and key content concepts and giving feedback are among the most common techniques that were implemented. Finally and regarding learning process scaffolding techniques, the use of graphic organisers, reading strategies, carrying surveys, use of mnemonics, etc., were often used so that language and content learning can be accessible for all students.

In the same vein, Mehisto (2012) argues that the extra challenge of learning through a second language can be eluded by “support mechanisms to help students reach well beyond what they could do for their own” (p. 17). For instance, most of my students are able to answer orally delivering full complete sentences when prompting is given whilst some of them are starting to do it in an autonomous way. Moreover, they are able to read a fragment based on content subject topics and complete it with the help of a word bank. Nevertheless, it is quite common for them to misspell words even with the word in the word bank, which has driven me into this research.

In the next section, I will present the procedures and methods used in this investigation. They are inspired by the pilot study that concluded that there were grounds for believing that the NLP spelling strategy was effective not only towards the improvement of spelling accuracy in CLIL subjects, but also increasing motivation towards written work. The design of the NLP spelling strategies and spelling tests, materials design such as questionnaires or evaluation rubrics will be presented in the following lines. Furthermore, the instruments for data collection and analysis will be presented.

4.2. Design of the intervention

4.2.1. Design of the NLP spelling strategies

As stated above, this study aims to analyse the impact the use of NLP spelling strategies may have on the learning of lexical fields within content-subject or CLIL areas. This is done by means of reinforcing spelling awareness and performance in order to help students become better spellers in a motivational and meaningful learning environment. In order to do so, this study pursues the following objectives. The first goal is to find possible strategies to foster foreign language learning by identifying the key elements of the NLP spelling strategy. The second goal is to put into practice the NLP spelling strategies in 2nd grade while checking and analysing the effectiveness of this action. In addition to this, other factors that may hinder or assist learning such as self-concept and beliefs are examined. The third goal is to provide students with resources to bridge the gap between the early and the late years of bilingual education with regard to written skills. Moreover, the intention is to examine whether these particular spelling strategies improve my students' motivation and positive attitudes towards spelling. Finally, the last goal is to determine whether visual learners and visual strategies are best for learning how to spell accurately when compared to students who practiced spelling copying words from a list.

As it has been reviewed throughout the literature, there are various examples to put into practice the NLP spelling strategy³⁷ (see sections 3.3 and 3.4). Strategies are usually sequenced in a set of steps and instructions to be followed. Furthermore, all strategies reviewed share similar features like the need to compel students to use the visual memory as for instance, making them to spell backwards at some point of the training.

³⁷ The way the authors present the NLP spelling strategy is very similar. In chapter 3, most of the practical examples and applications of the strategy in class were depicted (Grinder and Bandler, 1991; Revell and Norman, 1997; Dilts, 1997; and Gabarró 2010, 2012) (see sections 3.3 and 3.4).

After having inspected all the different NLP strategies, I adapted two strategies taken from Grinder (1991: 118)³⁸ (see appendix 1 and 2). The first example of the NLP visualisation of spelling strategy he suggests is a set of 5 simple steps. In the first step, the teacher writes a specific word on the board and gives the command: “as you see the letters, say them aloud forward” (p. 181). The teacher is asked to use an auditory cue (i.e., snap of fingers) to show the speed of saying each letter. In order to spell out the word ‘marbles’, for instance, students had to say each letter out loud while snapping their fingers (i.e., M-A-R-B-L-E-S). The second step was to get students to look away from the word they were reading on the board, asking them to see the word in their minds in order to repeat the same process (i.e., say each letter out loud while snapping your fingers). The third step is having students spell the word they read on the board backwards with the help of an auditory cue to have them look away repeating the same process in the fourth step.

Once students have spelled backwards without reading the word but in their minds, in the final step they are asked to say and spell the word forward one last time. Added to these steps, I wanted to introduce the writing and spelling of the words worked in class. Thus, I included one more step that required students to write the spelling of the word they were seeing in their minds in their whiteboards or a piece of paper.

The second strategy applied consists of six different steps. In the first step, the teacher has to write a word on the board and underline each letter. In the second step, the teacher says the following command: “look at the board and memorise each letter and their relationship to the letter on each side”. The third step continues and the teacher adds: “Indicate that you have it memorised by nodding your head”. Then, all the letters are erased leaving dashes in a fourth step (i.e., _ _ _ _ _ _). In the fifth step, the teacher points to the different dashes to have students say each letter out loud. Once the teacher thinks that the letters in each dash are memorised, the order and selection of dashes becomes random, subsequently, students can memorise the letters on each word. Added to these steps, I included one last instruction to have students write down the spelling of the word worked each time.

³⁸ Grinder (1991: 118) suggests four different NLP spelling strategies. All of them are designed to meet NLP visualisation of spelling strategies requirements. All four strategies were implemented in the pilot study with similar results. Observation from the piloting phase gave the insight that the first strategy was the preferred option to students. Regarding the second strategy chosen, as gathered from comments from students and language assistants, it proved to be more challenging than any of the other three. This was because students needed to memorise the letters in each word and their relation to the letter on its side (i.e., BIRD: BI-IR-RD). Since there were no significant comments or notes taken on the other two strategies, they were omitted for the new study. Hence, the most preferred strategy and the most challenging one were chosen for the new study.

Even though these two were the NLP spelling strategies formally taught to students, other aids such as writing in the air, changing words and letters into different colours or sizes and taking mental pictures (Revell and Norman, 1997). These are elements of other NLP spelling strategies from other authors were also put into practice when dealing with more complicated words. In addition, the “feeling of contentment” that was depicted in Gabarró (2012) was included (see section 3.4). This was done to have students check internally whether a particular spelling felt right or wrong before they were going to write it.

4.3. Developing the work plan and implementing the selected NLP spelling strategies

In order to carry out the work plan, several aspects were taken into consideration. Firstly, it was important to establish the length of the study that will be detailed in the next lines. Second, I arranged a new seating plan in which I paired more abled with less abled students so there would always be one student that could help another when struggling during tasks. Third, I prepared the materials and questionnaires to be completed during the study and, finally, I chose the content words from both subjects for every week, Natural and Social Sciences, so students would learn the key content words related to the content at hand.

As mentioned above, this study was carried out in two phases. In the pilot study, the intervention was a total of five weeks. Two weeks for vocabulary of Natural Sciences, another two weeks for vocabulary of Social Sciences and a consolidation week. In order to have a clear idea about the implementation of the pilot study, the table below illustrates some of the main characteristics in terms of timing, instruments for data collection and tasks among others that were undertaken in the pilot study.

Table 4: Work plan for the pilot study

When	Who	What	Data collected	CLIL Subject
Week 1	Experimental group	Students copy each word of the list at least once a day for a whole week and take a spelling dictation test at the end of the week	Number of correct/incorrect spelling – Quantitative analysis	Natural Sciences
	Control group			
Week 2	Experimental group	NLP spelling strategy practice in class and NLP spelling test (included non-verbal cues). The test included 12 words: 9 words practised during this week and 3 from the first week	Number of correct/incorrect spelling – Quantitative analysis *Compared to week 1 Comments made by students in the spelling training worksheet: 3 most difficult/easy words and beliefs test. – Qualitative analysis	Natural Sciences
	Control group	Copy the list of words once a day to take a spelling test at the end of the week. The test included 12 words: 9 words practised during this week and 3 from the first week	Number of correct/incorrect spelling – Quantitative *Compared to week 1 Comments made by students in the spelling training worksheet: 3 most difficult/easy words and beliefs test – Qualitative analysis	
Week 3	Follows the same structure as Week 1 with Social Sciences vocabulary			
Week 4	Follows the same structure as Week 2 with Social Sciences vocabulary			
Week 5	Experimental group	Consolidation task: learning to spell backwards. Students choose a NLP spelling strategy used in class to play a guessing game in pairs. Aim: Check if learning is still there. Are students able to spell content words backwards using visual strategies?	Number of students who are able to spell 3 to 10 words backwards – Quantitative. Comments made by language assistants, student teacher and support teacher. Qualitative data from: direct observation, note taking, and students' feedback – Qualitative analysis	Natural and Social Sciences
	Control group	Feedback about practising spelling by copying words	Qualitative data from students' comments and opinions	

During the first and the third week, students from both, control and experimental group were given a list of words related to the topic at hand (i.e., matter and materials). Students were asked to copy each word in class and were requested to write each word at least once a day for a whole week in order to take a spelling test at the end of the week. During weeks two and four, the control group continued to do the same although new words were practised. Meanwhile, each week I presented two NLP spelling strategies to the experimental group for them to learn their new Natural Sciences content words (see appendix 1 and 2). At the end of the week, they also had a spelling test although this included non-verbal clues practised during the learning of the strategies stage. Lastly, the fifth week's function was to get back to a NLP spelling strategy used when teaching and to get students in the experimental group to play games that would help me know whether they were able to spell words backwards. A summary of the main findings together with the complex analysis of results of the pilot study is provided in the next chapter (see chapter 5).

With regard to the length of the new study, I decided to do an intervention that covered the vocabulary of four units of Natural and Social Sciences respectively. This way I could analyse the learning of key content words for more than half of the topics introduced within a school year in both subjects (six units at the end of the year). An estimation of the time required for this task is about 6 months starting at the beginning of the school year until the end of the second term (approximately 14 weeks in the first term and another 13 weeks in the second term).

The first three weeks of September served as an introduction of the year, getting to know each other and the initial evaluations. During this time, students were also presented with classroom dynamics (i.e., sharing goals and expectations, delivering feedback, use of rubrics, etc.) (see sections 4.4.5 and 4.4.6). The last week of September students took the first questionnaire. This was the Learning Channel Preference Checklist (adapted from O'Brien, 1990) that was aimed to find out the learning channel of preference or main representational system of students within both groups (see section 4.4.2).

With the objective to reduce possible anxiety, students were informed that during the year I wanted to study how much they could improve their spelling of key content vocabulary. I asked for their collaboration whilst trying to release any additional pressure, as I made clear that it was for my own study. I informed that results had nothing to do with their marks as it was designed for scientific research. I agree with Ryan and Deci

(2000b) who suggest that getting to know about your teacher and his/her interests translates into positive attitudes towards what the teacher validates as important to learn. Thus, by telling students that this study was important to me, and the reasons behind them (i.e., become a Doctor in Philosophy, teach other future teachers at University, among others), I hoped for students to connect to the activity regardless the amount of new materials they were dealing with (i.e., questionnaires, rubrics, handouts, tests, etc.).

In October, in coincidence with formal content teaching and before implementing any strategy to practice spelling, a dictation of 12 key content words was conducted at the beginning of each Natural and Social Sciences unit. This was done in the attempt to gather data about the words that proved to be more complicated to students in both groups. However, the test was presented as a game so students would not feel any additional pressure. Data obtained from this pre-test would give an accurate and quantifiable perspective about the words that tend to be more complicated to students. With this in mind, words with the poorest scores in each group were trained by means of NLP spelling strategies in the experimental group and by copying words in the control group.

The rest of the study, two NLP spelling strategies³⁹ were taught and practised in class to students in the experimental group comparing results in tests with the control group that had practiced their spelling by copying words from a list. In addition, students' beliefs about learning spelling were addressed using a "beliefs questionnaire" (see section 4.4.3). This was done at the end of the unit after two weeks of practice of the specific key content words from the unit of Natural or Social Sciences we were dealing with in that particular week. Beliefs about the use and efficacy of the NLP spelling strategies implemented in the experimental group and beliefs about the use and efficacy of copying words in the control group were assessed one day or two before the spelling test. As a consequence, quantifiable results from the spelling tests were compared to students' answers in the beliefs questionnaire to find out whether their beliefs about the efficacy of a specific strategy to learn spelling (NLP or copying words) bring about any change in spelling performance. Furthermore, students were asked to work spelling individually as well as in pairs and learned new strategies for self and peer evaluation, that were analysed as quantitative and qualitative data (see section 4.4.5).

³⁹ The first strategy was implemented in the first term for Natural and Social Sciences units 1 and 2. The second strategy was implemented at the beginning of the second term for Natural and Social Sciences units 3 and 4.

During this time, I alternated the way I used to teach spelling, by means of copying words from a list in the control group on the one hand, and the new strategies based on NLP focused on the visualisation of spelling in the experimental group on the other (see section 4.2.1). Students in both groups were given a list of key content words at the beginning of the Natural/Social Sciences unit.

In order to offer similar possibilities for both groups (timewise), students in the control group were granted with 10 minutes at the beginning of the first session together to copy a list of 5 words as many times as they could (at least each times each word) every day of the week. Each day of practice students were given a short number of words (i.e., 5 words) related to the content at hand to copy individually. Regularly, they completed the self-assessment rubric so I could gather students' opinions about the process. No more instruction was given to students in the control group. After students had independently practiced the Natural and Social Science key content words for a complete unit (approximately 2 weeks), they took a spelling test of twelve words at the end of both units. Thus, students' in the control group were again evaluated once they were familiarised with words, had learn the contents and had practiced them in context. Before the spelling test, students in the control group were also asked about their beliefs, in their case about learning how to spell by copying words (see section 4.4.3).

With regard to students in the experimental group, in October (Week 1), they were introduced to the first strategy in a complete session of 60 minutes and reinforced with a second complete session of practice in the English class. Once they had mastered this strategy after two units of Natural and Social Sciences respectively during the first term, students were introduced to the second strategy using another complete session repeating the same process for the last two units of Natural and Social Sciences during the second term. Added to that, twice a week, students had a 30 minute practice of the words with the NLP spelling strategy in pairs with their teacher's and language assistant's support. The same way, I assessed students on spelling performance by means of dictation of words. Students in both groups were regularly asked to complete a self or peer assessment rubric to gather students' opinions about for instance, their level of engagement in the activities (i.e., I can stay focused and on task) (see section 4.4.5)

To sum up, here I presented the implementation of the study in terms of timing, instruments for data collection, type of research, tasks and materials needed. In order to shed light into the organisation of tasks and questionnaires that are provided at different times of research, the following table was organised as follows:

Table 5: Work plan and implementation of the NLP spelling strategies in the new study

September 2019 (Week 3)	Control	Experimental
Instrument for data collection and type of research	V-A-K Learning preferences checklist – Quantitative research analysis	
Task	Provide students with the V-A-K questionnaire (L1). Read in class, take home to be completed with the help of parents.	
Materials	V-A-K Learning Preferences Checklist (O’Briene, 1990)	

NATURAL SCIENCES UNIT 1		
October 2019 (Week 1)	Control	Experimental
Instrument for data collection and type of research	Dictation of 12 key content words as a pre-test at the beginning of week 1 - Quantitative Self Assessment Rubric at the end of week 1 – Qualitative research analysis	
Task	<p>Dictation of 12 key content words taken from the unit</p> <p>Give the list of key words for the whole unit</p> <p>Give a list of 5 words to copy at the beginning of each day of the week as spelling practice</p> <p>Allow 10 minutes every day to copy a list of five content words</p>	<p>Dictation of 12 key content words taken from the unit</p> <p>Give the list of key words for the whole unit</p> <p>Use a complete session to explain the mechanics of the NLP spelling strategy 1 and classroom dynamics. Use a second session if necessary</p> <p>Practice 5-8 words from the list of content words for Natural/Social Sciences unit (30’ twice a week) using the NLP spelling strategy 1</p>
	Explain and provide students with the self-assessment rubric at the beginning of the process so they know what is expected from them at the end of the week	
Materials	Spelling pre-test Self Assessment Rubric Words are displayed on the board. Students copy in a paper or mini whiteboards	Spelling pre-test Self Assessment Rubric NLP Spelling strategy handout Students transcribe words in a paper or mini whiteboards

NATURAL SCIENCES UNIT 1		
October 2019 (Week 2)	Control	Experimental
Instrument for data collection and type of research	Self and Peer Assessment Rubric at the end of Week 2 – Qualitative research analysis Beliefs Questionnaire before the spelling test– Quantitative/Qualitative research analysis Final spelling tests – Quantitative research analysis	
Task	Allow 10 minutes every day to copy a list of five content words. An additional 10 minutes were granted to copy words cooperatively in pairs	Allow 30 minutes twice a week for the practice of the NLP spelling 1 strategy in pairs (5-8 words each day of practice).
	Explain and provide students with the peer or self-assessment rubric at the beginning of the session so they know what is expected of them Present students with the beliefs questionnaires one day or two before the spelling test at the end of the week Spelling dictation	
Materials	Self Assessment Rubric Spelling Practise handout Words are displayed on the board. Students copy in a paper or mini whiteboards	Peer Assessment Rubric NLP Spelling strategy handout Students transcribe words in a paper or mini whiteboards
	Beliefs Questionnaire adapted for each group Spelling test -12 key content words from Natural Sciences U.1	

All four units from Natural and Social Sciences respectively followed the same structure. In the first week students in both groups were given the list of key content vocabulary for the Natural Sciences or Social Sciences unit they were learning that particular week (i.e., unit 2). Twelve words were assessed at the beginning of the unit to find out the most challenging words for students. In addition, the results on this pre-test would give an accurate idea of students' initial ability to perform spellings from CLIL subjects without any training.

The control group was asked to copy a list of 5 words each day (extracted from the key content vocabulary for the unit) for ten minutes at the beginning of the first session together. The experimental group learned the first NLP spelling strategy in a complete session that was reinforced in a second session (they learned the second NLP spelling strategy after two Natural Sciences and two Social Sciences unit). Once they were able to independently practice their spellings with NLP strategies, students trained in pairs for thirty minutes twice during the second (or third) week. At the end of this first week, students completed the self-evaluation rubric. At the end of the second week, students completed the peer and self-evaluation rubric. Students in the control group also complete

the peer assessment rubric at the end of the last session of practice. Later, students in both groups were asked to complete the beliefs test one day or two before the next spelling test. All in all, repeating the same process until the end of the fourth Natural and Social Sciences unit respectively from October to March.

Given that I use the dictation of words to assess spelling performance and several questionnaires during the implementation of this study, a more complete description about this method to assess spelling and other materials that were implemented need to be explained. Therefore, having presented the work plan and implementation of the study in this section, a more detailed account of the set of materials and questionnaires that were used during the implementation of the study will be presented in the following lines.

4.4. Materials design

Because these materials were tested in a pilot study, some modifications have been done adding, altering or eliminating questionnaires that are the result of the findings and limitations discovered when analysing data (see chapter 5). Learnings achieved in the pilot study translated into improved and richer research questions that led to seek for materials already validated such as the use of questionnaires in previous studies on similar subjects⁴⁰. Consequently, the following is a detailed presentation of the tests, questionnaires and procedures used in this investigation.

4.4.1. Spelling tests

For the purpose of this study, I followed a traditional dictation of words test with both groups to assess students' ability to produce accurate spellings. The reasons are varied. On the one hand, it is the practice that I had always used before this study. On the other, dictation focuses on the production of spelling (Croft, 1982; Allal, 1997). This doctoral dissertation tries to verify whether spelling production in the initial stages of CLIL, where the foreign language becomes the vehicle to learn concepts, can be improved with NLP spelling strategies when compared to copying words for spelling practice. In

⁴⁰ The beliefs questionnaire in the main study is the result of reviewing papers that sought to find students attitudes towards specific spelling strategies. In Mesmeh (2012) an attitudinal questionnaire towards a specific spelling strategy such as Cover-Copy-Compare was validated; Nahari and Alfadha (2016) adapt this questionnaire to strategies such as the visualisation of spelling. As a result, I adapt this last questionnaire to the use of NLP spelling strategies and other spelling practices such as copying words to retain spelling (see section 4.4.3).

order to be able to analyse the production of accurate spelling in key content words specifically related to CLIL subjects, dictation tests were implemented.

In the attempt to find relevant literature that validated spelling dictation as a useful tool to assess the production of spelling, several studies were reviewed (Croft, 1982; Allal, 1997; Folse 2006; Bigozzi et al., 2016). My goal here was to identify whether dictation was recognised as a useful method to assess the production of spelling in previous research. In line with this, Croft's (1982) study about the validity of spelling tests to check accuracy in writing explores three different types of tests. Among the types of spelling tests she notes, dictation is a test that focuses on the production of the correct spelling. In a similar vein, Bigozzi et al.'s (2016) study about spelling in a transparent orthography with Italian first graders compares the performance in tasks such as spontaneous spelling of words and the dictation of words. Both studies refer to dictation as standardised or traditional spelling tests and compare their results to other methods used to assess spelling.

In the belief that traditional dictation tests are as efficient as partial dictation or multiple choice dictation tests for vocabulary retention (Folse, 2006) and that all studies reviewed validated the use of words dictation as a tool to assess spelling production or performance in research studies, I decided to use dictation to assess students' performance in spelling tests.

One particular idea that I found particularly interesting about Bigozzi et. al.'s (2016) study is that they point out that when a word is dictated the possibilities for internally constructing the words are limited since the input students receive is someone else's output. Therefore, when words are dictated spellers need to make use of their auditory processing. This process needs to be converted into the motor act of writing to be able to perform in the dictation task. Consequently, the dictation of words makes students use the auditory channel to retrieve information, may make students use the visual channel when trying to assemble the word in their minds and make students use the kinaesthetic channel to write down the orthographic codes of the language. Ergo, dictation is not so far from addressing students three main representational systems that NLP takes into account (see section 2.2.3.)

However, dictation as a way to assess spelling and accuracy of key content words in CLIL subjects' presents some limitations. The first limitation dictation entails is the time of response on the external output (Bigozzi et. al., 2016). Second, the spelling a spoken word to dictation is a complex process as it entails retrieving, assembling, and choosing an orthographic representation to be able to produce an accurate output using

the orthographic codes of a specific language (Bigozzi et al., 2016). Bearing in mind that Italian, like Spanish, are considered transparent languages, it can be concluded that, in not so transparent languages like English, being able to produce a written output from a dictation test is not an easy task. Furthermore, English is a foreign language to all students in this study. Hence, it is fair to think that learning to accurately produce key content vocabulary in spelling tests is an additional challenge for them.

In spite of this, in my experience as a teacher and in line with the reviewed studies in the lines above, dictation is one of the most well-known tools for assessing spelling among teachers. As a consequence, students in both groups were dictated a complete word three times and asked to write it on a blank line with, to their knowledge, the most accurate spelling.

4.4.2. Questionnaire 1: Learning Channel Preference Checklist (LCPC)

Assuming that a NLP learning style questionnaire has to take into account the V-A-K model in order to meet Neuro-linguistic criteria and that knowledge about the way teacher and students perceive information (from the eye, ear, body) is fundamental in understanding the representational system of preference of the person who teaches or learn (Cazau, 2004), the first questionnaire dealt with the learning of the learning channel or representational system of preference of students (V-A-K). It was administered during the first term.

The questionnaire provided in this study was translated and adapted from O'Brien's (1990) Learning Channel Preference Checklist (LCPC, henceforth) (see appendix 3). The questionnaire was a set of 36 statements related to the three main representational channels (V-A-K). The statements were presented in three different columns with 12 statements for each group: visual learners (i.e., I can remember best when I write it), auditory learners (i.e., I prefer listening to a story than reading a book) and kinaesthetic learners (i.e., I don't like reading or listening to instructions, I simply prefer start doing things).

In this questionnaire, the statements were copied in three tables (one for each V-A-K group) in which students had to check how frequently they felt that way whilst learning following a Likert-type scale⁴¹ with scores from 1 (i.e., almost never) to 5 (i.e.,

⁴¹ The scores students could choose from were: almost always (5), frequently (4), sometimes (3), in rare occasions (2) and almost never (1).

almost always). Based on the students' answers, parents and teachers could gather the results displayed in three columns, one for each learning style. The sum of the score of each column gave a numerical result, which was normalised using a simple percentage metric. These results indicated the percentage of V-A-K learning style in a particular student.

Consequently, this questionnaire tried to shed light into how learning styles affect students' strategies and ability to produce accurate spelling⁴². This is done in the form of V-A-K related statements that depict the way students learn best (i.e., I take notes during the class but I never re read them afterwards). As a result, six students (three in the experimental group and another three in the control group) were specifically studied. Students were selected in terms of the scores achieved in the questionnaire. Thus, the strongest student for each V-A-K category was individually studied. The scores these particular students achieved in the spelling tests were compared to each student's learning style in the attempt to identify connections between learning styles and spelling performance. Furthermore, results in this test with the rest of the groups were taken into account when specific students showed difficulty in spelling or other tasks throughout the year to find possible ways to connect best to them.

The main aim of conducting this questionnaire was to enhance my knowledge on how students learn best in both groups whilst providing students with opportunities for self-assessment and self-awareness as learners. In line with this, I agree with Chen, Lee and Lin (2010) in the influence learning styles have when learners decide to use a certain learning strategy. Although their study focuses on listening comprehension, to my knowledge there is no evidence that this could not work with other language skills such as spelling. The literature reviewed in previous chapters indicated that learning styles are a key factor in spelling (see section 1.4.5), learning theory (see section 2.1.3), NLP (see sections 2.2.3 and 2.2.4) and CLIL (see chapter 3 section 3.2). These ideas made me look for a validated questionnaire (i.e., LCPC, adapted from O'Brien 1990) that helped with understanding how students learn best. This indeed may open a new window to a more receptive teacher who tries to adjust tasks and activities to all type of learners. In addition to this, making students reflect about their learning styles through the use of a questionnaire becomes a tool that promotes students to be aware of their own learning.

⁴² The results derived from this questionnaire helped answering some of the research questions presented in this study: Do learning styles affect the ability to produce accurate spellings? Is there a relationship between learning styles and spelling performance?

4.4.3. Questionnaire 2: Assessing students' beliefs about learning spelling in CLIL contexts through NLP spelling strategies and copying words

The second questionnaire was to be done once students had practised the spelling of key content words related to one unit of Natural and Social Sciences by means of NLP spelling strategies in the experimental group or copying words in the control group and before the spelling test (for an approximate time of 2 weeks). The aim was to get students to reflect about their attitudes and beliefs towards the use of the NLP spelling strategy or copying words. This questionnaire was pioneered by Mesmeh (2012) who used it a social validity questionnaire to assess students' attitudes towards Cover-Copy-Compare spelling strategy. This same questionnaire was adapted in Nahari and Alfadda's (2016) as an "attitudinal questionnaire" (p.15) in their study on the effect of using visualisation strategies to improve students' spelling skills that was mentioned in the literature review (see section 3.4).

Consequently, in the attempt to offer valid opportunities to analyse results, I adapted the same questionnaire these two previous studies had already validated (see appendix 4). The original questionnaire consisted in 15 statements in which students had to rate using a 5-point Likert scale (i.e., strongly agree, agree, uncertain, disagree and strongly disagree). Since most statements begin with expressions such as "I think..." or "I believe..." this questionnaire offered an opportunity to assess students' attitudes and beliefs about learning how to spell by means of copying words in the control group or NLP spelling strategies in the experimental group.

Nevertheless, the original questionnaire was designed to gather teachers' opinions about traditional methods to teach spelling (i.e. copy or drilling practice) and other methods (Cover-Copy-Compare in Mesmeh, 2012 and visualisation strategies in Nahari and Alfadda, 2016). As a result, some statements such as "I think that it is better for all English teachers to use visualisation strategies in teaching spelling" or "I think that learning spelling using visualisation strategies is better than the traditional method" were omitted. In addition, I decided not to include statements that could present contradiction. For instance, the statement "I feel that visualisation strategies are boring and complicated" was omitted. Students were already asked to what extent they believed that NLP spelling strategies (or copying words) were simple and easy to use or fun and interesting. Thus, this made unnecessary to present opposite statements. Furthermore, some other statements were omitted simply because they sought different research questions (i.e. I believe that

visualisation strategies give me the opportunity to correct my spelling immediately / help me a lot in retaining the correct spelling)

Given that students' age range in this study is 7-8 years old, the original questionnaire was simplified in terms of language and cut the number of statements to almost half (7). In addition, the questionnaire was presented in two languages, English and Spanish. For the Likert scale options to rate the answers, a simpler language was used. For instance, strongly agree or strongly disagree were simplified to "Of course!" or "Of course not!" and uncertain was simplified to "I don't know". In addition, the answers were reinforced with visuals and images displayed on the board so that students could understand how to answer this questionnaire⁴³(see appendix 5).

The statements selected from the original questionnaire were those that dealt with assessing students' opinions towards the practice of spelling in class in terms of self-concept (i.e., I think this strategy helps me to be a good speller in English), confidence (i.e., I think that using this strategy to learn the spelling of words in English gives me more confidence with the language/ I think this strategy helps me to learn the spelling of difficult words in English), motivation and levels of engagement (i.e., I believe that this strategy motivates me to learn the spelling of words in English / I believe that using this strategy is fun and interesting / I believe that this strategy helps me to concentrate well when learning the spelling of words in English). In addition, students are asked about the use of the strategy in itself (i.e., I think this strategy is simple and easy to use).

The answers to these questions provided relevant information about students' beliefs towards motivation, spelling in general, and the use of this NLP spelling strategy in particular. Furthermore, the answers were compared to the scores in the spelling test and the relation to their achievements in a bid to triangulate data. As a matter of fact, all questionnaires and tests were analysed in terms of learner's outcomes according to the results obtained in the spelling tests.

Additionally, complementary beliefs questionnaires about spelling and learning by copying by means of drilling practice were carried out with the control group. In essence, all statements were similar to the ones depicted above but substituting all reference to the word "strategy" to "copying words". In order to have a better idea of the difference in both questionnaires, the questions were illustrated as follows:

⁴³ For every possible answer in this questionnaire a picture with the teacher's Bitmoji alterego (created with a mobile App with the same name) representing actions or emotions related to each of the answers were displayed (see appendix 5)

Table 6: Example of beliefs questionnaire in the experimental and control group

Experimental group	<p>4. I think this strategy helps me to be a good speller in English. <i>Pienso que esta estrategia me ayuda a escribir bien en inglés.</i></p>				
Control group	<p>4. I think that copying words helps me to be a good speller in English. <i>Pienso que copiar palabras me ayuda a escribir bien en inglés</i></p>				
	OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!

For instance, the experimental group was asked whether they thought that “this strategy” helped them to become a good speller whereas the control group had to answer a similar statement but this time thanks but “copying words”. The goal of both questionnaires was to find out the levels of motivation towards the practice of spelling using both methods, NLP in the experimental group and a more traditional approach (i.e., copying words) in the control group. Finally, it seems important to point out that students were reminded that there were no correct or incorrect answers and that they could be honest about their opinions and beliefs.

As it was commented in chapter 3 (see section 3.1), beliefs act as filters that affect language learning in both, positive and negative manner. Especially for young learners, beliefs are important because they form what students believe capable of doing. This questionnaire provided students with opportunities to express opinions and beliefs that could be analysed for this research purposes.

4.4.4. Questionnaire 3: Write a letter to your teacher

Regularly, students were required to write a letter describing how they felt while learning in the English class⁴⁴ (see appendix 6). They were asked to reflect on their learning and experiences lived in class writing their comments, doubts or questions allowed to do it in Spanish. In line with Ryan and Deci (2000b), this letter was particularly useful in providing students with opportunities to feel connected and close to the teacher and significant others. Furthermore, in the belief that empathy, interest in students’

⁴⁴ In my school, students alternate rooms. They move to and from the Spanish class, where Spanish language and mathematics are taught, to the English class, where English, Natural and Social Sciences and Arts and crafts are taught in English. Expressions such as “the English class” or “the English teacher” or simply “the teacher” are usually used by students to refer to events that happen in the CLIL classroom.

development and respect are valuable elements when promoting feelings of comfort, positive attitudes and willingness to learn (Sánchez et al., 2013), this “letter to the teacher” offered an open private space for students to share with their teacher how they really felt about all the processes and learning carried out in class. Added to that, by having the opportunity of writing a letter to the teacher in their first language, students might feel that their comments, needs and concerns are taken into account. Thus, the letter becomes an anxiety free space of comfort in which they can express themselves with regard to all class and school experiences.

Even though the use of L1 in the foreign language classroom is a topic that creates great controversy, and research concerning the use of L1 in CLIL programmes is almost unavailable (Lasagabaster, 2013), I decided to make use of the L1 in specific questionnaires of this study (i.e., V-A-K and beliefs questionnaires, letter to your teacher, and comments made from students in L1 were accepted). The reason behind this choice is that, in line with Lasagabaster (2013, indebted to Auerbach, 1993), L1 can be a valuable tool to provide students with a sense of security while supporting the experiences lived, enabling students to express themselves. This sense of security is what makes students become ready to take risks in the foreign language. Furthermore, on the condition that the most of the learning should be done through the L2, L1 can contribute to scaffold language and content in CLIL contexts (Lasagabaster, 2013 indebted to Auerbach 1993).

In my study, English was the vehicle for learning the language and contents in CLIL subjects. Furthermore, all instructions given to develop this particular study were also in English which is a foreign language to all participants (i.e., implementing spelling strategies or questionnaires). Nevertheless, L1 was accepted to make students feel heard and supported while learning. Even more so, in questionnaires that dealt with feelings, emotions and beliefs that gave important insight of students’ frame of mind and attitudes towards learning spelling in a CLIL environment. Pursuant to this, instruction in CLIL programmes is more effective when students are able to give responses in their L1, L2 or even non-verbal responses as long as the use of L1 is gradually reduced as students gain competence in the L2 (Navés, 2002). Allowing students to confidently express themselves about the feelings that may arise during the learning process should contribute as a tool that empowers motivation and willingness to learn the foreign language.

For the purpose of analysis, this letter was delivered in several occasions, at the beginning (i.e., September, January), in the middle (i.e., mid November, mid February) and the end of the first and second term (i.e., mid December, end of March). In addition to this, students had a post box in class where they could post anonymous concerns, beliefs, opinion or suggestions for the classroom routines and activities in general and anytime (although they were regularly reminded to do so). Periodically, particular questions or comments relevant to the activities carried out in class were mentioned in a session so teacher and students could make observations about the possible problems or concerns that may arise. More important particular issues of students were dealt individually when needed. Nonetheless, only relevant data for the sake of this study was analysed in the form of qualitative results (i.e., aspects related to spelling or learning English as a foreign language, students' beliefs about learning).

4.4.5. Questionnaire 4: Peer and self-evaluation rubric

In order to study the effects of peer and self-evaluation with regard to spelling practice and performance, I presented the rubric for peer and self- assessment that I would give in response of the tasks done in class (see appendix 7 in the main study and appendix 13 in the pilot study⁴⁵). However, it is important to take into account that there are certain drawbacks in involving young students in the use of rubrics, such as their lack of self-managing skills (Jiménez Ménguez, 2017). In order to overcome this drawback, the procedures and expectations students had to achieve autonomously were explicitly explained at the beginning of each session in the form of “We Are Learning To” (WALT, henceforth) and “What I’m Looking For” (WILF, henceforth) posters that will be fully explained in the next section (see section 4.4.6) (see appendix 8). Once students understood goals and expectations, as well as the instructions for each task, they were also provided with the rubric so they knew how they were going to be evaluated.

In the belief that rubrics are an additional aid for students to focus and improve performance in tasks and that, even with young students, they provide with reliable source of data that helps the teacher evaluate students (Jiménez Ménguez, 2017), rubrics were presented whilst sharing expectations and assessment guidelines to students.

⁴⁵ The adaptations and changes that were done are presented in appendix 13 that was the questionnaire developed in the pilot study. In appendix 7, the questionnaire of the main study is presented.

Both, self and peer assessment, rubrics included 5 “can do” statements. The first one was a little different than the others as it elicited the exact number of words students were able to correctly spell from the list given. Here, the goal was to be able to quantify the number of words they felt they knew how to spell after using a particular strategy: copying words in the control group and by means of NLP spelling strategies in the experimental group. Students gave themselves 4 points if they could spell five or more words, 3 if they could spell three-four words, 2 if they could spell one-two words and 1 if they could not spell a word from the list practicing with the strategy provided (i.e., NLP spelling strategy or copying words).

The other 4 “can do” statements in the rubric were related to their expertise using the strategy (i.e., I can use the visual spelling strategy to spell words from Natural and Social Sciences in English). The answers to this particular statement made the teacher, and researcher, adapt the planning to student needs, for instance, allowing more time to model the strategy for students when necessary. The third statement dealt with the level of engagement in the task (i.e., I can stay focused and on task while collaborating with my partner). Thanks to this, I could assess students’ performance during the tasks and relationships within the assigned pairs to be able to help those who were having trouble working together. Furthermore, the fourth statement goal was to assess the use of English during the tasks (i.e., I can speak English while on task). It was important that students knew that efforts to use English were taken into account thanks, for instance, to the language scaffolding provided (i.e., language support for interactions on the board), in order to maintain English as the vehicle of learning.

Finally, the last statement aimed to check the temperature in the levels of self-confidence with the language (i.e., I can write in English words that I could not write before). Scores in this rubric for these 4 last statements ranged from 1 to 4 points in which students needed to mark whether they could perform very well, well, quite well or badly. At the end of the questionnaire, there was a space for students to give feedback using a simple “two stars and a wish” technique that will be explained in the following section (see section 4.4.6).

4.4.6. Classroom dynamics: Sharing expectations with students and delivering feedback

As I commented in the previous section the procedures and expectations students had to achieve autonomously were explicitly explained at the beginning of each session in the form of “We Are Learning To” (WALT, henceforth) and “What I’m Looking For” (WILF, henceforth) posters (see appendix 8). In line with this, I agree with Lee (2007) who suggests that sharing clear goals and expectations is a way to involve students in learning as active participants of the process. Assuming that the teacher’s approach to elements such as pacing instructions appropriately and clearly, accurately describing tasks and communicating the learning expectations with students for their success are some characteristics that make CLIL programmes successful (Navés, 2002), it seemed of paramount importance to include these elements to my practice.

Even though sharing goals and expectations with students was not an element of data analysis, literature indicates that they are one of the keys that make CLIL learning successful. For that reason, goals (WALT) and expectations (WILF) were shared at the beginning of the teaching of each strategy. This was done with the hope of students getting involved in a meaningful way by explaining and negotiating what was expected from them (see appendix 8). Furthermore, students were asked to train and practise the NLP spelling strategies in collaboration with a partner. Thus, sharing goals and expectations whilst providing students with the rubrics described in a previous section was another useful way to scaffold learning in the CLIL classroom (see section 4.4.1).

Another aspect to have in consideration is the way teachers deliver feedback. For the purpose of this study, feedback about students’ performance in the activities was given at the end of each session of spelling practice. As it was commented in the literature review, beliefs shape the way we understand reality (O’Connor and Seymour, 1990) (see chapter 2 section 2.2.2). This is because when we believe that something is true, we act accordingly (Puchta, 2010) (see chapter 3 section 3.1). In line with this, Revell and Norman (1997) suggested that the language teaching learning process is promoted when 13⁴⁶ presuppositions are added to the teacher’s beliefs system. Among these

⁴⁶ 1. Mind and body are interconnected: they are parts of the same system, and each affects the other. 2. The map is not the territory: we all have different maps of the world. 3. There is no failure, only feedback... and a renewed opportunity for success. 4. The map becomes the territory: what you believe to be true either is true or becomes true. 5. Knowing what you want helps you get it. 6. The resources we need are within us. 7. Communication is non-verbal as well as verbal. 8. The non-conscious mind is benevolent. 9. Communication is non-conscious as well as conscious. 10. All behaviour has a positive intention. 11. The meaning of my communication is the response I get. 12. Modelling excellent behaviour leads to excellence.

presuppositions, the NLP belief “there is no failure, only feedback... and a renewed opportunity for success” (Ibid:, 15) was added to the way messages were delivered (see section 3.1). As a consequence, feedback focused on the specific goals and expectations shared with students at the beginning of the session and students understood that they were mostly praised by their efforts and progress in the activities towards specific outcomes (i.e. I can use the visual spelling strategy to spell words from Natural and Social Sciences in English).

In order to achieve this, a simple “2 stars and a wish” technique was implemented at the end of each session of spelling practice. The teacher granted the whole group with two stars, or two pieces of positive feedback. The wish noted an aspect that could be improved in the future. This was done in the belief that students can transfer skills and knowledge from elements of success (the two stars) while considering areas they might want to develop differently in the future (the wish) (Black and Jones, 2006). In brief, providing feedback that encouraged further learning (Baker, 2005) (See section 3.1). Furthermore, students had a space at the end of the self and peer assessment questionnaire so that they could also grant the teacher with two stars and a wish during the realisation of tasks and activities carried out in class.

4.5. Data collection

The main aim when collecting data was to quantify the number of correct spellings and the possible changes the contribution of NLP spelling strategies could make by comparing results from the control and experimental group. In addition, several questionnaires complemented this study as a way to investigate the role learning styles and beliefs have in the development of spelling skills. As a consequence, the data to be collected is based on these sources:

13. In any system, the element with the greater flexibility will have the most influence on that system.

- Learning Channel Preferences Checklist (adapted from O'Brien, 1990).
- Spelling pre-tests and tests.
- Students' beliefs questionnaires about learning spelling in CLIL contexts through NLP spelling strategies in the experimental group or copying words in the control group.
- Peer and Self-assessment rubrics.
- Write a letter to your teacher.

In addition to these tests and questionnaires, student's performance during the realization of tasks throughout the lessons was systematically observed and included in the teacher's observation rubric (see appendix 9). The rubric was divided into several categories: understands the strategy, listens to and helps each other, stays on task and the ability to spell words from memory being some of the most relevant aspects. Language assistants and I gathered results in this rubric by checking whether students exceeded, met or performed below expectations. Furthermore, there were other observations that could be included as comments such as the need of additional support, strong/weak students and willingness towards the activity.

The reasons that encouraged me to involve language assistants in the "in progress" evaluation of the tasks implemented for the development of this study (i.e., students practicing the NLP spelling strategy in pairs) are varied. First, I needed to have an extra pair of eyes that could help me detect possible achievements or difficulties during the process with such a large group. For that to happen, I had to specifically train language assistants in the NLP spelling strategies used and explain the objectives and characteristics of my research to them. Second, I wanted to make sure students could perform to their best of possibilities with regards to spelling. I wanted to monitor and keep record of students' learnings so I could adjust or modify my own way to teaching and model the NLP strategies. Finally, I had already involved language assistants and a student teacher in the pilot study.

However, at some points of the pilot study, I felt that my position as a researcher was in conflict with my position as a teacher. I felt the urge to support my students to accomplish the goals (i.e., learning to spell words from content subjects using the NLP spelling strategy). This felt more important than simply observing and doing the analysis. I was another important part of research. The way I taught and modelled the strategies, the way I delivered feedback or shared goals was also a part of the research. In this sense,

I agree with Wong (1995) in understanding that being a researcher was my choice, whereas being a teacher was my responsibility. With this, I do not mean that my role as a researcher was given less importance; on the contrary, involving other people in observation was an attempt to keep objectivity under control.

In spite of the initial conflict that may involve being a teacher and a researcher, alike Wong (1995), I believe that my role as a teacher added valuable insight to the data collected whilst creating academically useful experiences (i.e., learning how to spell). For that reason, I continued to gather as many opinions as possible, in the new study, from the people involved in class activities. Their comments helped me reflect about both, my role as a teacher and a researcher. Furthermore, their insights offered opportunities to check that my observations matched their opinion about events during research. Thus, comparing other observers' feedback to my personal notes and recordings about students' learnings was done in a bid to add a sense of validity to my study.

All these observations and opinions were gathered in a research journal along with my personal notes about the process. Notes in this journal were taken on a regular basis during the practice of the spelling strategies (i.e., copying words or NLP spelling strategies). Comments made by students, observations from the language assistants and feedback among others, were an opportunity to reflect and help me look for patterns or new ideas for further research. In line with this, I agree with Farrel (2007 indebted to Ho and Richards, 1993) that this journal gave me the opportunity to describe and reflect about my own teaching practice and I would add, my role as a researcher.

4.6. Data analysis

In a bid to choose the approach that suited best the nature of my research questions (Ma, 2015), I decided to use a mixed quantitative and qualitative approach to the analysis of results due to several factors. First, mixed approaches are a method of preference for the field of applied linguistics due to linguistic, social, cultural and political aspects that are involved in language learning around the world (Ivankova and Greer, 2015). Second, I agree with Jick's (1979) view of quantitative and qualitative methods as complementary rather than competitors since mixing them, allows the triangulation of data providing a sense of validity. Third, given that research questions in this study are complex (i.e., Do positive beliefs about spelling work bring about any change in the spelling performance?), focusing on numbers and statistics did not feel enough.

Thus, it was important not only to be able to quantify to what extent a particular classroom intervention was effective (i.e., teaching NLP spelling strategies to improve spelling in CLIL subjects), but also it was necessary to assess what aspects might have been triggering or hindering motivation towards learning. As a consequence, added to the percentage of students that performed well in spelling tests as a way to identify whether NLP spelling strategies are more effective than simply copying words to learn the spelling of key content words in CLIL subjects, the results were compared, for instance, to students' answers related to beliefs about the different strategies used to teach spelling to find possible connections.

In order to gain multiple angles and perspectives to add a sense of validity and a comprehensive understanding of the study, triangulation was done in several ways. In this sense, my study mainly covered three of the four types of triangulation identified in qualitative research: method, theory and data source triangulation (Carter et. al., 2014 indebted to Denzin, 1978 and Patton, 1999). Method triangulation was covered by combining multiple methods of data collection such as quantitative data from spelling tests and qualitative data from questionnaires about students' beliefs. Theory triangulation was covered finding correspondences between theory and practice in the literature review and the conclusions after the study. Finally, data triangulation was covered comparing quantitative and qualitative results in two different groups of students. To these triangulation methods, Carter et. al. (2014) add the need to involve more than one researcher to the study. However, due to the nature of this study I was the only researcher. In spite of this, feedback from the language assistants and student teachers was added to the research journal for reflection.

All data gathered in this study was analysed in accordance with the spelling test results and the students' responses to the questionnaires provided. On the one hand, spelling tests provided quantitative data and thus, objective information about the number of correct spellings on each test. On the other hand, the answers to the questionnaires granted the researcher with valuable, although subjective, qualitative data based on students' opinions, comments, attitudes and preferences. This subjectivity has been overcome by triangulating results integrating quantity findings with important qualitative data that could help in having a deeper and comprehensive understanding of events.

In the attempt to triangulate results and zooming on the objectives of this doctoral dissertation, as mentioned above, the scores in spelling tests were compared to the answers in the beliefs questionnaires about the use and efficacy of the NLP spelling strategies (or copying words) to learn spelling of key content words in CLIL subjects. This way, I could analyse whether students' attitudes and beliefs about the learning of spelling through NLP spelling strategies (or by copying words) matched their actual performance and results in spelling tests. In addition to this, comments made by students in the self and peer-assessment rubric were studied to evaluate the practice of the strategies in class in order to be able to adapt the planning to the specific participants' context of research. Given that a positive learning environment is paramount to maintain levels of motivation (see section 2.1) being aware of how students see themselves as learners, their behaviour towards a specific task (i.e., practising the NLP spelling strategies in pairs) and results in spelling tests, can give precious data to analyse the impact of the NLP spelling strategy when dealing with key content vocabulary in CLIL subjects.

Furthermore, the LCPC (adapted from O'Brien, 1990) added valuable data to analyse results in terms of V-A-K learning preferences within the experimental and control group in the new study. The data taken from this test was specifically studied in six students: three in the experimental group and another three in the control group. Students within these groups who had the highest score in visual, auditory or kinaesthetic learning preference were selected. Therefore, a student with a strong visual learning preference, a student with a strong auditory learning preference and a student with a strong kinaesthetic learning preference from each group was individually studied. The results were compared to these particular students' scores in spelling tests in an effort to find possible correlations between learning styles and spelling performance with and without NLP strategies.

Furthermore, other questionnaires such as self and peer assessment and the opportunity to write a letter to the teacher to express their feelings about learning were taken into consideration only when the comments made were relevant to the beliefs, motivation and attitudes towards spelling work.

4.7. Summary

The objective of the theoretical part has been to delve into the potential benefits that teaching and learning spelling has in the development of reading and writing skills in foreign language contexts. Motivation, self-confidence and reduced anxiety, the three variables of Krashen's affective filter hypothesis, have been demonstrated to have paramount importance for learning and for foreign language learning in CLIL contexts in particular. It has also been noted that these and other emotional factors such as beliefs and identity as learners, can enhance or jeopardize learning. It has also been shown that NLP strategies can enhance the learning environment by promoting personal relationships and taking into account different learning styles. Furthermore, NLP spelling strategies have been designed to work through procedures in an environment where sharing expectations and assessing students' beliefs about learning is a must. Added to this, delivering specific feedback that promotes further learning was outlined.

In the empirical study, the NLP spelling strategy has been chosen, from all NLP models and strategies, to shed some light into specific strategies that can be applied to the teaching of a specific sub-skill of written language skills such as spelling. As commented in a previous section of this dissertation (see section 2.2.5), critics such as Farahani (2018) note the lack of sources that address NLP strategies to teach skills and sub-skills of the language. Conclusive studies, especially in the efficacy of the NLP spelling strategies are scarce and not updated (see section 3.3.1). As a consequence, it proves paramount to carry out further studies into how to tackle the NLP spelling strategy in CLIL contexts in Spain in a way that fosters motivation, in the attempt to make foreign language learning enjoyable. All in all, in an environment where students feel as an accountable part of the group and opportunities of successful mastering of the language are promoted.

This study was carried out in two phases. In 2016, a pilot study of five weeks was conducted in order to assess the feasibility and worthiness to expand the investigation. Later, in the academic year 2019/2020 a larger scale study was implemented inspired by the analysis and findings in the pilot study and a deeper theoretical knowledge. This study covered the time needed for the teaching of four units of Natural and Social Sciences respectively (approximately 6 months). That is to say, most of the topics taught within a year. As a result, this chapter has described the methods, materials and procedures used for and this new investigation. In the introduction, a review of the research questions that

led the particular methodological applications to this study was included. Having discussed the benefits of pilot studies as a valuable practice to gain experience as a researcher and to assess feasibility in a shorter scale study, the context of the school in both studies, pilot and new, was described.

The section that followed aimed to illustrate the design of the intervention with regard to the NLP spelling strategies. Moving on, the work plan and implementation of both, pilot and new studies, were explained in detail in terms of timing, instruments for data collection, type of research, tasks and materials needed as well as the different questionnaires provided at different times of research. One of the major changes among studies concerned the length of the study. The new study was expanded from the initial 5 weeks of research obtaining data from one unit of Natural and Social Sciences respectively, to acquiring data from four units of Natural and Social Sciences in almost six months of research. Following to this, the materials, questionnaires, rubrics and classroom dynamics and procedures in the new and main study were fully described and presented. These materials were the outcome of deeper reflection of the analysis of data and limitations in the pilot study (see chapter 5).

Instruments of data collection were discussed in the following section to finish describing the reasons that encouraged me to use a mixed quantitative and qualitative approach to the analysis of data. Concerning the analysis of data, this section has described procedures such as the triangulation of data in the attempt to validate results from different angles and perspectives. However, before proceeding to examine the results of the study of this doctoral dissertation, it is necessary to explore and discuss the results of the pilot study. These results and conclusions helped the author reconsider and improve the questions, objectives and methodology of the new research. Furthermore, the implications of the pilot study were taken into consideration for the betterment of the new and main study.

CHAPTER 5. A PILOT CASE STUDY

The present chapter discusses the main findings of the pilot study carried out in 2016 for a period of five weeks in a specific group of 2nd grade students at *CEIP Ntra. Sra de Valvanera (S.S.R.R-Madrid)*. The existence of two different groups of participants in the pilot and main study were the focus to point out differences among studies. Promising results in the pilot study implied that there were grounds for believing that the NLP spelling strategy was not only effective towards the improvement of spelling accuracy in CLIL subjects, but also it increased motivation towards written skills. The results and implications outlined in this chapter were the guide to design the methodology for the main study (see chapter 4) and the new analysis of results presented in the next chapter (see chapter 6).

5.1. Participants

As it was established in a previous section (see section 4.1.1), the study was carried out at *CEIP Ntra. Sra de Valvanera* with 2 groups of 25 students respectively in 2nd grade of primary education. Group 2A was the control group and Group 2B was the experimental group. These were groups of great diversity. In 2B there was a Chinese student. Spanish was his L2 and English his L3. In English and content and language lessons he sometimes showed inferences with his L1. However, he followed the subjects taught in the foreign language with non-or little support with fair results. Additionally, six students (4 in 2B and 3 in 2A) were very good at English. They were very talkative and participative. One of them was especially good at speaking. However, it was difficult to get this student engaged in writing. Furthermore, two students had been diagnosed with Attention Deficit Hyperactive Disorder (ADHD) and required methodological adaptations to follow the class (see appendix 10).

In addition to this, five students - distributed in both groups - were very disruptive and tended to agitate the class (i.e., talking out of turn and teasing others). In 2B class specifically, there were a lot of little issues that usually turned out to bigger problems when not addressed on time. It was a group with many different personalities and there was even a possible bullying case we were investigating at the time. In relation to this, the class teacher for 2A group and myself were granting a session per week to run a project about emotions until the end of the year. Each of us worked with both groups alternatively,

working on one emotion per week where ‘empathy’ was be the umbrella term for every session.

In spite of this, it can be said that they seemed motivated and willing, in general terms, to participate in learning. Most students in my class liked to participate since they got rewarded for their efforts (see appendix 12). Thus, there were always lots of questions and small debates in our lessons. My students liked to express how they felt and shared opinions. They were also quite imaginative and creative. However, most students were not always aware of the benefits of cooperative and collaborative work yet. As a consequence, they tended to have small conflicts when they were required to work in pairs or groups. 2B is a group of great impulsiveness so that they tended to react with certain verbal and physical aggressiveness among them.

5.2. Results and analysis of the pilot study: Natural Sciences

5.2.1. Spelling tests

The timeline of this study was spread over five weeks, two for Natural Sciences vocabulary, another two weeks for Social Science vocabulary and a consolidation week. Therefore, the results will be analysed comparing the first and second week for each subject. In order to organise data collected from the spelling tests, the scores were divided into five categories as shown on the table below:

Table 7: Spelling test scores categorization in the pilot study

Chart	Poor	Borderline	Good	Successful	Exceeding
Score	1 to 4,9	5 to 5,9	6 to 7,5	7,6 to 8,9	9 to 10
Data	Poor performers	Risk Zone	Average	Top performers	

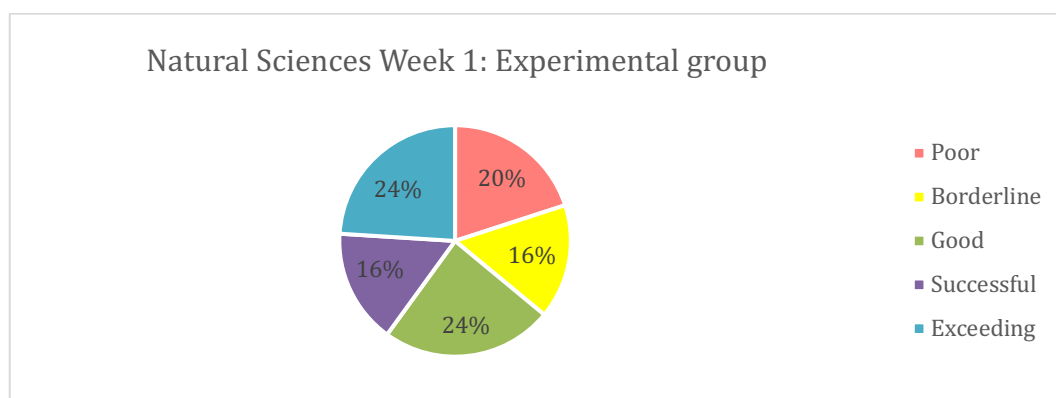
Results of each spelling test will be analysed taking the above table as reference, I will analyse the groups’ results on each spelling test. During the first week, students in both groups were asked to copy a list of fifteen content words every day for spelling practice. Students’ performance made by students was assessed through a spelling dictation test of twelve words done after a week of practice. Successful or passed spelling tests were considered to be those from borderline to exceeding scores. However,

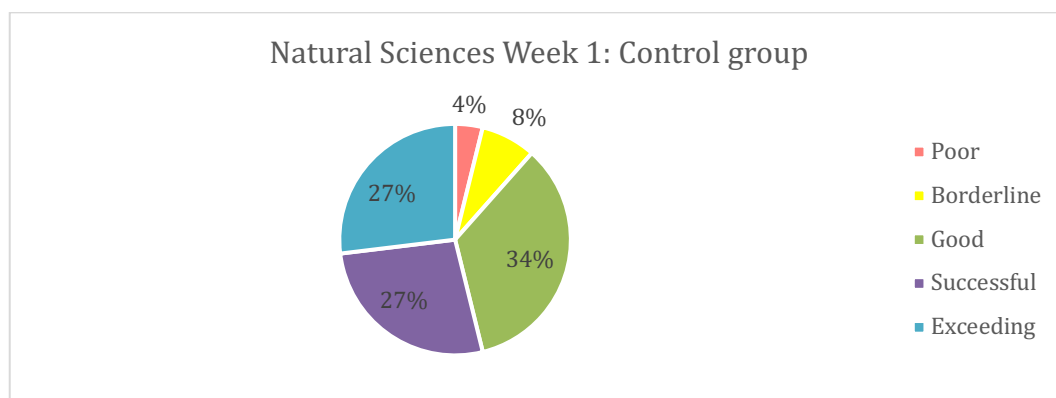
borderline scores were also analysed as part of the risk zone due to the low scores in tests (less than six correct words). During the second week, students in the experimental group were introduced and taught two visual strategies to learn their spellings based on NLP, whilst the control group remained to do the same throughout the whole study.

With regard to the spelling test during the second week, the experimental group's test was based on the NLP spelling strategies learnt, including non-verbal clues, where twelve words were assessed with nine new ones and three from the previous week. Additionally, it is worth highlighting that the words chosen on each test were selected in concordance with the contents being taught, having the second week a more challenging vocabulary. Words such as "heterogeneous, homogeneous or waterproof" introduced the second week were, in essence, more complicated than words like "cotton, glass or plastic" from the first week. Furthermore, it is important to take into account the context of the experimental group as there were not only students with special educational needs, but also some students that were quite disruptive. The control group, on the other hand, was quieter and a more homogeneous group. As far I am concerned, the gist of the matter was to get the experimental group, a more challenging group indeed, to reinforce their spelling and try alternative learning strategies that might improve their performance.

During the first week, students in both groups had practised spelling by copying words through drilling practice. At the end of the week, a dictation of twelve words was conducted in order to be able to make a categorization of scores in spelling tests. The chart below shows the breakdown of spelling test scores after a week of practice copying key content words from Natural Sciences in both groups of participants. The following graph illustrates the results after one week of copying words for spelling practice in both groups:

Chart 1: Week 1 spelling test scores. Matter and Materials vocabulary.





Regarding the spelling tests taken at the end of the first week, students in both groups showed a good starting point where 96% of the control group and 80% of the experimental group passed the test. In the control group, 54% of spelling tests were in the top performers zone with 27% of students with successful and exceeding scores respectively. In the experimental group, 16% of tests with successful scores and 24% with exceeding scores, that make up 40% of tests within the top zone. With regard to spelling tests in the average zone with 34% of good performers in the control group and 24% of good performers in the experimental group, it can be observed that the control group showed a 10% more of students being able to spell accurately at least half of the words in the test. Therefore, this week was more successful in the control group in the average, successful and exceeding scores.

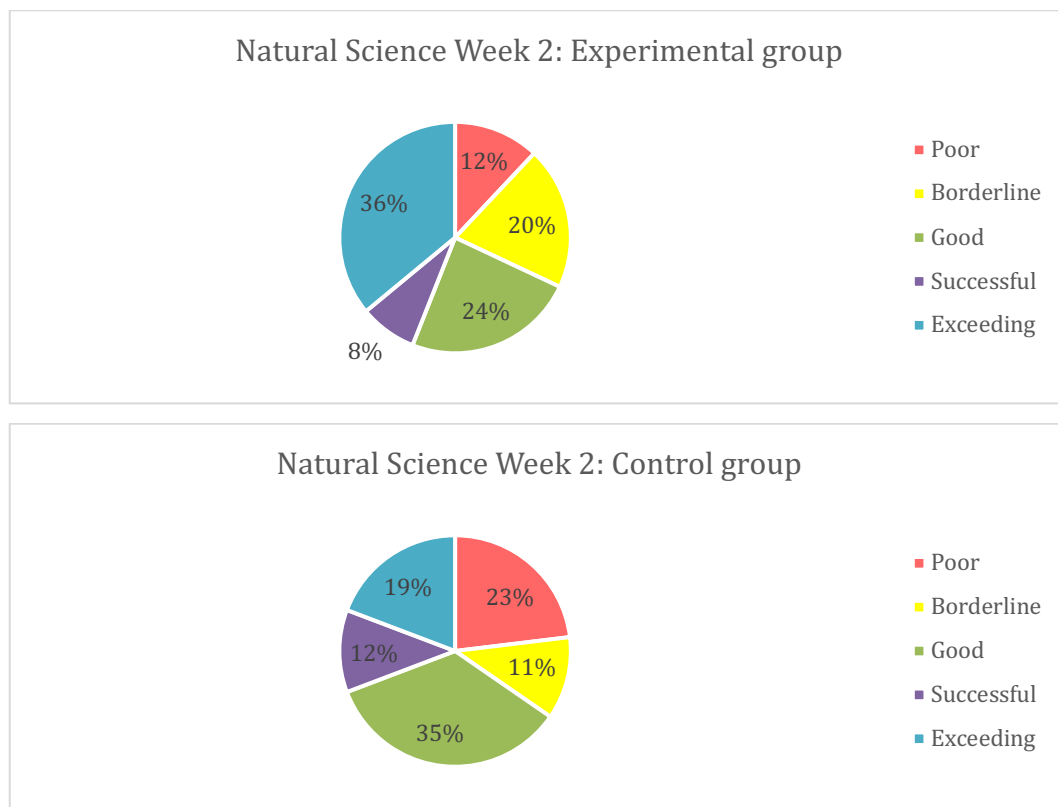
Concerning the risk zone, 8% of spelling tests in the control group and 16% of spelling tests in the experimental group showed that the experimental group doubled results in this zone. Poor spelling tests (i.e., less than four correct spellings) were more common in the experimental group with 20% than in the control group with 4% of failed tests. Thus, the control group seemed to start with stronger skills with regard to spelling after copying words for spelling practice in both groups during the first week. The control group surpassed the experimental group in top performers scores as well as the percentage of passed spelling tests. There were also fewer tests with scores within the risk and poor zones.

During the second week of the study, students in the control group remained to do the same (i.e., copying words from a list for spelling practice) whilst the control group was introduced to two NLP spelling strategies. Both groups took a spelling test with twelve content words from Natural Sciences at the end of the week. The spelling test

consisted in the dictation of words (in the control group) and the dictation of words using V-A-K recalls, such as snapping the fingers as many times as letters in a word to have students in the experimental group guess the number of letters in a word that was going to be dictated. This was done so students could mentally practice and visualise the words before writing them down.

The following chart presents the scores in spelling tests in both groups during the second week of study. At the end of this section, results were compared to the results of the previous week in which no NLP was offered. Both weeks assessed the spelling of content words from the Natural Sciences unit at the moment of the study (i.e., matter and materials).

Chart 2: Week 2 spelling test scores after NLP spelling strategies in the Experimental group and copying words in the Control group. Matter and Materials vocabulary.



After teaching two NLP spelling strategies to the experimental group, the percentage of students who passed the test in the experimental group was 88%. Nevertheless, the percentage of students who passed the test in the control group, was a total of 77% students. During the second week of study, the experimental group had therefore a greater percentage of students passing the spelling test.

With regard to the top performers in the experimental group, 44% of spelling tests were within this zone with 8% of tests with successful scores and 36% with exceeding scores. The control group, on the other hand, counted with 31% of spelling tests in the top performers zone this week with 12% of students with successful and 19% of exceeding scores. These results indicated that students the experimental group surpassed the control group in the number of top performers in spelling tests during the second week with an additional 13%. When looking this into detail, it could be observed how exceeding scores in the experimental group were also higher by a 17% in comparison with the control group. Although the control group had better results in the average zone (35% control Vs. 24% experimental), the percentage of higher scores in the experimental group was significant (44% of top performers).

As for the risk and poor zones, results in the experimental group showed that 20% of spelling tests had five to six correct words in spelling tests and thus, passing the test to the limit. Added to that, 12% of spelling tests in the experimental group had below four correct words. Thus, 32% of students in the experimental group had a very weak or failed spelling test during the second week of study.

In the control group, the results were almost reverse with 23% of students in the poor zone and 11% of students in the risk zone. Both groups, got almost the same percentage of students who had a weak or failed the spelling test (32% in the experimental group and 34% in the control group). However, the experimental group showed a greater percentage of students being able to complete or almost complete half of the words that were dictated (20%). When compared to the 23% of students failing the test in the control group, results in this fringe were positive in the experimental group.

5.2.2. Conclusions of the first two weeks of research in spelling tests: Natural Sciences

With regard to general results in spelling tests, the percentage of students who passed the test was larger in the control group in the first week of research. However, during the second week the control group significantly decreased their spelling scores from 96% to 77% of passed spelling tests. The control group started from a better position but dropped results in the second week of copying words for spelling practice. Meanwhile in the experimental group, a fair but smaller percentage of students passed the test in the first week (80%). In the second week, the results not only were steady with a slight increase (88%), but also they did not drastically drop as in the control group. In general terms, students in the experimental group continued to do well in spelling tests with an improvement in the second week, mostly exceeding scores.

Concerning top performers in the experimental group, the percentage of exceeding spelling tests increased from a 24% to a 36% in the experimental group during the second week of study. This means that a total of 12% of students moved to the exceeding performance in spellings of key content vocabulary from Natural Sciences. When analysing the same fringe with the control group in both weeks, it can be observed how that the 27% of successful and exceeding scores respectively obtained in the first week, decreased to a 12% of successful and 19% of exceeding scores in the second week. Therefore, the number of students with exceeding scores was greater in the experimental group during the second week. By comparison, in the control group exceeding performers decreased to successful, successful to good and good to borderline or poor with a considerable percentage of students in this range (23%). As a consequence, the control group's results in the spelling tests were decreasing from the first to the second week of study.

There were no significant changes in the average zone for both groups from one week to another. As for the risk zone, 4% of students in the experimental group were added to this range from the first to the second week that the first NLP spelling strategy was implemented with a total of 20%. However, the percentage of poor spellers in the experimental group (below 4 correct words) was diminished from the initial 20% in the first week to a 12% of students in the second week. Given that the percentage of poor performers has decreased an 8%, the overall performance in the experimental group can therefore be considered positive.

More specifically, general results in the risk and poor zone differed significantly in the control group from the first to the second week. In the first week, only 8% were among the weakest tests and 4% of tests were poor. During the second week, the risk zone grew up to an 11% and poor tests were significantly increased to a 23%. The experimental group almost cut to half the percentage of poor spelling tests in the second week.

In conclusion, results seem to indicate that spelling tests in the first week had better results in the control group. However, after the second week of copying key content words of Natural Sciences for spelling practice was not as successful as the first week in the control group. The experimental group's results in spelling tests were improved from the first to the second week. Furthermore, there were a greater number of tests with exceeding scores in the second week. Added to this, the number of poor spellers reduced almost to half from the first to the second week of study in the experimental group. As a consequence, these two weeks of study indicate that NLP spelling strategies helped students improve spelling performance. Spelling tests in the experimental group moved from good to successful and exceeding scores in one week of NLP spelling strategy practice. Nevertheless, the control group lost track from the first to the second week of the study as well as when compared to the experimental group in the second week.

5.2.3. Beliefs tests

In order to organise data collected from the beliefs test (i.e., 'How do you feel about your spelling this week?'), the scores were divided into three categories (i.e., brilliant, good, need to improve), where students had to choose one of these three categories to assess their performance during the week right before the spelling test. These three categories were related to the scores reached in the spelling tests so that students' beliefs could be compared to their actual performance in the spelling tests.

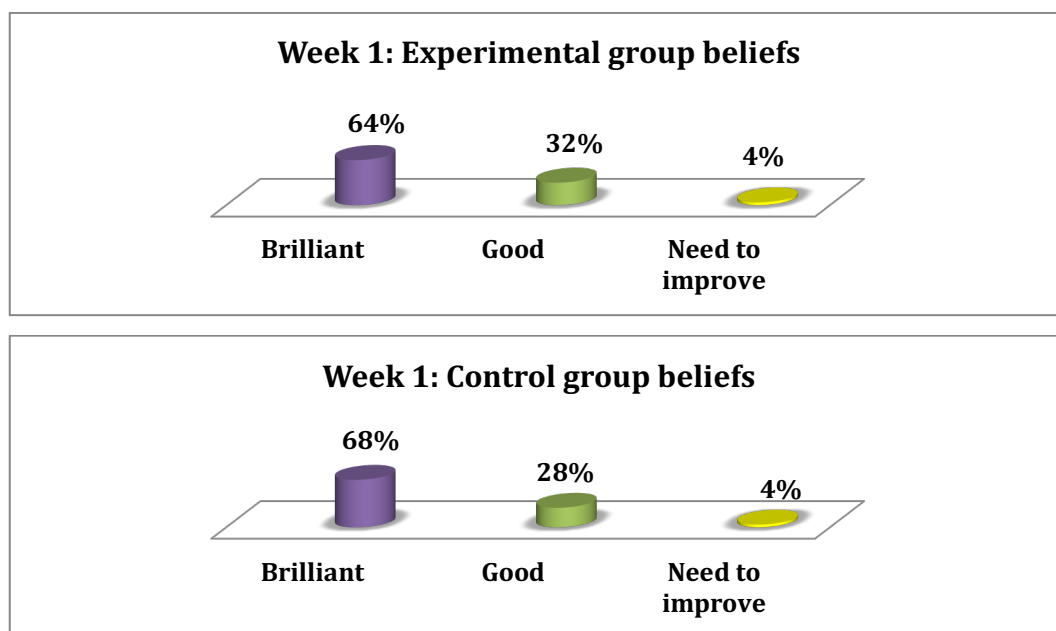
Table 8: How do you feel about your spelling this week? Beliefs Questionnaire scores

Chart	Poor	Borderline	Good	Successful	Exceeding
Score	1 to 4,9	5 to 5,9	6 to 7,5	7,6 to 8,9	9 to 10
Data	NEED TO IMPROVE	GOOD		BRILLIANT	

With the intention of analysing the results in the beliefs test, the graph below shows the level of confidence and beliefs of students in both groups during the first week of study with regard to their spelling practice. These results were compared to the answers in the same test during the second week of study. In addition to this, beliefs tests were compared to students' actual performance in spelling tests during both weeks of study in which key content words from Natural Sciences were assessed.

The following graph illustrates students' answers in the beliefs tests that they completed right before the spelling tests. The results were compared between both groups and at a later stage of this analysis, the results were compared to the actual performance in spelling tests.

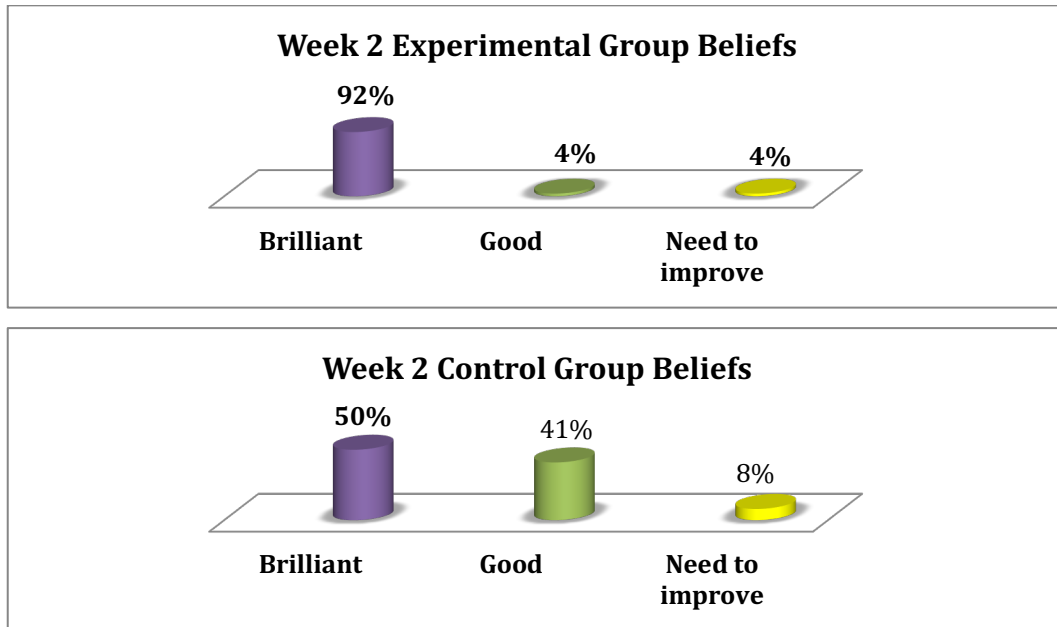
Graph 1: Week 1 Beliefs in both groups



As shown in the graph above (graph 1), there was a great number of students in both groups whose beliefs showed a great level of confidence with regard to their spelling skills during the first week. 64% of students in the experimental group and 68% of students in the control group thought that their spelling was 'brilliant'. An additional 32% of students in the experimental group and 28% of students in the control group believed to be doing 'good' with their spellings. Only 4% of students in each group did not feel confident with their spelling practice the first week. Thus, both groups had similar results in all categories.

In order to seek for possible findings comparing answers in the beliefs test and actual performance in spelling tests using NLP spelling strategies or copying words, the results from the second week were analysed as follow:

Graph 2: Week 2 Beliefs in both groups



During the second week of study, answers in the beliefs test showed a great difference between the experimental and control groups. The experimental group significantly increased the level of confidence reaching 92% of students in the brilliant fringe, whereas in the control group this number decreases to 50% in favour of the good performers section with 41%. In both groups, there were not significant changes on the need to improve.

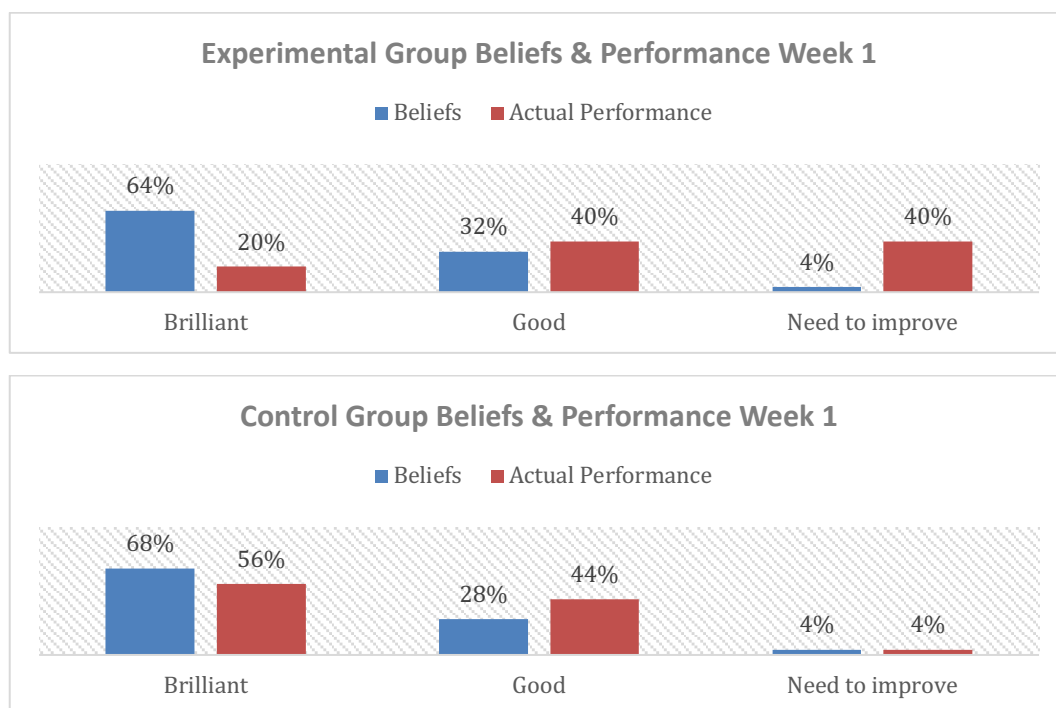
While most of the experimental group felt brilliant about their spelling the second week, only half of students in the control group believed their spelling was brilliant and less than half that their spelling was good. Nevertheless, most students in the control group still believed to feel positive about their spelling of key content words during this week.

In order to have a better idea of results, in the next section the answers in the beliefs tests were compared to the actual performance in spelling tests throughout the two weeks in which key content words from Natural Sciences were practiced.

5.2.4. Comparing results in spelling tests with students' beliefs about spelling: Natural Sciences

In a bid to compare results in the beliefs tests and the actual performance in spelling tests for both groups, the graph below shows the level of confidence and beliefs of students compared to the scores in spelling tests during the first week of study.

Graph 3: Week 1 Beliefs and Actual Performance in both groups



In the light of the initial results, the experimental and control group showed no great difference in terms of beliefs during the first week of study. Around 65% of students believed that their spelling was brilliant and around 30% of students believed that their spelling was good in both groups. An additional 4% of students in both groups believed that their spelling work needed to improve. However, the actual performance of the control group was better than the experimental group during this first week with a higher percentage of passed spelling tests (96%). In addition, the percentage of top performers was greater in the control group (54%) and average performers with good scores were around 42% during the first week of study (see section 5.2.1).

Consequently, there were more students believing their spelling was brilliant than actual top performers in tests. Average scores in the control group exceeded the number of students believing their spelling was good. Thus, students who considered themselves

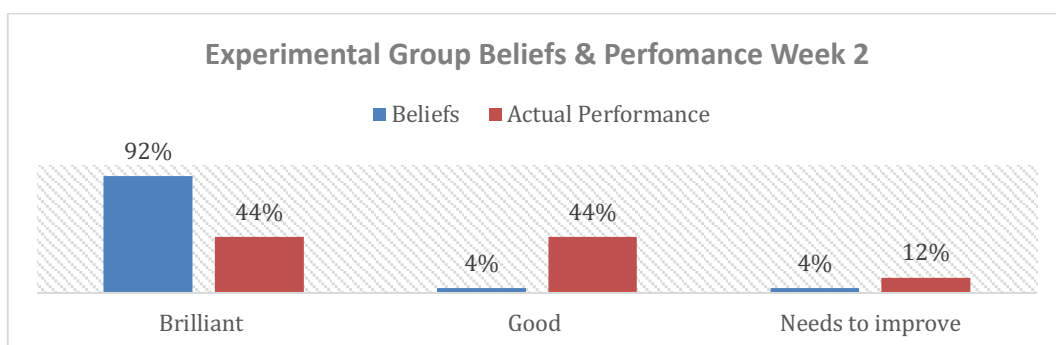
as brilliant spellers were performing as average spellers. However, the percentage of students with poor scores in tests exactly matched the students believing they needed to improve.

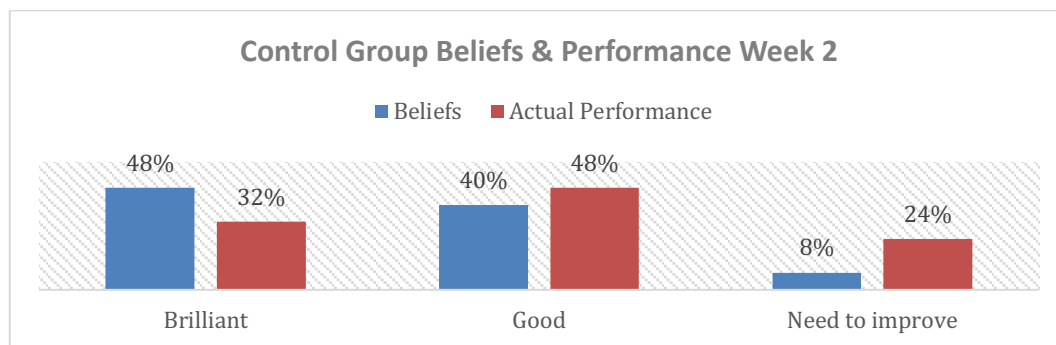
In the experimental group, with similar results in the beliefs tests, the actual performance was lower during the first week of study. 80% of students passed the test, half of them were top performers (40%) and another half were in the average zone. The percentage of students who answered brilliant or good in the beliefs test was close to 100% (96%). However, 20% spelling tests were failed whilst only 4% of students believed that they had to improve their spelling. There was a mismatch in the correlation between their beliefs and spelling performance in the experimental group during the first week of study similar to the one in the control group. Students who were achieving good and average scores were thinking that their spelling was brilliant after a week of practice by coping words. Similarly, some students who thought that their spelling was good obtained poor scores in spelling tests.

During the first week of study, students in both groups considered they were better spellers than they were actually able to perform in the spelling test. Furthermore, 20% of students in the experimental group failed the test. Yet, to a great extent, students in the experimental group believed their spelling work was brilliant or good this group. Given that the number of poor spelling tests in the control group matched the students who believed they needed to improve, it is fair to think that the control group were a bit more able to assess their work.

Turning now to the second week of the study, the following graphs show students' answers in the beliefs test compared to the actual performance in spelling tests.

Graph 4: Week 2 Beliefs and Actual Performance in both groups





The experimental group presented a serious improvement in terms of confidence after practising spelling with NLP strategies during the second week with 92% of students feeling brilliant about their spelling. Their actual performance in spelling tests was slightly improved during the second week of study. 88% of students passed the test, being 44% top and good performers respectively. While only 4% believed they needed to improve, 12% of students failed the test. Thus, it is fair to think that from all students who believed they would perform brilliantly in spelling tests, 44% had average scores and additional 4% did not pass the test. The same way, some students who thought they would do good failed to pass the test. Given that they slightly improve their scores in the top and average performers zone and that they reduced the poor scores, the results can be considered positive.

The control group suffered a decrease in confidence towards their spelling skills within the same week of study. Around 50% of students answered brilliant and 40% of students answered good in the beliefs test whilst only 8% believed they needed to improve. Their actual performance in spelling tests drastically decreased from the first to the second week. From the initial 96%, only 77% of students passed the test the second week of the study. Top performers were fewer (31%) and average performers percentage was similar to the ones obtained in the first week (46%). Furthermore, the percentage of spelling tests in the risk and poor zones expanded from a 12% to a 23%. Consequently, 20% of students in the control group were performing good while thinking their spelling was brilliant and another 15% of students were failing tests but believing they would do good in tests. In this case, the fewer percentage of tests within the top zone and the increase in tests with poor results make results less positive in the control group.

To sum up, the actual performance in the experimental group slightly improved during the second week of study and after practising their spelling using NLP spelling strategies. Their scores were also improved mostly in the exceeding zone with lesser

students in the poor zone. The same way, their beliefs about spelling were highly positive during this week. 88% of students passed the spelling test, 44% in the top performers zone and 44% in the average zone. 92% of students felt brilliant about spelling whilst 4% believed their spelling was good or needed to improve.

Hence, around 48% of students were not able to assess themselves according to their actual performance in the second week thinking they would do better than they actually did. Given that all scores in tests were increased and that the number of poor spelling tests decreased from the first to the second week of study, results are very positive. Consequently, the fact that they believed they were brilliant may have helped them achieve better results in spelling tests.

On the other hand, there was a significant decrease in performance within the control group that continued to copy words for spelling practice during the second week of study. Concerning the answers in the beliefs test in the control group, half the group answered brilliant and 40% answered good in the test. Top performers in this group were around 30% and average performers were a bit more with 46%. Therefore, around 36% of students in the control group were not able to assess themselves according to their actual performance in tests. In this case, the performance in spelling tests significantly decreased in the top performers zone and slightly maintained results in the average zone. Furthermore, the number of poor spelling tests dramatically increased from a 4% in the first week to a 23% in the second week. As a consequence, even though the percentage of students who felt brilliant decreased, a lot of students who answered good were not performing in tests according to their beliefs yet.

In conclusion, comparing both weeks' results in spelling and beliefs tests, during the first week of study, students in the control group were a bit more able to assess themselves according to their actual performance in spelling tests. In contrast, the experimental group's results in spelling tests did not match their answers in beliefs tests having a more positive vision of themselves.

In the second week of the study, the control group still maintained to feel brilliant or good towards their spelling practice, but they were not performing in tests according to their beliefs. In contrast, the experimental group showed that not only the number of students who passed the test increased, but also, that all scores increased whilst the number of poor spelling tests decreased. In addition, beliefs in this group were highly positive for most students.

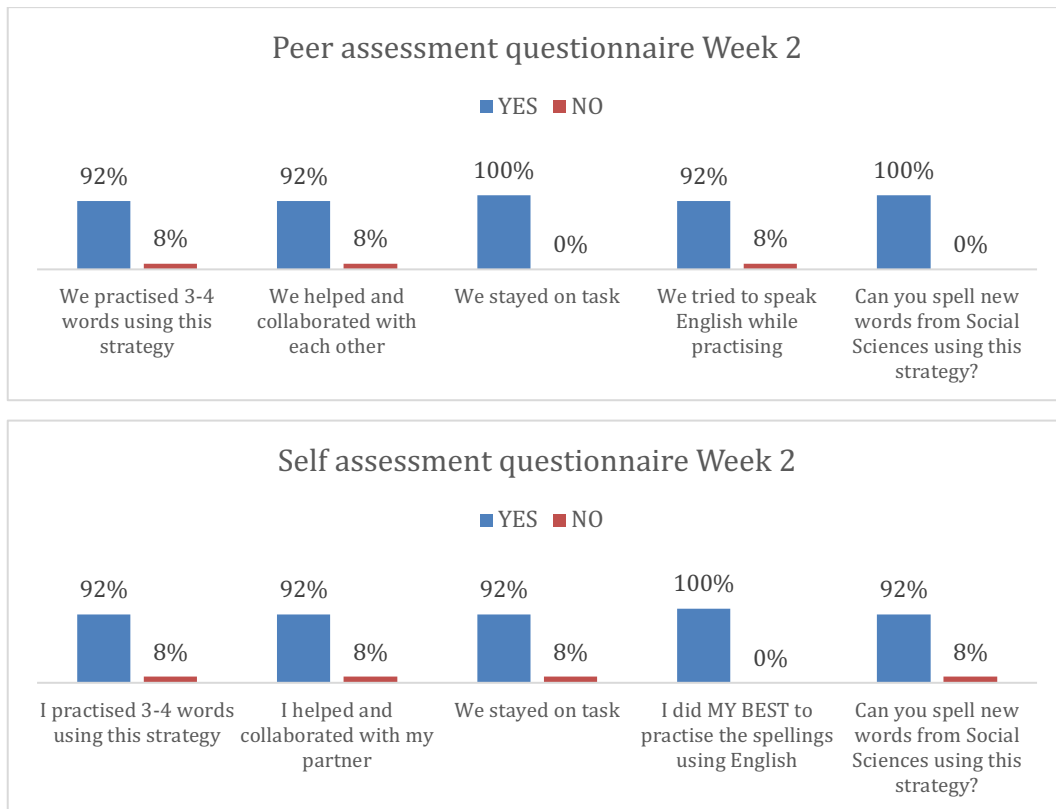
Consequently, there are no conclusive results that indicate that when students feel positive about their spelling, they perform in consonance in spelling tests. Most students in both groups believed that their spelling was brilliant or good both weeks, regardless their results in spelling tests. However, details gave a lot of insight to the study.

During the second week, the control group showed a decrease in the brilliant answers in the beliefs test and top performers in the spelling test. This may indicate that students stayed positive although knowing that their actual performance in the spelling test would worsen. Hence, students were making an effort to assess their beliefs according to their actual performance whilst keeping a positive attitude towards their spelling work. On the other hand, the high percentage of students in the experimental group answering brilliant whilst improving results in tests the second week of study may prove that if we translate students' positive beliefs into motivation and confidence towards spelling, these factors dragged students to a better performance in tests within the experimental group.

5.2.5. Qualitative data from peer and self-assessment questionnaires: Natural Sciences

As for the qualitative data, there were several aspects that were recorded. During the first week, student selected the three most difficult words to spell. After tallying the words chosen by students, the three most mentioned were included in the spelling test during the second week, to see whether there was improvement after further practice. The words chosen were *wood*, due to its similarity with *wool*, *marbles* and *opaque*. Peer and self-assessment questionnaires were recorded at two different times during the second week of study in the experimental group (see appendix 13). Students were asked to answer a questionnaire in pairs after two days practising an NLP spelling strategy in class and a similar questionnaire at the end of the week after four days of practice, although this time individually.

Graph 5: Week 2 peer and self - assessment questionnaires



Seeing these results, it stands to reason that most students in the experimental group felt positive about their skills using NLP spelling strategies, not only in pairs, but also individually. Results in the two first statements (i.e., we practiced 3-4 words using this strategy and we helped and collaborated with each other) had the same results in the peer and self-assessment questionnaire with 92% of affirmative answers. Staying on task had better results when students answered the peer assessment questionnaire with 100% of positive responses. Meanwhile, working in pairs using English to communicate had better results in the self-assessment questionnaire. Interestingly, 8% of students answered to the individual questionnaire that they could not spell words using the strategy, whereas 100% of students working in pairs think they can do it. Those students who assessed themselves negatively in some statements may have had trouble working with their peers as recorded in the research journal. This brings up the question of whether working collaboratively increases confidence.

Working in pairs is therefore the previous step towards collaborative groups. In the experimental group, there were many dominant personalities. However, there are also quite a few shy and quiet students too. By working in pairs, shy students are given the perfect excuse to express themselves without feeling the group and teacher's pressure.

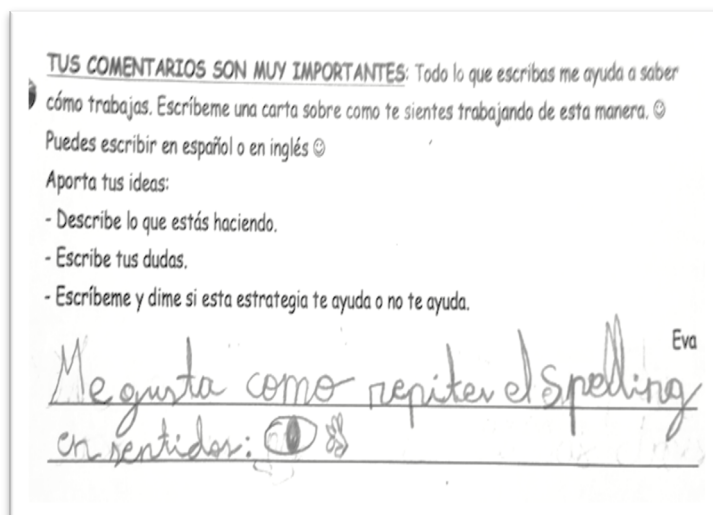
This way, when moving towards group work by mixing pairs, they will be likely to take more chances to speak up since they feel they have a back-up friend to help them support their claims.

In addition to this, not only pair and group work enhances the development of interpersonal skills, but also maximises opportunities for oral interactions. Giving opportunities to use the target language in a relaxed situation makes students more willing to take risks with the language, which in many cases translates in finding intrinsic motivation switches to get to use this new content language. Furthermore, students have more chances to feel as an accountable part of the group when working in pairs. It is highly probable then that students feel more confident working with their peers.

5.2.6. Qualitative data taken from observation rubrics, feedback given and research journal

Concerning the comments made by students, the most valuable opinions for the sake of this study was that they tended to feel motivated when learning new things, they liked to have fun while learning and they mostly liked to work with others. In addition to this, some students wrote that they felt good working with strategies and made comments about their needs for improvement for the future: ‘We need more practice with longer words’ (S. and I., 12th April) and ‘We sometimes didn’t work at the same pace but we’ll do it better next time’ (Y. and L.V., 12th April). There were also very positive comments such as, ‘We love learning new words in English because we like learning new things’ (M. and A., 12th April). Therefore, it seems reasonable to think that students have a desire to continue learning while taking challenges. Interestingly enough, a quiet student who was making good progress and showing continue effort during his second year in second grade, made the most remarkable comment during the second week of research: ‘I like how you repeat the spelling with senses’; adding a little drawing of an eye and a hand.

Figure 4: Comment made by student in the letter to the teacher questionnaire



I also noted that one student said that he had had trouble when practising at home. For that reason, I offered to stay during break time to help them master the strategy. Staying five minutes after class was voluntary and ‘only four students stayed but I noticed that they did not have as much trouble as they thought’ (note taken 13th April 2016). One student (J.) who had noted to have trouble with the strategy, did not stay to get extra help. When asked again in the self-assessment after 4 days of practice, this student commented that the strategies helped him to learn best. In addition to this, when comparing his results in week 1 and 2, it is worth pointing out that he did not have trouble remembering the spellings in the first place. Once again, there are grounds to believe that it was more of a self-confidence issue regarding working with spelling in this new way that in fact, requires more effort and concentration.

When collecting data from direct observation, I also noticed how some pairs did not get along or were too playful. As a consequence, pairs were readjusted, which resulted in better performance of the groups. ‘Thanks to the observation rubric and the notes taken from yesterday’s activities, I found out that four pairs of students needed a change’ (note taken 12th April 2016).

With regard to the feedback given by the language assistants and the student teacher, it can be highlighted how they reminded me to give further language scaffolding so students could use the target language while practising their spellings as at the initial stages of the study, I was more focused on the strategies themselves. Thanks to their

advice, I displayed a word document on the interactive whiteboard (IWB onwards) with useful language that students could use while practising spelling in pairs. This document included language functions for turn-taking and key language in order to get students use the target language throughout the task (see appendix 12).

In addition to this, one language assistant noticed how students practised only what they considered ‘easy’ words. Consequently, the following days I provided further guidance in the words that needed further practice to avoid students always practising the same words. At some stages, I left language assistants and the student teacher taking notes in the observation rubric whilst I assisted students who required additional help during the task. As a matter of fact, the student teacher felt the same need of extra help in the feedback given on the 14th of April of 2016.

All in all, students’ attitudes towards the practice of NLP spelling strategies were positive. In order to keep the learning of the strategies under the CLIL umbrella, English was used as a vehicle of instruction. As a consequence, I had to adjust classroom practices and dynamics whilst giving support so as to make learning possible for students.

The following two weeks of the study focused on key content words from Social Sciences vocabulary. As a result, the following section illustrates the results obtained from the spelling tests and the beliefs tests for Social Science. Answers and scores from these tests will be compared so as to find possible correlations among beliefs and actual performance. Furthermore, other qualitative data such as peer and self-assessment questionnaires will be explained at the end of this chapter.

5.3. Results and analysis of the pilot study: Social Sciences

The third and fourth week of this pilot study were dedicated to Social Sciences and the vocabulary was related to road safety topic. Once again, the results will be analysed comparing results obtained in both weeks. Additionally, the scores were divided into the same categories as shown on table 7⁴⁷.

⁴⁷ From a one to ten scale, poor performance are scores below five points, students in the risk zone are those who got a score below six, average score is given to students between a six and a seven point five, and top performance are scores between a seven point six and a ten.

During the third week, we went back to usual spelling practice. Students in both experimental and control group were given two handouts with a list of fifteen words from Social Sciences to copy and practice throughout the week, as part of their homework. Students' performance was also assessed through a spelling dictation test of twelve words done after a week of practice. Successful or passed spelling tests were considered to be those from borderline to exceeding scores. However, borderline scores were also analysed as part of the risk zone due to the low scores in tests (i.e., less than six correct words).

The control group would remain to do the same for the following week whereas the experimental group was introduced two new NLP visualisation of spelling strategies during the fourth week of research. With regard to the spelling test during the fourth week, the experimental group's test was based on the NLP spelling strategies learnt, including non-verbal clues, where twelve words were assessed with nine new ones and three from the previous week.

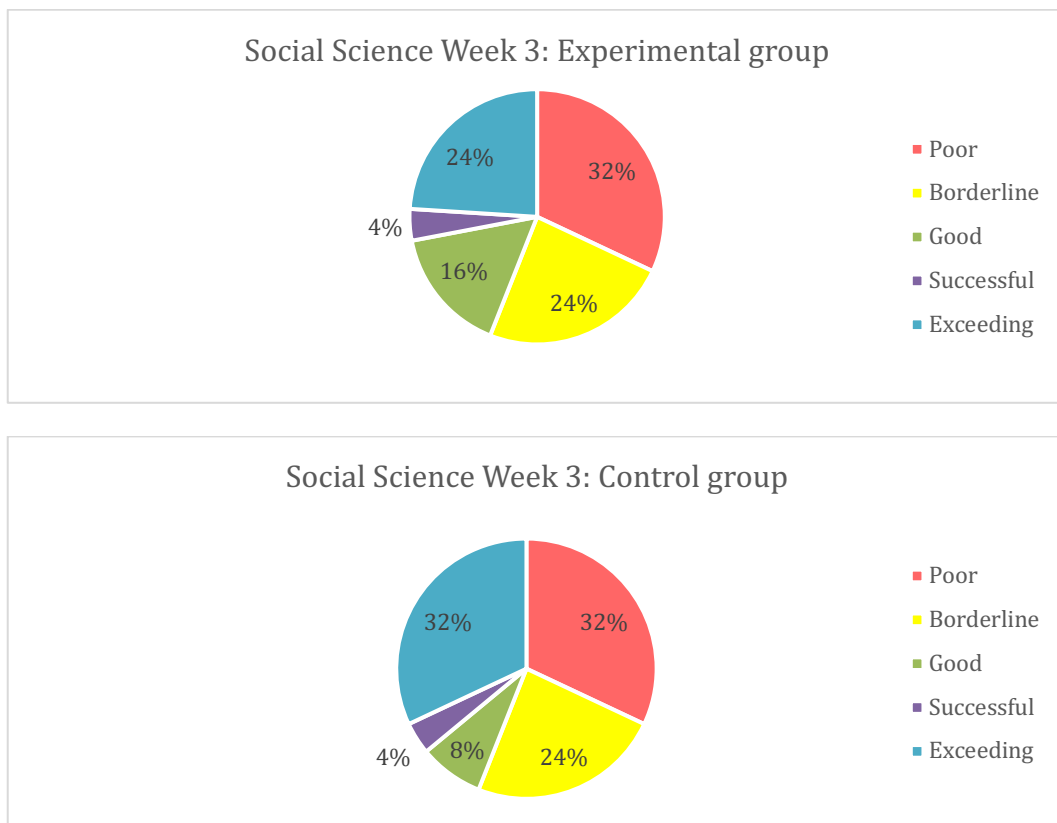
Additionally, it is worth saying that the words chosen on each test were selected in relation to the contents being taught. However, the list of words was given the weekend before starting the new Social Sciences unit for the control group, whilst the experimental started practising the new words after the weekend.

5.3.1. Spelling tests

With regard to spelling tests, a spelling dictation for both groups of students was conducted during the third week. Nevertheless, the experimental group test was based on the NLP strategies practised in class during the fourth week. As a matter of fact, this meant that students in the experimental group were given additional support since they practised in class and the test included non-verbal aid. In this NLP based spelling test, the first step was to clap each letter of a word so students could copy the number of letters of each word in the right column of their tests. Then, students were asked to draw as many dashes as letters on each word in the middle column.

Once the word was said, students were required to check that the number of dashes they drew was the same number of letters they had to write. And finally, the word was pronounced once more so students could write the word. As the experimental group counted with two students with ADHD and they had a hard week as noted in the research journal, I required all students to raise their hands when they were ready to listen to the next word. Consequently, I could avoid frustration and abandonment from these students. The chart below shows the breakdown of spelling test scores after a week of practice copying key content words from Social Sciences in both groups of participants.

Chart 3: Week 3 spelling test scores after drilling practice. Road Safety vocabulary.



During the third week, students in both groups practised spelling through a drilling exercise (copying words) and both groups of participants showed similar results in spelling tests. The percentage of students who passed the test was 68% for both groups. In the control group, the percentage of top performers was 36% with 4% of successful and 32% exceeding scores. In the experimental group the percentage of top performers was 28% with 4% of successful and 24% exceeding scores. Thus, the control group had better scores in the top zone. However, the percentage of spelling tests in the average zone doubled in the experimental group with 16% versus an 8% in the control. On the other

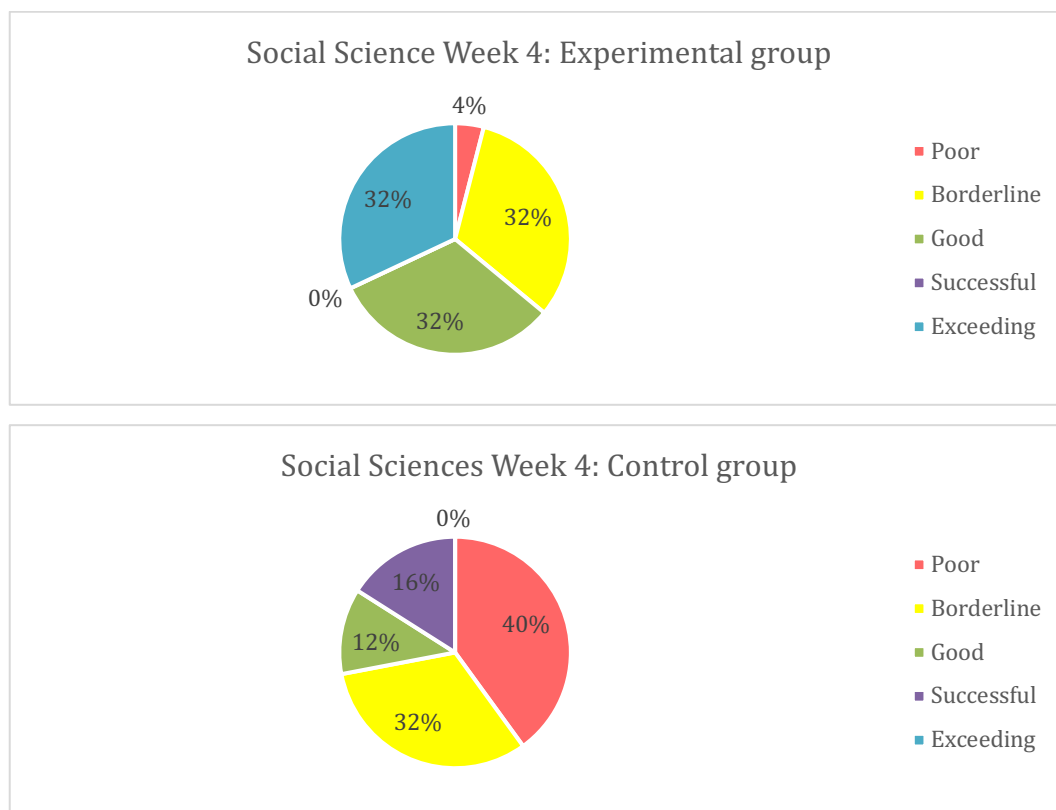
hand, the percentage of weak or failed spelling tests were 56% in both groups with 24% of these tests below six correct words in the risk zone and 32% with less than four correct words in the poor zone. Therefore, there was a significant number of students not being able to perform accurately in both groups.

One interesting finding is that both groups performed similarly after the first week of copying words for spelling practice with Social Science vocabulary. In both groups, 56% of spelling tests were below the average scores and 44% of spelling tests were above the average score. There were more spelling tests in the top performers in the control group but those who were not top performers in the experimental group were in the average zone. The same number of spelling tests in both groups were weak or poor. These relationships between results may be explained by the fact that they were both copying words for spelling practice. As a result, they obtained similar outcomes. Given that in the control group there were more spelling tests with exceeding scores, it could be argued that they started performing slightly better than the experimental group. Still, more than half of both groups failed to spell correctly most of the words dictated.

During the fourth week of the study, students in the control group remained to do the same (i.e., copying words from a list for spelling practice) whilst the control group was introduced to two new NLP spelling strategies. Both groups took a spelling test with twelve content words from Social Sciences at the end of the week. The spelling test consisted in the dictation of words (in the control group) and the dictation of words using V-A-K recalls. As previously commented, the week that an NLP spelling strategy was introduced in the experimental group, spelling tests included aids such as snapping the fingers to know the number of letters in a word before dictating it. This way students could fill in the gaps the letters they were retrieving from memory.

The following chart presents the scores in spelling tests in both groups during the fourth week of study. At the end of this section, the results were compared to the results of the previous week in which no NLP was offered. Both weeks assessed the spelling of content words from the Social Sciences unit at the moment of the study (i.e., road safety).

Chart 4: Week 4 spelling test scores after NLP spelling strategies in the Experimental group and drilling practice in the Control group. Road Safety vocabulary.



After teaching two new NLP spelling strategies to the experimental group, the percentage of passed spelling tests was 96%. Nevertheless, in the control group only 60% of spelling tests had correctly spelled at least half of the words dictated. The percentage of top performers in the experimental group was 32% of exceeding tests and there were no successful scores recorded. In a similar vein, the percentage of top performers in the control group were 16% of successful tests with no exceeding scores recorded. However, the experimental group had doubled the number of successful tests in the control group in favour of exceeding scores. Added to that, during the fourth week of study, the experimental group surpassed the control group with 36% more of students passing the spelling tests.

As for results in the average zone, 32% of spelling tests in the experimental group contrast a 12% in the control group. The same percentage of tests in the average zone in the experimental group was the percentage of spelling tests within the risk zone in the control group. What stands out in the chart is that 40% of spelling tests were poor in the control group whilst only 4% of tests were in this range in the experimental group. Poor

spelling tests in the control group multiple by ten the same category of tests in the experimental group. These results together with the experimental group's exceptional results in the top and average zones indicated that the use of NLP spelling strategies during the fourth week was beneficial to students in the experimental group. On the other hand, results in the control group who had practiced their spelling by copying words showed that 72% of students were within the risk and poor zones.

5.3.2. Conclusions of the second two weeks of research in spelling tests: Social Sciences

Striking changes could be observed when comparing the third and fourth week of research. It is important to take into consideration that students in the experimental group were given lots of practice and assistance in class whilst the control group was only required to complete their homework, which in fact they failed to do in many cases, although they eventually presented the complete worksheet at the end of the week.

With this in mind, 96% of students in the experimental group passed the test, whilst only 60% of students in the control group passed the test in the fourth week of research. In addition to this, 36% of students in the experimental group showed great improvement when comparing with the third week's results, as 20% of students situated mostly among good performers this time. Even though there were not successful performers recorded, students in the exceeding fringe also increased from 24% in the third week to a 32% in the fourth week. Conversely, results in the control group indicated a drop in all measures during the fourth week. From being at the same level in the risk and poor zones during the third week of study (56%), students in the control group increased by 16% this number during the fourth week of study. Furthermore, there were not students recorded in the exceeding range having a short percentage of 16% of students as top performers.

The control group started performing key content words from Social Sciences with slightly stronger skills since results indicated that more students got higher scores in spelling tests during the third week. Nevertheless, results in spelling tests in both groups were weak or poor to a large extent. Poor spelling tests in the control group continued to increase in the fourth week of study. Meanwhile the experimental group was improving spelling performance with exceptional results in the top and average zone whilst diminishing to 28% the percentage of poor tests.

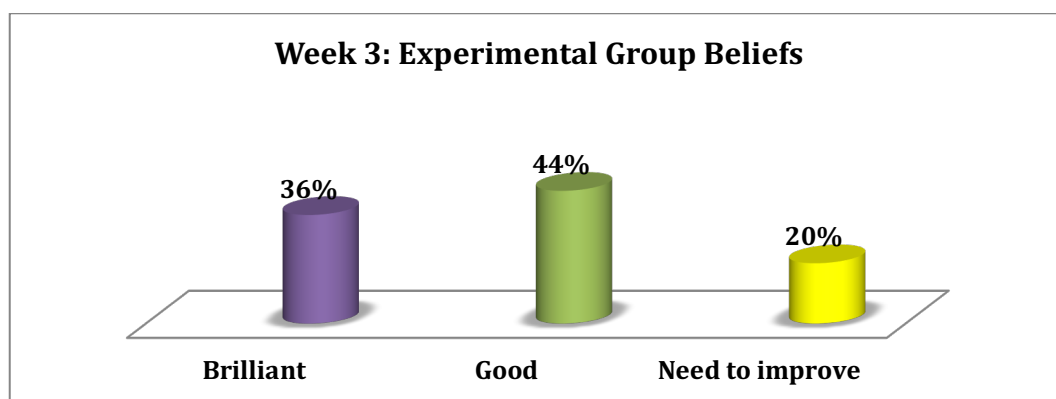
Both groups had weak results during the third week of study after a week of copying words. However, once the NLP spelling strategy was introduced to the experimental group in the fourth week, the number of poor spelling tests decreased drastically in favour of exceeding scores. The results seem to indicate that copying words from a list was not as successful as teaching two NLP spelling strategies for spelling practice.

5.3.3. Beliefs tests

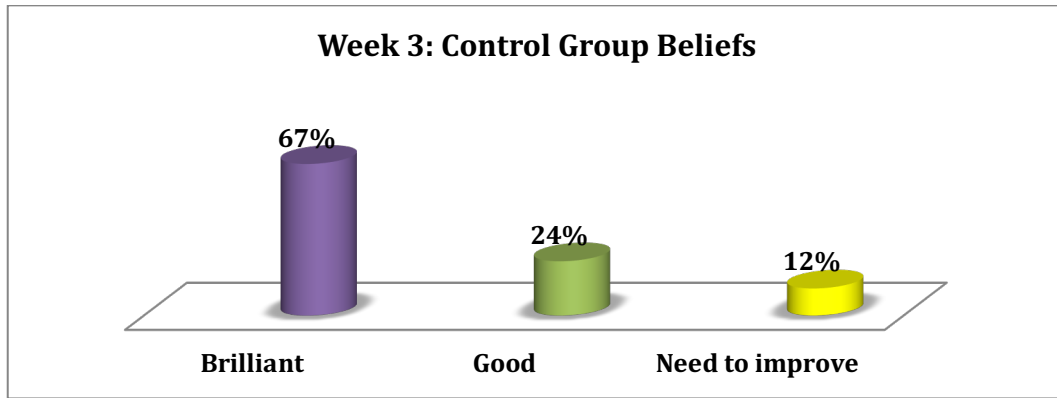
In order to organise data collected from the beliefs test, the scores were divided into three categories (brilliant, good, need to improve), in which students had to assess their spelling performance during the week right before the test. These categories were related to the scores reached in the spelling tests as seen in table 8⁴⁸.

Results from the beliefs test in third week were compared to the answers in the same test during the fourth week of study. In addition to this, these results were compared to the students' actual performance in spelling tests during both weeks of study in which key content words from Social Sciences were assessed. With the intention of analysing results in the beliefs test, the graph below shows the level of confidence and beliefs of students in both groups during the third week of study with regard to their spelling practice.

Graph 6: Week 3 Beliefs in both groups



⁴⁸ From a one to ten scale, students were considered brilliant when the score was within successful and exceeding, good when the score was good or borderline and need to improve when the score was poor. This way, beliefs and actual performance could be analysed.

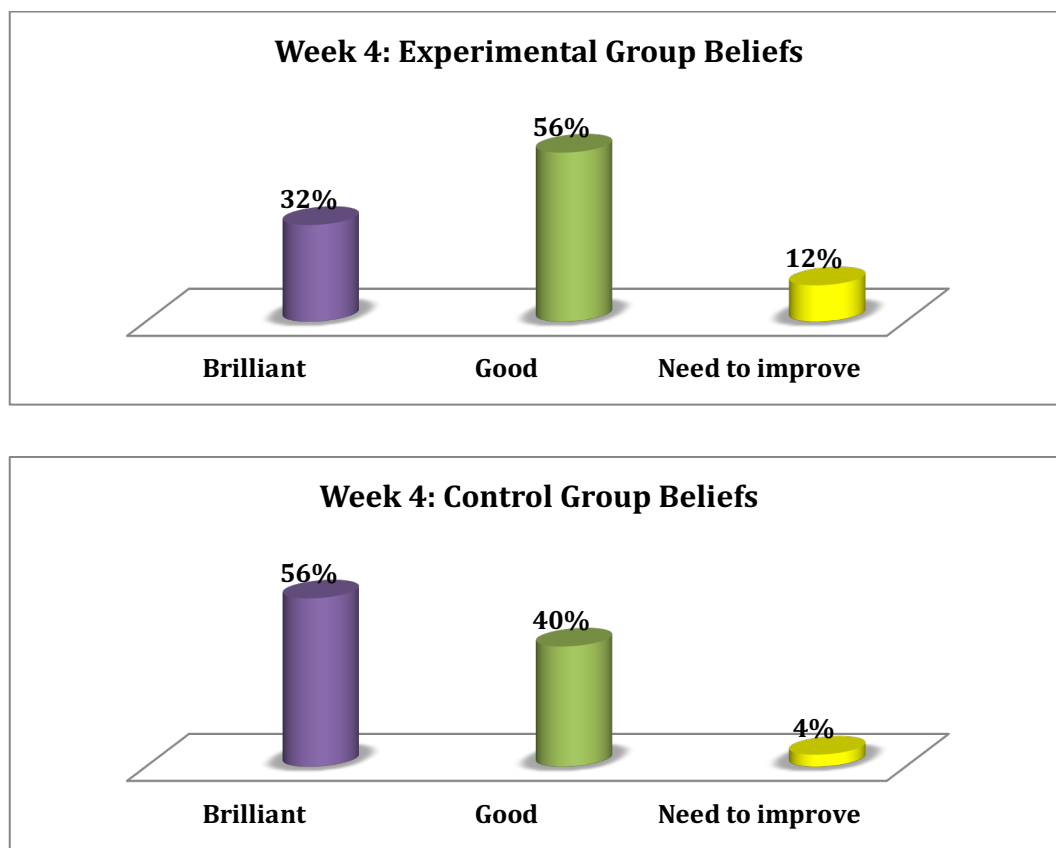


As shown in the graph above (graph 6), there was a great number of students in both groups whose beliefs showed a great level of confidence with regard to their spelling skills during the third week. 67% of students in the control group believed their spelling work was brilliant whilst 36% of students in the experimental group had the same answer. Interestingly, the percentage of good answers in the experimental group surpassed the percentage of brilliant answers for the first time in this study. In this regard, 44% of students in the experimental group and 24% of students in the control group believed that their spelling was good.

Another surprising result is that the percentage of students believing they needed to improve in spelling was also larger than any other week, with 20% of students in the experimental group and 12% of students in the control group. Overall, these results indicated that 80% in the experimental group and around 90% in the control group believed that they had performed well or brilliantly throughout the week. Consequently, a large number of students in both groups maintained to feel confident about their spelling progress. Despite that, the control group showed a more confident and positive vision of their work with more brilliant answers and less need to improve.

Before proceeding to examine the possible correlations among beliefs and spelling tests in both groups, it is necessary to first analyse results from the fourth week of study.

Graph 7: Week 4 Beliefs in both groups



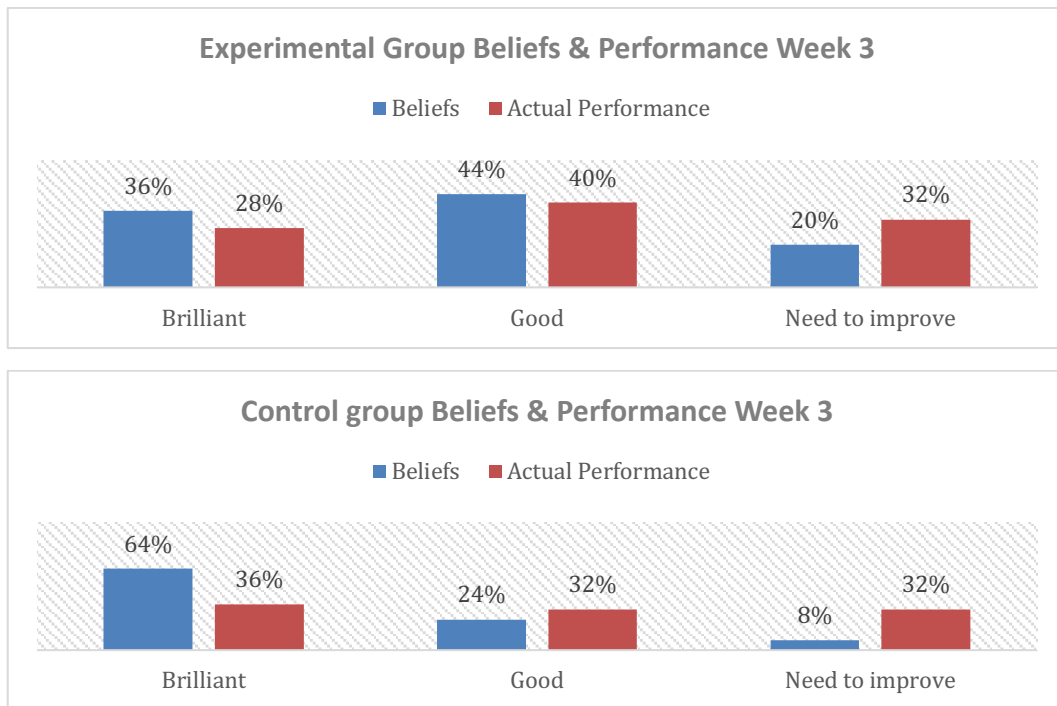
Within the fourth week of study, 32% of students in the experimental group believed their spelling work that week was brilliant. Added to that, 56% of students believed that their spelling was good. Even though 88% of students in the experimental group believed their spelling was brilliant or good, it was surprising to see the percentage of good answers surpass the percentage of brilliant answers for the second time in this study. In the control group, 56% of students answering brilliant and 40% of students answering good to the beliefs tests, make 96% of students feeling confident about their spelling work. Regarding need to improve answers, 12% of students in the experimental group and 4% in the control group showed less confidence towards spelling this week. Consequently, a large number of students in both groups still maintained to feel confident about their spelling progress. However, the control group kept showing a more confident and positive vision of their work. The high number of students answering need to improve in the beliefs test were significant in the third week for both groups. The fourth week, these results improved in both groups in favour of good answers.

In order to have a clear idea of the results, in the next section the answers in the beliefs tests were compared to the actual performance in spelling tests throughout the two weeks in which key content words from Social Sciences were practiced.

5.3.4. Comparing results in spelling tests with students' beliefs about spelling: Social Sciences

In a bid to compare results in the beliefs tests and the actual performance in spelling tests for both groups, the graph below shows the level of confidence and beliefs of students compared to the scores in spelling tests during the third week of study.

Graph 8: Weeks 3 and 4 Beliefs and Actual Performance in both groups



When comparing students' beliefs in both groups with their actual performance in spelling tests, much discordance could be observed specially in the control group. 64% of students in this group believed that their spelling was brilliant and 24% that their spelling was good. However, there were 36% of spelling tests within the top performance range, mostly with exceeding scores. Even adding the 8% of spelling tests in the average zone, 23% of students that were considering that they were spelling correctly more words than they actually did (see section 5.3.1).

On the other hand, students who believed that their spelling work had been successful and thus, answering good in the beliefs questionnaire in the third week were 24% in the control group. This percentage matched the number of spelling tests within the risk zone, that even if considered passed tests were weak in terms of the number of words with correct spelling (5 or 6 correct words) (see section 5.3.1). Once more, students in the control group who performed weakly in spelling test were thinking that their spelling was good. Furthermore, spelling tests within the poor zone in the third week were 32% in the control group. However, only 12% of students stated that they needed improvement with their spellings. As a result, 20% of students were considering themselves good or brilliant but actually failing the spelling tests.

Considering that in the control group the results in spelling tests worsen week after week there is not much room to believe that improvable results in previous spelling tests influenced students' beliefs about their spelling skills. Consequently, either students were not able to assess their efforts towards spelling work or were not being honest in their questionnaires since answering good or brilliant could be a way to please the teacher or make them look good in front of others.

With regard to results in the experimental group, the correlation among beliefs and actual performance in spelling tests after copying words for spelling practice was also discordant although to a lesser degree. As commented in the previous section, for the first time, the number of students who felt brilliant (36%) was lower than the number of students answering good in the beliefs test (44%) (see section 5.2.4). Comparing these answers to the results in spelling tests, it can be observed how 28% of spelling tests within the top performers zone were only 8% away from the brilliant answers. Ergo, only two students were not able to assess their spelling practice according to the actual performance when crossing data from brilliant answers and the percentage of top performers.

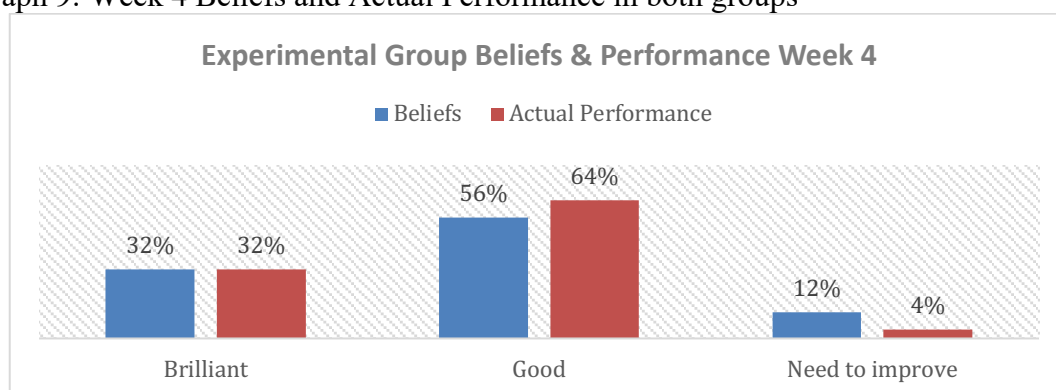
Regarding the percentage of students answering good in the beliefs tests and the correlation between the average and risk zones, data suggested that 40% of spelling scores within these zones - 16% average and 24% risk zone - roughly matched the 44% of students believing they were performing well. However, another two students were having weak results in spelling tests but still believing they were doing good.

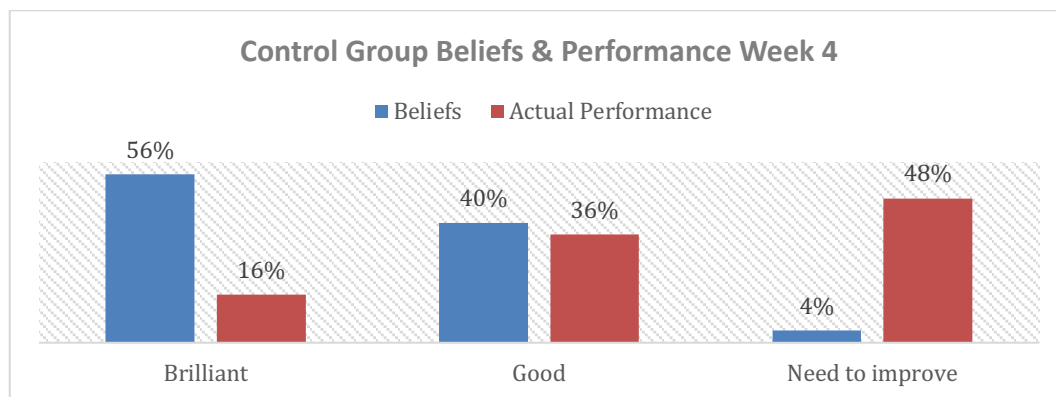
Much difference is seen crossing data from poor spelling tests and need to improve answers in the beliefs test. Poor spelling tests in the control group were 32% whereas only 8% of students stated that they needed to improve. Consequently, around 20% of students in the control group were having trouble assessing themselves. A possible explanation for this is that they might have not been honest about their spelling skills or were more confident before the test influenced by the positive results obtained during the second (and previous) week of study (see section 5.2.1, chart 2). On the other hand, 20% of the experimental group indicates that there was room for spelling improvement that is closer to the 32% of needed to improve spelling tests. Ergo in general terms, the experimental group beliefs were slightly closer to the actual performance in tests. Possibly, the fact that they were regularly asked to assess themselves by means of the beliefs and self and peer assessment questionnaires made a difference in having the experimental group more trained to match efforts and outcomes.

In conclusion, students in both groups showed a similar percentage of students believing they were good spellers when they were actually failing the spelling tests. To a larger extent, students in the control group believed their spelling was brilliant although they were not performing in consonance. In the experimental group, the percentage of students answering good was greater than students answering brilliant and the scores in spelling tests roughly matched their answers in the beliefs test. The same happened in the average zone in the experimental group, answers and scores could relate. However, around 20% of students in the control group were not performing well whilst assessing themselves as good spellers.

Turning now to the fourth week of the study, the following graphs show students' answers in the beliefs test compared to the actual performance in spelling tests.

Graph 9: Week 4 Beliefs and Actual Performance in both groups





From the graph above it can be seen that 88% of students in the experimental group and 96% of students in the control group believed in their spellings skills as being brilliant or good. Despite this confidence, average scores in the control group were 12% and 32% of tests, although passed, were within the risk zone. Top performers in this spelling test did not count with exceeding scores and successful scores were 16%. The percentage of top performers (16%) by far, did not match the 56% of students in the control group feeling brilliant about their spelling (see section 5.3.1).

On the other hand, data gathered from students' beliefs indicated that 40% of them believed that their spelling was good. Consequently, this percentage roughly matched the number of tests that had borderline and average results. As for spelling tests within the poor zone in the control group, they were the highest range this week with 40% of tests with less than four correct words (see section 5.3.1). Nevertheless, only 4% of students in the control group believed they needed to improve. Therefore, the control group increased the percentage of students who failed to give an accurate opinion about their efforts and performance.

To sum up, once more students in the control group answered brilliant to a larger extent followed by good with a small percentage of students believing they needed to improve their spelling during the fourth week of study. However, there were not a similar percentage of tests with scores with the top performers zone. On the one hand, the percentage of students in the control group who answered good in the beliefs test approximately corresponded to the tests in the average and risk zones. Nevertheless, the high percentage of failed spelling tests compared to the low percentage of students believing they needed to improve indicated that they were not performing in tests according to their beliefs.

On the other hand, the experimental group showed fairer concordance between beliefs and actual performance. Brilliant answers in the beliefs test decreased in favour to good answers for the second consecutive time in the study. However, spelling tests within the top performers zone were 32% of exceeding tests with no successful scores. Ergo, the number of tests with exceeding scores corresponded exactly to the number of students answering brilliant in the beliefs test.

Spelling tests in the average and risk zones were both 32%. Comparing these results to the percentage of students who answered good in the beliefs test (56%), a difference of 8% of students were performing better than they believed. In addition, the percentage of poor spelling tests significantly decreased to a 4% this week whilst 12% of students believed that they needed to improve. Again, 8% of students were performing better than they believed. Consequently, the experimental group was closer in the correspondence among beliefs and actual performance. However, some students were considering themselves as less strong spellers than they actually were, unlike the control group. In conclusion, data from both weeks practicing key content words of Social Sciences suggested that when practiced in class with NLP spelling strategies, students improved their scores in spelling tests. On the contrary, spelling scores decreased significantly when copying words for spelling practice during the third week of study for the experimental group and both weeks for the control group.

With regard to beliefs, in general terms the control group showed more confidence. However, they were achieving lower scores in spelling tests. Similar to this, the experimental group's scores in spelling tests, although better than in the control group, decreased in the third week of study when compared to previous weeks. Beliefs test in the experimental group showed that for the first time more students were assessing themselves as good rather than brilliant. Still in the third week, they were performing in tests worse than they thought. However, this fall in the brilliant answers and increase of students believing they needed to improve may indicate that more students were trying to be consequent with their efforts in spellings.

Attention to detail is what gave more insight to the study, small changes in percentages taken from the beliefs tests across weeks in the experimental group indicated that students were making an effort to give an honest opinion about their spelling skills. Their answers in the beliefs tests were translated into relatively closer results to their scores in spelling tests, mostly in NLP weeks (second and fourth week).

The fact that students in the experimental group perceived themselves as good or brilliant and the influence in their scores in spelling tests was uncertain in the third week. There were many variables that may have influenced students' beliefs about their spelling performance in both groups. As it was commented above, some students might have been influenced by the excellent results the previous week considering themselves as more skilled with regard to spelling. However, this was not the case of the control group who regardless their scores in tests always thought they were performing brilliant or well to a larger extent. Whether they were answering what they actually believed or what they thought it was best to answer was also uncertain. Needless to say, these are aspects that cannot be easily measured.

Perhaps, the use of peer and self-assessment questionnaires made students in the experimental group more able to give a more honest opinion about their spelling work. When practicing with the NLP spelling strategy, students were able to put to test the words they could actually see in their minds what might have given them a better idea of how many spellings of words they could memorise. As the control group did not participate in peer or self-assessment questionnaires and were only asked to copy words for spelling practice, they may have thought that copying words correctly in a list was good enough or even brilliant when doing it neatly and on time. However, copying words did not particularly help improving their spelling of key content words of Social Sciences. These results and other qualitative aspects of this study will be analysed in the following section.

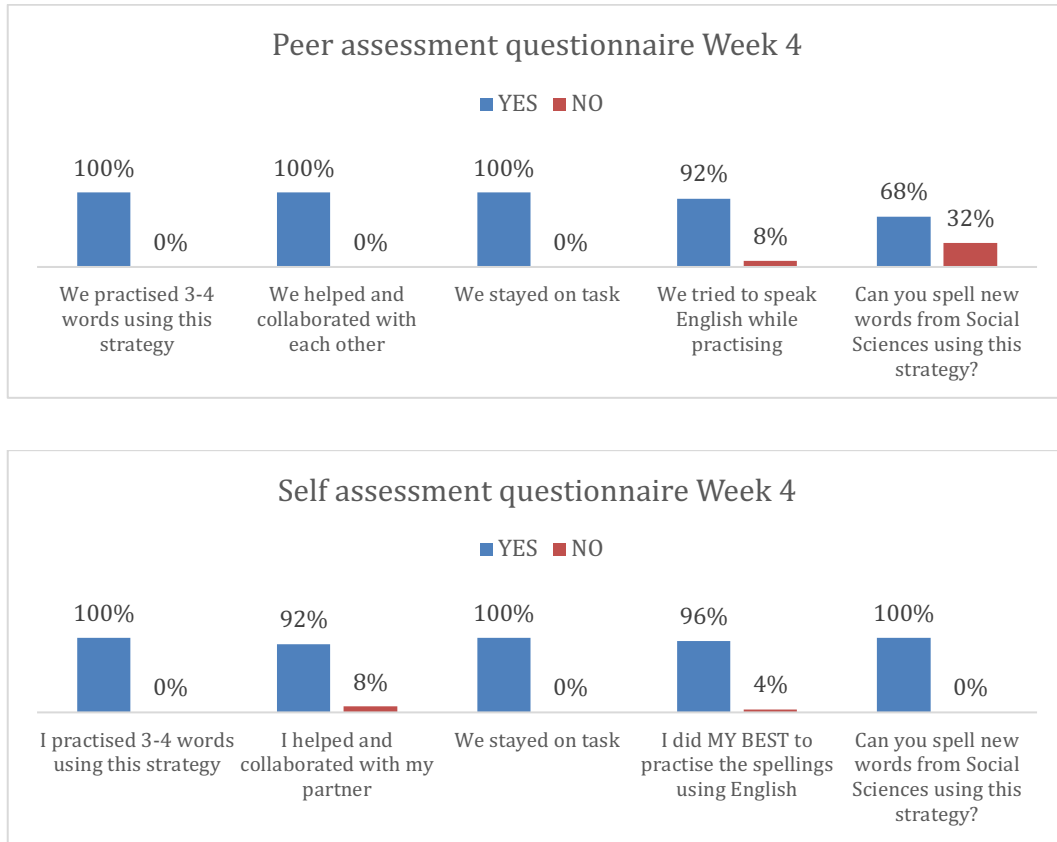
5.3.5. Qualitative data from peer and self-assessment questionnaires: Social Sciences

As for the qualitative data, the same questionnaires from the ones used the previous weeks were handed to students (see appendix 13). During the third week, students selected the three most difficult words to spell. After tallying the words chosen by students, the three most mentioned were included in the class practice during the last week. However, this time the three most misspelled words from the third week spelling test were the ones included in the final test. These words were: *plane* due to its similarity with *plain*, which in fact was the most preferred spelling in both groups, *street light* and *pollution*, which difficulty relied on double letters and the spelling of *-ight*. For the second time during this research, peer and self-assessment questionnaires, were recorded at two different times during the fourth week. Students were asked to answer a questionnaire in pairs after two days practising an NLP spelling strategy in class and a similar questionnaire

at the end of the week after four days of practice, although this time individually.

The following graph illustrates the breakdown of results of peer and self assessment questionnaires completed during the fourth week of study:

Graph 10: Week 4 peer and self - assessment questionnaires



In general terms, results in both questionnaires were very similar. By looking at these results, it can be observed how most students assessed themselves as good performers within the spelling tasks carried out in class during the fourth week. For instance, all students could practice at least 3-4 words in class using the NLP spelling strategy while keeping on task. All students in the peer assessment questionnaire answered yes to having collaborated with each other, whilst a couple of days later in the self-assessment questionnaire 8% students considered there was room for improvement.

When it comes to practise English during the tasks, some students felt they were not doing their best efforts although most answered they were trying their best to use English as the language to communicate (92% in the peer assessment and 96% in the self-assessment). In line with this, results from the peer-assessment questionnaire revealed that 8% of students answered negatively to the statement ‘we tried to speak English while

practising'. These two students were, a student with ADHD (M.) and a very quiet but hard working girl (R.). As recorded in my research journal the 26th of April: 'M. and G. (both ADHD students) did not want to collaborate today. G. tried at times but M. was OUT (lost in thought). When M. had to write he just drew or his handwriting was illegible.' M. wouldn't collaborate and showed himself with a great lack of interest and motivation. Thanks to his partner's effort, they managed to stay on task as recorded in the observation rubric completed by the language assistant. When peer assessment questionnaire was done, R. was the only one writing although she tried hard to comment with M. It was a hard day, so no wonder why there was not much English spoken. A positive remark was that they were honest about it which is not always a given. Additionally, R. wrote this comment in Spanish (her L2, as she is Romanian) on the peer-assessment record: '*Nos ayuda para mi y M. pero el no estaba atento pero todos los días me gustan las actividades y me ayuda.*' (It's helpful for me and M. although he wasn't paying attention but everyday I like the activities and it helps').

In addition to this, during peer assessment 32% of students (three pairs) noted they were struggling with spelling words using the NLP spelling strategy. After identifying the pairs, there is reason to believe that these pairs were quite particular. One team was formed by A. who was a strong student but quite disruptive and his partner J., who was new arrival from Bolivia that had not been schooled in the last year. Other team was formed by I. who was a quiet but strong student and her partner G. that was an ADHD student with very low levels of frustration. The last team was formed by P. who was an average student with high motivation for English and her partner H., who had not come to school for two months during the second term. In fact, H. remained in second grade the following year. Added to that, S. and L.V. also declared to have problems. However, as recorded by the student teacher on the observation rubric: 'S. was helping L. and she is working better day by day' (26th April 2016).

It is important to bear in mind that these students decided to change their answer to 'Yes' after having a time with me monitoring them whilst using the strategy. Thus, positive changes towards the activity appear when students feel confident thanks to the help of the teacher's guidance. However, their initial answers were included for the benefit of this research.

With regard to the self-assessment, taken the 28th of April 2016, around two students answered negatively to the statement ‘I helped and collaborated with my partner’. Á. wrote this comment in Spanish: ‘*Me gusta mucho porque aprendo cosas nuevas pero tengo que ayudar a mi compañero más*’ (‘I like it a lot because I learn new things but I have to help my partner more’). As a matter of fact, when comparing this comment to the observation rubric, the language assistant noted: ‘they seem to have very little energy when it comes to speaking. They’ve been looking at the study too much (strategy handout). They are diligently working though slower than the rest’ (26th of April 2016). Consequently, it seems that students were able to be honest in the self-assessment after a few weeks of practice.

As for other comments that students jotted down in their peer questionnaires, I could observe how they mainly shared time and place so they could both write a comment. Among the most remarkable answers I could highlight evidence for some students’ motivation. J., a student who indicated to have had problems using the NLP spelling strategy during the second week of the study wrote the following during the fourth week: ‘*Me ayuda esta estrategia porque juego y aprendo a la vez*’ (‘This strategy helps me because I play at the same time I learn’ (J., 26th of April 2016). Taking into account that this very same student maintained to have difficulties during the same questionnaire during the second week, this is a great improvement.

Furthermore, a fair number of students wrote about the desire to continue learning spellings and most of them reflected about how much they enjoyed working and playing with their peers. One particular group of students form by the strongest student in the class, a disruptive girl could be bossy who at times but nevertheless often willing to learn and make efforts and a Chinese student who was absent the previous day noted: ‘*N. y S. ayudaron a Y. porque Y. no había venido y creemos que lo ha entendido y hemos practicado mucho inglés*’ (‘N. and S. helped Y. because Y. didn’t come and we believe he understood it and we have practiced a lot in English’ (26th April 2016)). I assisted this group while S. and N. explained the strategy to Y. When I left the group to monitor other students, they began to have problems taking turns as they were both too willing to help but leaving no room for their partner. This was solved when the student teacher reinforced turn taking. In fact, the student teacher reported how this was solved and how helpful the two students were to Y. It is possible that these students were having fun to the point of not being able to control themselves with excitement.

Along with all these positive comments, there was also some room for improvement in opinions given by students in the self-assessment questionnaires. Y. wrote: '*Tengo que esforzarme en ayudar a O. y J.*' ('I need more effort to help O. and J.' (28th of April 2016). Added to that, I. noted: '*Tengo que mejorar más las estrategias*' ('I still need to improve more the strategies' (28th of April 2016)).

Finally, I could not finish this point without mentioning an inspiring comment made by A. on this self-assessment questionnaire: '*Lo he hecho lo mejor que puedo, intent hablar inglés con todo el mundo y no quiero dejar de aprender*' ('I have done it the best I can, I try to speak English with everybody and I don't want to stop learning' (28th of April 2016). I was really impressed to read this since A. was one of my quietest students. He got good results in all subjects but rarely participated unless he was asked. By giving the chance to reflect about learning on a paper, I had important insights from my students, especially from the shyest who were not always ready to speak up.

When coding and interpreting data, I noted the following reflection in my journal: 'Thanks to using self-assessment students learn how to be more sensitive towards an honest opinion about their learning.' (23rd April 2016). What I gather from this observation is that having students being able to assess themselves accurately is an indicative of learning.

5.3.6. Qualitative data taken from observation rubrics, feedback given and research journal

It is important to highlight some relevant notes taken during observation and latter reflection during the time dedicated to learning Social Sciences vocabulary. For instance, I recorded how I had to give gestural support to some pairs, so that they could double check their spelling when first copying the word. Once more, students were misspelling words when copying them from the board to their whiteboards or papers. This indicated that spelling instruction was still necessary to be able to learn the spelling of the word and reproduce it when needed.

Concerning the notes taken during the spelling dictation during the third week, I included a new question before the test: How did you study your spelling? Even though these results can only be taken as qualitative data, I noted how around eight students alleged to have used some NLP spelling strategies during this week (25th of April 2016). Thus, it stands to reason that 32% of students in the experimental group found them useful since the use of strategies was not required during the third week. However, it was a demanding session since I had to overlap the spelling test from the previous week, and the practice of a new strategy. It was the beginning of the fourth week and I had to rush to be able to comply with research and schoolwork by actually teaching Science contents.

These third and fourth NLP spelling strategies taught required students to memorise the letters and the letters on each side. Initially, I had asked them to make a column of letters hoping they would see the relationship between letters. However, most students seemed to struggle with this. The language assistant found the perfect solution in the feedback given the 26th of April 2016: ‘A lot of kids seemed to not understand the ‘left to right’ letter reading. I think it should be laid out like BI-IR-RD, for example’. The following days I genuinely tried this suggestion, which turned out into many pairs doing both ways. When monitoring, I also observed how many students were copying the easiest words. In fact, the language assistant and student teacher also shared it with me during their feedback. One example was the word ‘*Stop*’; I had already given them a shorter list of seven words to choose from, nonetheless I decided to erase this word from the board, to which many students reacted with a light disagreement.

Interestingly, some students presented their own bilingual dictionary with words and pictures in the morning. However, this made me reflect on one aspect that I had not considered before. Due to time constraints, I never asked students to find the meaning of words; what is more, I sometimes asked students to start practising the vocabulary a day or two before they made sense when teaching Science contents and language. This brought up a question of whether teaching spelling out of context helped or did not help students to find their own ways through learning.

With regard to WALT and WILF posters, data suggested that they were a good way to involve students in learning (see appendix 8). As a matter of fact, it was not me but them who explained the goals and expectations during these last two weeks. Since all posters shared the same structure, it became easier for students to know what was expected

from them and perform according to plan. It was fun to see them use the term ‘visual strategy’. It seemed they have understood what it meant to ‘see the letters in their mind’. In addition to this, I began to point out to the two stars and a wish posters shared at the end of each task (recorded in journal). When sharing my wish from the previous day (speak English), I would always ask them: Will my wish come true? Students always laughed and mostly tried to overcome each challenge I presented.

On Wednesday the 20th of April 2016 (week 3), students took a test about Natural Sciences to close the unit instead so there was no spelling practise. I prepared a test in which students had to write a fair number of words that were trained in class. Out of the ordinary, I decided not to support students with the help of a word bank either on the test or the board. I was eager to find if students were able to write the words not only in the correct place, by getting meaning from context, but also with the appropriate spelling. As a result, I compared this test and other similar Social Sciences tests, the former test considerably increased the challenge on content word use, since they had to recall from memory the complete word in the context of a list or sentence. Initially, it seemed to me that there were still many students who wrote content words incorrectly.

However, the further I looked for clues, the more evidence I found that many students had fair spelling and had written and erased some words in an attempt to write accurately. On the other hand, results in this Natural Sciences test were not as good as expected since many students struggled to relate materials to their properties. Instead, they wrote about where the materials listed came from, or whether they were man-made or natural. As a consequence, only 60% of students passed the test. In order to solve this, I planned to go back to some of these contents later in the term.

When considering all comments and reflections all research assistants gave me as well as all my personal notes, I felt that this last week was a strong success for the experimental group. Overall, I could observe great improvements during tasks and witness how many students always wanted to volunteer to show others how they had practiced. I still had to rearrange many pairs for many different reasons (as on the previous sections examples) and use Class Dojo⁴⁹ to motivate students towards the use of English

⁴⁹ Class Dojo is a communication app used in the classroom to share reports with parents about behaviour or achievements. In my class, it is also used to encourage certain skills such as being able to communicate in English. More information can be consulted at: <https://www.classdojo.com>

throughout these two weeks; Nevertheless, all efforts made resolved in considerable good results and, for most students in a pleasing working atmosphere.

As for the last NLP spelling test, it is important to highlight that in this test the number of letters of each word was delivered using the three representational systems: auditory and kinaesthetic by clapping the letter, visual and kinaesthetic when drawing the dashes on their tests. I recorded the number of students who tried to guess the word before being said once. Also, I must admit that I made a mistake giving five claps instead of six in the word '*Danger*'. It was a good feeling to have some students correcting my mistake, however, as a consequence, some students wrote this word as '*Dager*'. By activating the three representational systems, students were engaged and ready to guess the word as it was perceived as a game rather than a test. However, a little mistake from the teacher's side (i.e., clapping one less letter in the word "Danger") was enough to have some students failing this word. Therefore, it seems that some students were relying on the auditory and kinaesthetic clues given to retrieve the correct number and place of letters in a word.

In what follows, I will compare the results obtained from the tests and questionnaires done during the second and fourth week. In order to do so, I will briefly analyse the results and start drawing some possible findings.

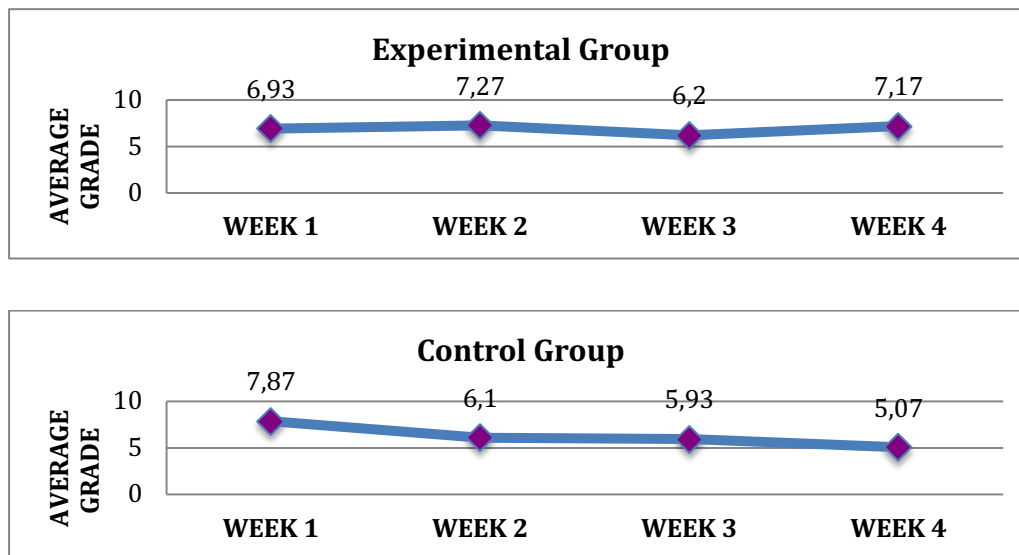
5.4. Experimental and Control group performance throughout the study

5.4.1. Spelling tests

As far as spelling tests are concerned, students in the control group practiced their spellings by copying words whilst the experimental group combined this practice with the use of two NLP spelling strategies during the second and fourth week of study. In order to organize data collected from spelling tests, the scores were divided into five categories as shown on table 7⁵⁰. The chart below shows the performance of both groups during the four weeks of practicing key content words from Natural and Social Sciences.

⁵⁰ From a one to ten scale, poor performance are scores below five points, students in the risk zone are those who got a score below six, average scores were given to students between a six and seven point five, and top performance scores were between seven point six and a ten.

Chart 5: Both group's average grade in spelling tests throughout the pilot study



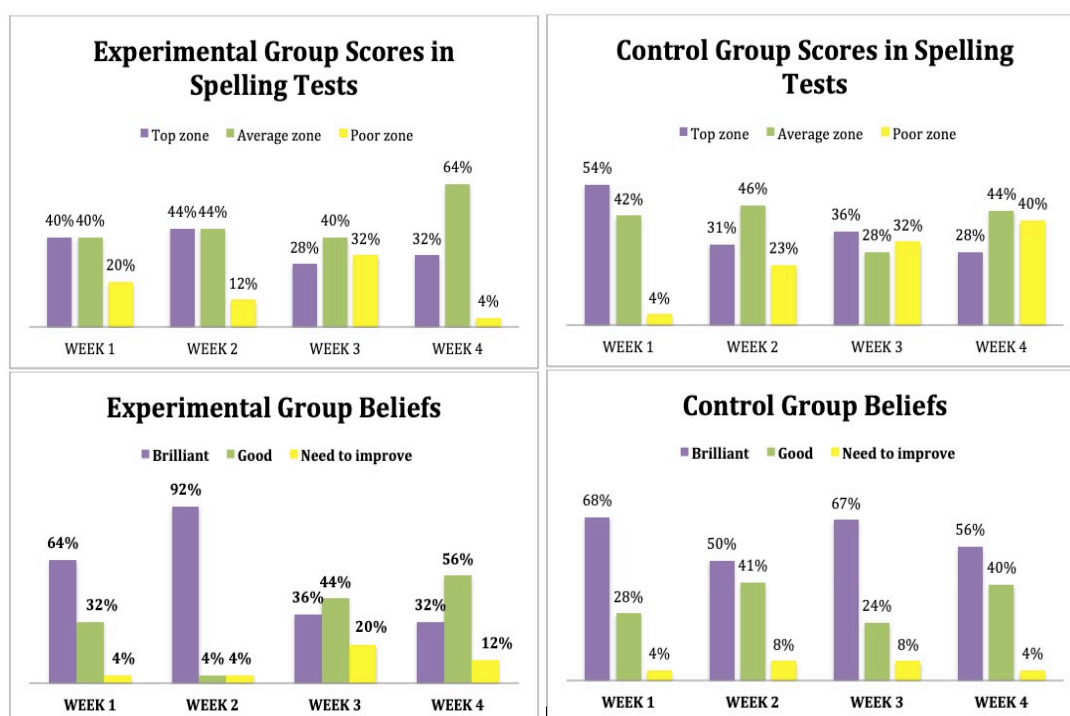
The chart above indicates that the experimental group increased good performance during the second and fourth week, in which NLP spelling strategy was reinforced in class. As commented on previous sections, the control group starts from a better position with higher scores in spelling tests (see section 5.2.2). However, after the practice of two NLP spelling strategies with key content words from Natural Sciences, results in the experimental group dramatically improved, mostly from the third to the fourth week of study. Going back to copying words for spelling practice did not help the experimental group improve results. As a matter of fact, this group's results dropped one point during the third week of study. I believe to have identified the reasons behind this worsening in performance. On the one hand, presenting a spelling test first thing on Monday morning was most probably not a good idea. On the other, copying words might have been a reason of a drop in the interest for spelling work. However, results increased once more with most students achieving higher scores in tests after the practice of the NLP spelling strategies during the fourth week.

In contrast, as seen in the chart, the control group grades decreased from the first to the second week and from the third to the fourth week consistently throughout the whole study. Their lower point reaches on week four. It is fair to mention that they took this test on the fourth session of a Friday before a long weekend. In fact, some students left school right after the test as recorded in the journal. Once again, external factors may have influenced results. However, there is no doubt that copying words did not help improving their spelling skills of key content words of Natural and Social Sciences.

5.4.2. Students' beliefs and actual performance in tests

In order to organize data collected from the beliefs test (How do you feel about your spelling this week?), the scores were divided into three categories (brilliant, good, need to improve). These three categories were connected to the scores reached in the spelling tests so that students' beliefs could be contrasted to their actual performance in the spelling tests (see table 8⁵¹). Students had to assess their spelling performance right before the spelling test. In other words, they had to indicate how prepared they felt for the imminent spelling test after a whole week of practice. The graphs below compare scores in spelling tests and the answers in the beliefs test in both groups.

Graph 11: Experimental and control group scores in spelling tests and answers in the beliefs test throughout the pilot study



In the light of the initial findings, both groups showed similar results in the beliefs test with more than half students feeling brilliant about their spelling during the first week. Although both groups showed fair results in the spelling test, the control group started from a stronger position with more spelling tests within the top performers zone and less spelling tests in the poor zone. Furthermore, the percentage of spelling tests within the

⁵¹ From a one to ten scale, students were considered brilliant when the score was within the top performers zone (successful and exceeding), good when the score was good or borderline and need to improve when the score was poor. This way beliefs and actual performance could be analysed.

poor zone in the control group exactly matched the number of students who believed they needed to improve in this group. In contrast, some students in the experimental group who believed their spelling of Natural Sciences key content words was good, failed to pass the spelling test. Thus, data indicates that students in both groups believed that their spelling of key content words was better than the actual results obtained in the spelling test after a week of practice by copying words.

During the second week that two NLP spelling strategies were implemented in the experimental group, data showed a more confident approach to spelling. Most students believed that their spelling was brilliant (92%). Even though the percentage of top performers in spelling tests was less than half, the results were highly improved when compared to the previous week and when compared to the control group's results. Thus, translating beliefs into confidence and this into motivation, these results may have dragged them to a better performance in tests.

As for the control group during the second week, data suggested that in general terms, answers in the beliefs test were a bit closer to their actual performance in spelling tests. Comparing data obtained from the beliefs tests in the first and second week, lesser students had answered brilliant and more students had answered good or need to improve during the second week. Given the fall in spelling performance in tests, this could mean that they were trying to make an effort to assess their efforts and skills towards spelling.

The third and fourth week dealt with key content words from Social Science (i.e., road safety). In the third week, students in the control group maintained a confident approach to spelling although they were not performing with such good results in spelling tests. Around 20% of students were considering their spelling of Social Science key content words was brilliant or good but failing spelling tests. Given that results in spelling tests had worsen week after week, there was no room to believe that positive beliefs were influencing good results. The reasons that made students think they were performing better than they actually were are uncertain. From students not giving an honest opinion, answering what they thought it was right to please the teacher, to simply, not being capable of assessing themselves. In addition, the possibility of students being motivated towards the learning of key content words might have been another reason for students to think they were better spellers than they actually were. Nevertheless, this possible motivation did not drag students in the control group to improve scores in spelling tests.

In the third week, students in the experimental group (alike the control group) practiced spelling copying words from a list. Interestingly, the number of students who answered brilliant in the beliefs test was lower than students who answered good for the first time during this study. However, the percentage of average spelling tests roughly matched the percentage of students believing their spelling was good and only two students answered brilliant to the beliefs test but performed to a good standard.

As for poor scores in spelling tests in the third week, both groups had 32% of tests within this range. This significant percentage of failed tests in both groups did not match the number of students believing they needed to improve. However, the experimental group was closer to this number with 20% of students believing their spelling of key content words from Social Sciences needed improvement. In contrast, the control group with 8% of students believed their spelling needed to improve (see section 5.3.4, graph 8).

In the fourth week of study, the control group remained to assess themselves as good or brilliant with a large number of students failing the test. On the contrary, the experimental group's answers in the beliefs test were again closer to students' actual performance in spelling tests. In addition, unlike the control group, some students believed their performance in tests would be worse than it actually was. In my opinion this has two possible interpretations. A possible explanation for this might be that answers were influenced by the poor results in spelling tests from the previous week. Another possible explanation is that students were learning to assess themselves thanks to peer and self-assessment questionnaires done during the second and fourth week of study that NLP spelling strategies were implemented.

Overall, no evidence was found about the correspondence among positive beliefs about spelling and actual performance in spelling tests. On the one hand, students in the control group always maintained to feel brilliant or good towards their spelling work regardless their scores in spelling tests. Data suggested that only during the second week there was a slight correspondence among beliefs and actual performance. In general terms, the control group believed they were better spellers than they actually were. These positive beliefs about their spelling did not make them perform best in spelling tests.

These results may suggest that either students in the control group were not being honest by answering what they thought it was best to answer, or they thought that handing spelling homework on time was good enough. In the end, they had done what they were asked, copy words from a list several times a week before the spelling test. Thus, they may have thought that spelling homework compliant meant a good or even a brilliant job if their spelling work was neat with good handwriting. However, after copying key content words from Natural and Social Sciences for spelling practice their scores in spelling tests worsened week after week.

On the other hand, the most striking result to emerge from the data is the change in beliefs in the experimental group after the practice of the first two NLP spelling strategies during the second week of study. Despite the difference about the great scope of brilliant answers and top performers (48% of students thought their spelling was brilliant but had average scores), spelling scores in spelling tests were highly improved within the same week. When analysing results from this group, it was suggested that this motivation towards their spelling skills could have been the trigger to a better spelling performance (see section 5.2.4). However, comparing the results obtained in tests and answers in the beliefs tests from the two groups data could not be consolidated.

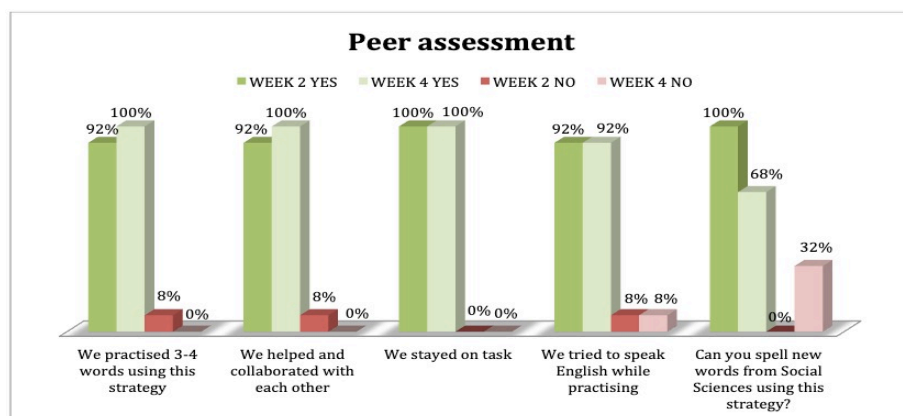
In addition to this, back to copying words for spelling practice did not improve results in spelling tests for the experimental group in the third week of study. Nevertheless, students in the experimental group were able to be more consequent with their personal efforts being able to assess themselves closer to their actual performance in spelling tests. In spite of the fact that in the fourth week another two NLP spelling strategies were practiced and results in spelling tests were again improved, answers in the beliefs tests were more stable with students performing accordingly in spelling tests.

5.4.3. Qualitative data from peer and self-assessment questionnaires in the experimental group: Week 2 and Week 4

Peer and self-assessment questionnaires were exclusive to the experimental group after the practice of the NLP spelling strategies. As a consequence, only data from the second and fourth week of study was collected. After the practice of two NLP spelling strategies in pairs, students had to complete a peer assessment questionnaire. Later, at the

end of the week, they had to complete a similar questionnaire this time individually. The results obtained from the peer assessment questionnaire for both weeks are illustrated in the following graph (Graph 10)

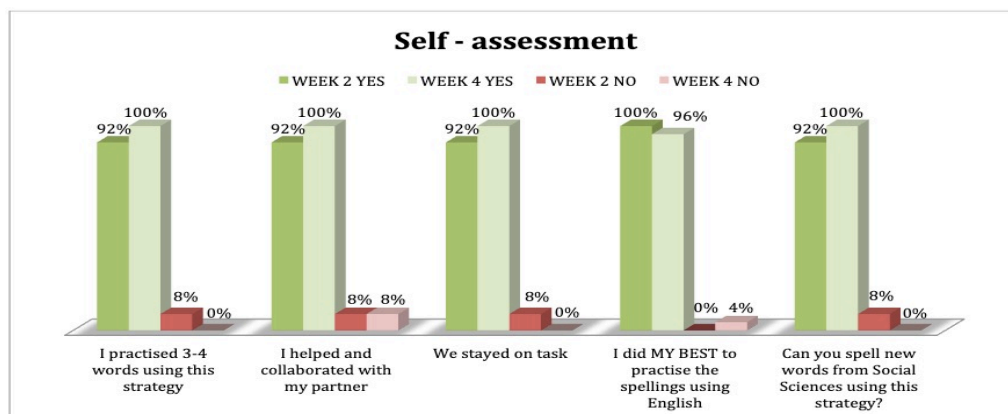
Graph 12: Week 2 and week 4 peer assessment questionnaires comparison



In the light of the results, the fourth week was the most successful week in terms of the number of words practiced in collaboration. All students agreed that they were able to stay on task and most of them tried to speak English while practicing spelling with NLP. However, the most interesting aspect of this graph was that some students found more difficult the strategies practiced during the fourth week of study. These strategies, although very similar to the ones in the previous NLP week in terms of having students visualise the word, specifically asked students to memorise the letters in a word and their position in the word (i.e., in the word “sign”, letter “g” is the third letter). Students had to remember the order of the letters, to be able to complete the empty dashes in a word they had seen written before. First, they did it in order and then, they were randomly asked the letters in the word until it was completed. In the light of students’ answers, these strategies were more complicated for them although highly effective as seen in the results of spelling tests (see section 5.3.1)

After two more days of practice, students were asked to complete a similar questionnaire, this time individually. The graph below compares answers in the self-assessment questionnaire at the end of the second and fourth week of study.

Graph 13: Week 2 and week 4 self-assessment questionnaires comparison



As it can be seen from the graph above a large number of students could practice words using NLP spelling strategies in collaboration while staying on task. However, the fourth week was slightly more successful. With regard to using English, more students felt they had done their best in the second week although some more students were struggling to use the NLP spelling strategy at the end of this week.

Regarding the ability to use the NLP spelling strategies used in class, those students who stated at the beginning of the fourth week that they could not use the strategy increase to all students being able to use them to spell key content words of Social Sciences.

Together these results provided important insights whilst implementing the NLP spelling strategies. Data obtained from these questionnaires made the researcher able to adapt the planning to students enhancing those areas that seemed weaker from one questionnaire to the next. For instance, adapting and further explaining the two new strategies used in the fourth week that at first seemed more difficult to students. However, it is interesting to note that enabling students in the experimental group to assess themselves in pairs as well as individually might have made them more able to correlate efforts and skills to their actual performance in spelling tests.

Having analysed all tests and questionnaires in the first four weeks of the study, the following section will discuss the results and findings obtained from the consolidation week. The main aim of this week was to make sure that students in the experimental group were trained to use their visual memory to retrieve the spelling of key Natural and Social Sciences content words.

5.5. Consolidation week results and analysis

Earlier in this chapter I highlighted how the ‘good spellers in English are people who visualise the word [...] and check how it feels kinaesthetically’ (Revell and Norman, 1997:41). Additionally, I maintained that the success of NLP visualisation of spelling could be proven to be effective by asking students to spell backwards since, according to Dilts (1997), something visual keeps its shape no matter if you look at it from right to left or left to right (see chapter 3). As a consequence, I decided to put these theories into practice in the fifth week so I could analyse whether my students in the experimental group were able to spell the word backwards. Thus, I designed a spelling game that followed similar steps as in the NLP strategies learnt, in which students would have to assess themselves in their ability to spell backwards.

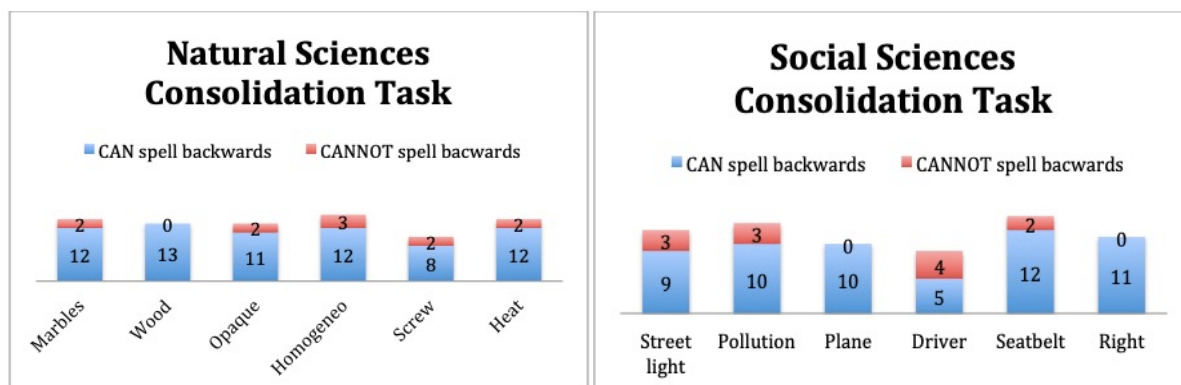
In this game, students were asked to practise in pairs a list of six words of Natural Sciences and Social Sciences respectively, using one strategy learnt. These words were no other than the six most misspelled words in each CLIL subject during this research. Later on, by playing a game, students in their peers had to assess each other in three out of the six words given. Finally, I analysed students’ rubrics in concordance to my own personal notes and the observation rubrics filled by the research assistants.

During the game, I assigned students a number between one and three depending on whether they were working in pairs or a small team of three. Number one was assigned to the strongest student in the group, so he/she could lead the rest of the group by modelling with the first example. Numbers two and three were given to the other students within the pair or group. Detective one chose a word for detective two, then he/she gave his/her partner non-verbal clues by tapping the number of letters in that word. Later, detective two had to write the number of dashes/letters the word had in a paper. Next, detective one dictated the word twice so detective two could start to spell and write the word backwards. Students were free to change roles whether it was at every word, or after the three words required. In my opinion, by giving students some choices, as the words to practise or some classroom management techniques, they become more involved and willing to take part in learning.

The game was developed in two sessions. The first session dealt with Social Sciences vocabulary and the second dealt with Natural Sciences vocabulary. The following graph shows the Natural and Social words practiced during the consolidation

task and the number of students who were able to spell these words backwards and thus, retrieving correct spellings from their visual memory.

Graph 14: Week 5 consolidation tasks results



As shown in graph 12, the three most chosen words in both subjects were: seatbelt, pollution, street light, homogeneous, marbles and heat. From what I gathered during observation, it seemed that there was motivation towards peer challenge, choosing words that they considered to be the most difficult, to assess each other.

As far as quantitative results are concerned, data showed that the majority of students in the experimental group were able to spell backwards content-vocabulary from Natural and Social Sciences. However, it is important to bear in mind that these results were based on students' peer-assessment rubrics. As a consequence, data from these rubrics was contrasted to the notes taken from the observation by the researcher and assistants. In line with this, during the first session, some peers assessed positively words that were doubtful from the observers' perspective, but overall, most peers and small teams were quite critical with their partners, especially during the second session.

With regard to Social Sciences vocabulary, the least chosen word was the less successful one (*driver*). Due to the fact that they considered *driver* to be an easy or less appealing word they did not practice it enough, which translates in having better results in more challenging words such as compound words like seatbelt. To my surprise, homophones such as *plane* and *right* that had been misspelled by a large number of students in the tests, were now a complete success, probably as a consequence of a thorough practice in class.

In the case of Natural Science, the most successful words were as well the most difficult words for students. This led me to think that this exercise was a great success as students had learnt to correctly spell what they considered the most challenging words. The least chosen word (*screw*) was again the less successful one. In fact, when monitoring the class, I could notice how some pairs did not remember the meaning of this word, which probably made it to be the least popular. In addition to this, I noticed how most students were very motivated to check each other's work and how they were more focused on being more honest than in the previous session. It appears that having students take part in their learning and assessment made students be more reflective about their efforts and performance.

Concerning other qualitative data, the most remarkable comment could be when a small group of students asked in the morning line: Are we going to continue playing or work, today? (Note taken on Monday 9th May). This note was taken after the last week of practice of NLP spelling strategies in the experimental group. This and similar comments analysed during this research verified that to a large extent, students in the experimental group perceived the practice of the NLP spelling strategies as enjoyable, fun and appealing.

In addition to this and at the end of the study, two simple questions were asked to the control group in order to gather students' opinions and ideas about copying words for spelling practice. With this in mind a small debate was conducted on Friday 13th of May 2016, in which I displayed these questions on the IWB: *What did you think about spelling homework? Does it help you become a better writer/speller?* First, we had a small debate in which students could comment with their peers one or two ideas to share them in a group of four afterwards. I gave them a mini whiteboard for each team so they could write one idea to share with the whole group. In order to facilitate debate and engage students in this activity, L1 was accepted. Most students said that copying a list of words for homework was boring, easy 'because you know what you have to do' (A. 13th May 2016), fast, or effortless. However, most of them stated that it helped them to be better spellers since 'you copy, and copy the word everyday and then you memorise it and you don't know why' (A.C, 13th May) comment to what many students agreed on.

Despite their comments, the results obtained in the tests are quite different to their perspective in some cases. The control group that was initially stronger showed a progressive decline in performance very much in concordance to the link between drilling exercises and routine work. Additionally, they showed difficulties to assess their efforts towards their spelling work during most weeks. This is probably a consequence of having a single individual questionnaire to be completed before the tests. In contrast, the experimental group was required to assess their peers and themselves regularly.

5.6. Conclusions of the pilot case study and implications for further research

The present pilot study was designed to determine the effectiveness of the NLP spelling strategy in 2nd grade of bilingual education in the spelling of key content words from Natural and Social Sciences. An initial objective of this study was to identify the key elements of the NLP spelling strategy as a means to bridge the gap between 2nd and 3rd grade of bilingual education with regard to written skills. In order to meet these goals, it was hypothesised that the use of NLP spelling strategies would not only raise spelling awareness and performance, but also that would help students becoming better spellers in a motivational and meaningful learning environment.

Based on quantitative and qualitative analysis of data gathered from spelling tests and questionnaires, it can be concluded that this research helped students in the experimental group to learn the spelling of key content words in a more effective way. In the attempt to shed light on the conclusions, in the following section, the most important findings will be explained taking the research questions as the starting point. Later, the limitations of the pilot study will serve as a bridge to understand the methodology approached in the new study (see chapter 4). Finally, some implications for further research will be addressed.

5.6.1. Conclusions and implications

In this section, I will draw some conclusions and implications based on the findings and compared to results in the literature so as to answer the research questions.

Question 1: Can the use of the NLP Spelling strategy increase the number of good spellers in content-subject classes? Is the use of the NLP Spelling strategy an effective teaching practice to raise spelling awareness and performance?

The analysis of data made it possible to argue that the use of NLP spelling strategies not only increased the number of good spellers, but also the quality of their spelling as most students were situated as good and top performers both weeks NLP spelling strategies were practiced. In addition, data showed that the number of spelling tests within the poor zone decreased within the same weeks. In addition, data obtained from the consolidation week reinforced that most students in the experimental group were able to spell backwards and thus, using their visual memory to retrieve spellings (Revell and Norman, 1997; Gabarró 2010; 2012).

These positive results are in line with those of previous case studies mentioned in the introduction (Benson and Carey, 2006) and the literature review (Carey et. al. 2010 and 2011). There are several possible explanations for these optimistic results in spelling tests. One possible explanation for this is that the use of NLP visualisation of spelling strategies in the early years of bilingual education, triggers students' desire to learn the spelling of content words since they find these enjoyable and fun to learn. Another possible explanation is that the use of different sensory channels makes an impact in the ability to memorise spellings (Benson and Carey, 2006). One more possibility is that the mere fact of having students practice and learn the spelling of content words in class by means of NLP spelling strategies improves spelling performance. The weeks NLP spelling strategies were practiced scores in spelling tests were improved with a higher number of top performers and a decreasing number of poor performers in the experimental group. In contrast, when students were required to copy words for spelling practice, scores in spelling tests in the top and average performers zone were decreased whilst scores in the risk and poor zones were increased.

However, a note of caution is due here since the weeks NLP spelling strategies were practiced in class, the spelling of key Natural and Social Sciences words were trained intensively. In contrast, when students were required to copy a list of words everyday of the week (Weeks 1 and 3 for the experimental group and during the whole study for the control group), they mostly completed the worksheet as part of their homework. Having a record of students handing over the spelling worksheet completed was enough to assume they had practiced their spellings. As a consequence, in the new study, in order to offer similar opportunities, students in the control group will be granted with some time to copy their spellings in class as a part of beginning of the day routine work as described in the methodological section (see chapter 4). This and other suggestions for improvement derived from the analysis of limitations in the pilot study that will be explained in a following section (see section 5.6.2).

One interesting finding in the pilot study was that including peer and self-assessment questionnaires provided a powerful tool to increase students' awareness towards their real efforts and their actual performance. Being involved in assessment made students in the experimental group to better estimate their spelling skills in the beliefs test, when they were compared to their actual performance in spelling tests, especially from the third to the fourth week of the study. This finding is consistent with that of Maggi (2012) who suggests that when students are fully aware of what it is expected from them they progressively get the ability to be critical about their own work.

Analysing the impact of peer and self-assessment questionnaires, several facts were noted. On the one hand, it was noted that these questionnaires possibly helped students in the experimental group give a more accurate opinion about their spelling skills in the beliefs test (see sections 5.2.4 and 5.3.4). In line with this, I agree with Maggi (2012) who suggests that promoting peer assessment encouraged students to become more independent as it provided students with tools to supervise their progress. Another factor that Maggi (2012) claims to be effective when it comes to assessment is that "criteria, weight and objectives must be very clear and, if necessary shared and released to students" (p. 57). Pursuant to this, before explaining any task, students were presented with the goals and expectations as well as the self and peer assessment rubrics in both studies (see appendix 7, 9 and 13). Accordingly, this translated into students being more able to assess their spelling skills.

On the other hand, I concluded that in my personal opinion involving students in assessment was a beneficial practise since they were more engaged in learning. Similar to this, prior studies have noted the importance of assessment (Barbero, 2012) and evaluation (Maggi, 2012) in CLIL. These studies suggest that the same way CLIL combines an integrated learning of content and language, assessment and evaluation should also reflect an integrated perspective. As a result, involving students in assessment proves to be beneficial and motivational to students (Maggi, 2012). As a consequence, for the next study, I understand that engaging students in assessment and evaluation is not only beneficial but it is a key aspect in CLIL contexts (Barbero et. al., 2012).

Question 2: Will the use of NLP strategies in the classroom increase motivation towards written skills?

In a bid to answer this question, answers in the beliefs tests were considered as the level of motivation towards written and spelling skills. This test was done after a week of spelling practice and right before the spelling tests regardless the strategy used to practice spelling (NLP or copying words). Students in both groups could answer brilliant, good or need to improve to assess their spelling skills that particular week. In the light of the initial results, both groups started with good signs of motivation towards spelling practice with most answers being brilliant or good. After the practice of spelling with the NLP spelling strategy positive answers in the beliefs tests were highly increased within the experimental group with most students feeling brilliant about their spelling. The levels of motivation were high whilst the scores in spelling tests were improved. In contrast, the control group who showed fair results in motivation with most students answering brilliant or good in the beliefs tests were not performing as good they thought they would in spelling tests.

Significant results were observed when analysing the beliefs tests and the actual performance during the third and fourth week of study. Students in the control group maintained to have a positive vision about their spelling skills but worsened results in spelling tests week after week. Meanwhile, the experimental group started to give a more accurate opinion about their spelling skills, as their beliefs were closer to their actual performance in spelling tests. As mentioned above, a possible explanation for this is that students in the experimental group were becoming more used to assessing themselves as well as others thanks to peer and self-assessment techniques used during the practice of NLP spelling strategies in class.

Consequently, whether the use of NLP spelling strategies was a way to increase motivation towards written skills is uncertain in this study from a quantitative perspective. Students in the experimental group experienced a great improvement in spelling tests thanks to the NLP spelling strategies. The results from the beliefs tests during the second week were promising implying that self-confidence and motivation might have dragged students to a better performance in tests. The results from the fourth week implied that students in the experimental group were assessing themselves closer to their actual performance in tests but some students were thinking they were worse spellers than they actually were.

When comparing the same data obtained from the control group, their positive beliefs about spelling did not help them improve their scores in spelling tests. Throughout the study, they were highly positive about their spelling being brilliant or good. A possible explanation for this is that students in the control group, who copied words from a list throughout the whole study, may have thought that spelling homework compliant was already brilliant or good enough to answer the same in the beliefs test. Although these positive beliefs were sometimes close to their performance in the initial stages, as time passed, the control group's positive beliefs were not translating into better scores in spelling tests. Hence, this study has been unable to demonstrate that the use of NLP spelling strategies increased motivation towards written skills from a quantitative perspective with the beliefs test.

Nevertheless, as far as qualitative data is concerned, one interesting finding was that some students in the experimental group decided to create their own bilingual picture dictionary to practice the spelling of key content words. Hence, they were motivated to continue learning key content vocabulary from Natural and Social Sciences on their own. In addition, other comments from students in the experimental group suggested that they perceived the practice of the NLP spelling strategy as a game rather than a chore. From this perspective, it can be argued that for some students NLP spelling strategies and learning how to accurately spell key content words were a motivation for independent learning.

As commented in previous sections, spelling's ultimate objective is to learn how to learn new words (Dilts, 1997) (see section 3.3). Hence, students might have been prone to find their own ways through learning thanks to learning how to learn the spelling of

words with NLP. In addition, results from the peer and self-assessment questionnaires indicated that almost the totality of students in the experimental group were able to stay on task whilst using the NLP spelling strategies. Consequently, it can be concluded that they were engaged and motivated towards spelling practice.

Nevertheless, the conclusions and implications reported in this pilot study should be considered in the light of some limitations. Accordingly, the next section will illustrate the most important limitations and some methodological issues that were not considered in the pilot study. These limitations were the basis to improve the methodology of the main study (see chapter 4) and the new analysis (see chapter 6).

5.6.2. Limitations and methodological issues

In this section, I will present the most important limitations along with the methodological issues that were found during the analysis of data. Owing to this analysis, those methodological aspects that proven ineffective or insufficient in the pilot study were reconsidered and improved for the new and main analysis. Most of these aspects were explained in detail in a previous chapter (see chapter 4). However, the decisions to alter or modify the methodology of the new analysis rely on the study of the limitations and methodological issues from the pilot study. Consequently, this section identifies and explains the most significant limitations (i.e., time constraints and sample size among others) whilst presenting alternatives for the betterment of the new study.

5.6.2.1. Time constraints

The first and most important limitation was time constraints. Even though this research was carried out for five weeks, longer time would have given me the opportunity to analyse results in a more exhaustive way. Moreover, avoiding times of the week that were less favourable for students (first session Monday morning/last session Friday afternoon) would have possibly given me different results. More time would have also facilitated the application and practice of these and further strategies, so I could have analysed which strategies work best and why in a thorough manner.

During the pilot study, students in the experimental group were taught two different NLP spelling strategies in the same week. This was a bit of a challenge for both,

students and teacher. On the one hand, students often showed confused, as they did not have time enough to learn how to use one strategy proficiently when a new one was already introduced. On the other, I felt a bit overwhelmed, as there were way to many new strategies and classroom dynamics to be introduced and data to be collected in a very short time.

As a consequence, I had to constantly rearrange my weekly planning in order to be able to actually teach the contents required in each subject. As a matter of fact, students had to face new words a few days before starting the unit in Social Sciences. Even though some students felt the desire to learn the meaning of these words beforehand, as noted in the research journal, some other students felt anxious about practicing words out of the context of the unit. In a bid to reduce this possible anxiety, in the new study I changed the practice of spelling by giving a list of words related to the content taught in a day (i.e., five words). This was done in order to shorten the list of words to practice whilst giving students the opportunity to choose which ones they wanted to practice in pairs.

Regarding the length of the study, the new case study examined results in the first four units of Natural and Social Sciences respectively. Hence, the study started at the beginning of the school year and finished at the end of the second term (i.e., March). That is to say, six months of research that was integrated throughout the CLIL curriculum. During this time, I put into practice two out of the four NLP spelling strategies conducted in the pilot study. The choice of the strategies for the new study was the product of deeper reflection on what strategies worked best for students or were easier to follow and learn (see section 4.2.1). Consequently, the most preferred strategy and the most challenging one were chosen for the new study. Furthermore, at the beginning of the Natural/Social Sciences unit, students in both groups were given the list of key terms and their translation to Spanish⁵². This way, students anticipated the language of learning for a particular content and had a guide to rely on when trying to understand new contents.

One more limitation related to time constraints was that taking periods from the Sciences class to teach NLP spelling strategies made the teaching of contents a lot more difficult as there was a constant swift among teaching spelling and teaching content and language during the pilot study. Despite the good scores in spelling tests, students'

⁵² The bilingual department of this school takes this action as an agreement in the *Programación General Anual* to ease the learning of key content terms in English and Spanish. This was done to palliate parents' complaints about this aspect.

performance in content subjects was affected by the amount of time invested in the teaching of the new strategies. As commented in previous sections, only 60% of students were able to pass the Science test and thus, these results indicated that the practise of the NLP spelling strategies in class did not improve students' performance in content subject tests (see section 5.3.6). The main reason behind this fact was that the teaching of the NLP spelling strategies and the classroom dynamics and instructions were time consuming.

Given that the LOMCE Act grants English with a larger amount of hours per week (5) than Natural and Social Sciences (1.5 hours per week respectively), and that I am the same teacher for all three subjects (plus Art), the time devoted to spelling practice in class for the new study took time from the English class in both cases. Consequently, the decision to take time from the English class and not from the Sciences class in the new study was based on the poor results in content subject tests during the pilot study.

Lastly, another limitation that required time and thoughtful planning was that as a teacher in a bilingual school, I was bound to comply with one of the most important rules⁵³: use English as the vehicle to communicate, integrating content and language, whilst promoting its use among students with activities that enhance communication in the foreign language. In order to meet this rule, time was granted to allow students understand instructions and learn ways to interact with others in English. In line with this, several scaffolding techniques such as language support displayed on the board were carried out so that students could use English as the vehicle to learn contents (NLP spelling strategies). These and other necessary aids to make learning in the foreign language accessible to students always required additional time. In my personal opinion, this was one of the most important challenges that I had to face as a CLIL teacher, trying to integrate language and specific content related to the use of the NLP spelling strategies. This indeed extended the time devoted to implementing this study negatively influencing results in content subjects.

⁵³ These rules and regulations are defined by current legislation in bilingual schools in the Community of Madrid. *ORDEN 5958/2010, de 7 de diciembre, de la Consejería de Educación, por la que se regulan los colegios públicos bilingües de la Comunidad de Madrid. (I)*. Available at: <http://www.madrid.org/>

5.6.2.2. *Sample size*

The pilot study was limited to a sample of 50 students of 2nd grade in a CAM's bilingual school. In addition, students in the experimental group alternated their spelling practise by copying words from a list the first week a new Natural/Social Sciences topic was introduced, and practising spelling with NLP the following week. This proven not only not to be effective in terms of spelling performance, but also discouraging for students who dropped interest in practising their spellings. As Coe (2002) explains, “quantifying the size of the difference between two groups” (p. 12) is useful to measure the effectiveness of a specific action taken in Education or Social Sciences. Hence, the existence of a control group that enables the researcher to keep record of the standard does not make necessary to further study the same variables with the experimental group.

In addition to this, in the pilot study, only two weeks were devoted to NLP spelling strategies plus a consolidation week that aimed at assessing the ability to spell backwards in the attempt to compel students to retrieve spellings from their visual memory. Thus, the sample size is limited not only to the specific participants of this study, but also in terms of the time devoted to spelling practice with NLP. All in all, in the pilot study data about the efficacy of the NLP spelling strategy could only be gathered in three out of the five weeks in which this study was conducted.

As a result, in the new study the experimental group was always encouraged to use NLP spelling strategies to practise their spellings and were never asked to copy to learn the spelling of a word. Conversely, the control group copied words from short lists throughout research and was never introduced a NLP spelling strategy to learn the spelling of key content words.

5.6.2.3. *Pairing students*

Another limitation in the pilot study was related to pairing students. Although most students stated to like working in pairs, there were some pairs that needed to be reorganised in many occasions. I suggested paying special attention to the assigned pairs from session to session, to be able to adjust students so they felt comfortable working with each other. As commented in previous sections, the participants of the pilot study were a challenging group in terms of behaviour and self-control (see section 5.1). Consequently, I proposed to work on social skills while making students aware of the benefits that pair

and group work have for their learning.

In this sense, as commented when analysing the context of this study (see section 4.1.1) this bilingual school has tried to create a respectful environment with initiatives that make students become socially competent⁵⁴. As a consequence, my hope is for students to have a better understanding of the benefits of working with one another in the new study. Given that working in pairs empowered performance and motivation, the new study remained to offer opportunities for pair work whilst practising the NLP spelling strategies.

5.6.2.4. Methodological issues

In addition to the limitations commented above, there were several issues that were not addressed in this study. For instance, it would be worth to analyse how learning styles affect students' abilities to produce accurate spellings or whether students' beliefs and perceptions about NLP spelling strategies or copying words translate into similar results in spelling tests. Subsequently, the following is a brief description of the new issues addressed in the main study that are the consequence of the deep analysis of limitations and methodological issues in the pilot study.

What learning styles have to say in spelling: Is it true that visual learners are better spellers?

As commented in the literature review, visual learners are the most accurate spellers since they see the word in their minds (Grinder, 1991; Revell and Norman, 1997). Given that the NLP spelling strategy deals with the visualisation of spelling it is fair to think that those students whose preferred learning style is visual may be more inclined to perform well in spelling tests. As a consequence, in the new study students in both groups will be asked to complete the Learning Channel Preference Checklist (LCPC, adapted from O'Brien, 1990) with the purpose of identifying the three strongest V-A-K learners in each group. Their results in spelling tests were compared in each group to find out whether learning styles and the use of specific spelling strategies (NLP or copying words) affect students' ability to produce accurate spellings.

⁵⁴ This school was awarded with the *Convive* Prize 2019 for creating a more respectful environment in the school.

What students believe about spelling practice: Do students believe that NLP strategies are effective?

Another issue that was not addressed in this study was whether students perceived NLP spelling strategies as effective. In the pilot study, students had to answer a very simple question (How do you feel about your spelling this week?) in what I called a beliefs test. This question proved to be too general since it did not specifically ask students about their beliefs while learning the spelling of words by means of copying words or NLP strategies. In addition, in order to answer this question students had to choose between brilliant, good, need to improve. A student can feel brilliant, good, or need to improve for a quite number of reasons. However, by being more specific, for instance, finding out what students believe is efficient (or not), could be compared to their actual performance in spelling test in the new study. As a consequence, the beliefs questionnaire was not only improved but completely changed in the new study.

Having reviewed many studies that focused on the role beliefs have when learning a foreign language in general, and learning spelling in particular (see chapters 2 and 3,) in order to keep a more scientific approach to the beliefs questionnaire, I decided to include an already validated test that had been used in a different study. This is the attitudinal questionnaire from Nahari's and Alfaddha's (2016) study on the visualisation of spelling. As commented in previous sections, the original questionnaire was adapted and simplified in terms of language and number of statements due to the young age of students (see 4.5.4 section). Following a 5-point Likert scale format (i.e: strongly agree, agree, uncertain, disagree and strongly disagree), several statements were presented to assess whether students believed that a particular statement was true to them. For instance, taking data from the statement "I believe that using this strategy is fun and interesting", some insights could be gathered about the levels of motivation and engagement towards this activity. Another example could include studying data from the "I think this strategy helps me to learn the spelling of difficult words in English" statement to observe students' beliefs about the efficacy of NLP strategies (or copying words in the control group).

Furthermore, chapter 3 in the literature review (see section 3.5) concluded that when students see themselves as good spellers this belief might permeate the learning of the rest of the skills in the foreign language. As an example, the new beliefs questionnaire analyses the results in this particular idea (i.e., "I think this strategy helps me to be a good

speller”). A student who believes that the NLP spelling strategy helps him/her to be a good speller is initially more likely to use it to perform well in spelling tests. On the contrary, a student who answers no to the same statement may use different strategies to recall spellings and have different results in spelling tests.

Whether the results are better or worse in each case is still unknown in this particular study and will not be analysed in specific students but as a group. However, this new beliefs questionnaire brings new and richer opportunities in assessing students' beliefs towards the learning of spelling. Therefore, the answer to this questionnaire not only provided with qualitative data as it is based on students' answers, but also data that can be translated into quantifiable results that compared to their scores in the spelling tests can give interesting results to analyse.

Incorporating more complete peer and self-assessment rubrics to the study: Will the use of peer and self-evaluation questionnaires make a difference regarding students' self-concept and beliefs?

Although a yes/no questionnaire is simpler for students at a young age, one more limitation of the pilot study is that this type of questionnaire for peer and self-assessment was too restrictive. Furthermore, these questionnaires did not focus on the use of the spelling strategies applied to learn spelling of content words (copying words or NLP) nor even the efficacy of this action. Even though the answers in these questionnaires were indicators of students being more able to assess themselves according to their actual performance in spelling tests, a more specific, measurable and accountable evaluation tool was needed in order to assess the learning, use and efficacy of the spelling strategies (copying words or NLP).

Consequently, the new study incorporates a new way of self and peer assessment in the form of a rubric. Similar statements to the ones presented in the pilot study were included (i.e., I/We can stay focus and on task while collaborating with my partner or I/We can speak English while on task). More specific statements related to the use of the NLP spelling strategy (i.e., I can use the visual spelling strategy to spell words from Natural and Social Sciences in English) were maintained. In contrast, other statements such as “I practised 3-4 new words using this strategy” were omitted, as they did not give any relevant data to the analysis. In substitution a statement related to the efficacy of the strategy was incorporated (i.e., From the list I practised, I can correctly spell...).

Furthermore, a statement related to students' beliefs towards written tasks in English was added (i.e., I can write in English words that I could not write before). Students using this rubric had to assess themselves or their partners (depending on the activity) by reading the statements aforementioned and choosing from a 1 to 5 Likert score (see appendix 7).

Spelling tests based on NLP: Was it too much help for students in the experimental group?

Regarding NLP spelling tests, NLP offers a visual strategy with simple steps to follow but there is not a standardised test that focus on assessing its efficacy with more than one word. In general terms, the NLP spelling strategy focuses on one word at the time that it is mentally practised until the mental image of the word is the exact representation of the written word. The lack of a formal NLP spelling test that included more than one word, as it would be done in a regular whole-class spelling dictation test, made me include some of the elements practiced in class during the learning of the NLP spelling strategies.

In the pilot study in NLP spelling tests, before a word was dictated, students had to focus in guessing the number of letters in a word. For instance, the teacher snapped fingers as many times as letters in a word so students could write the number of snaps they had heard. Thus, they knew the number of letters they needed to write before the word was dictated. Thanks to this, they could check whether the word they heard, saw in their minds (activating the visual channel) and written in consonance, had the correct number of letters. Another similar example followed after the practice of the second NLP spelling strategy was having students to draw dashes in the paper in preparation for the word that was going to be heard. This way, students transcribed the words they saw in their minds by completing the dashes of the word that was dictated.

All support given in NLP spelling tests was done in the attempt to design a test that could measure spelling performance whilst offering some of the additional aids that were practised in NLP spelling strategies. For instance, by making use of V-A-K recalls before dictating the word. As there is no other standardised NLP spelling test for multiple words to my knowledge, this was my effort to offer a dictation of words, that was somehow NLP validated for the experimental group. Nonetheless, it could be argued that the positive results in spelling tests were due to the support given in spelling tests and the intensive spelling practice in class for students in the experimental group.

Therefore, in the new study the experimental group was also assessed by means of a traditional dictation of words and the same amount of time to practice spelling was devoted in both groups of participants. Furthermore, a dictation of 12 key content words for each Science unit was conducted at the beginning of each Natural and Social Sciences unit. In the pilot study, students were asked which words they thought were more difficult to spell so that I include them for spelling practice the following week. By doing a pre-test before giving any treatment to the groups I could select the words that proven to be more difficult so that I could give them preference for spelling practice in class. As a result, I could avoid making random choices that sometimes translated into students practising words they already knew how to spell. In addition, this test also served as a pre-test to compare results before and after two weeks of spelling practice by copying words (control group) and by means of NLP spelling strategies (experimental group) in each Natural and Social Sciences unit (see chapter 4).

To conclude this section, once the main limitations and suggestions for improvement derived from the analysis of results in the pilot study have been established, possibly the main weakness of this study is that it is limited by the lack of specific sources that address NLP spelling strategies to teach skills or sub-skills of the language such as spelling (Farahani, 2018).

Furthermore, notwithstanding the relatively limited sample, this work offers valuable insights about the efficacy of NLP spelling strategies for the learning of key content words in CLIL contexts. Excluding these limitations, there are grounds for believing that NLP spelling strategies were beneficial to students, so as to make them improve the spelling of content words in an effective and motivational way. As a result, some betterment derived from the analysis of limitations was implemented in the new study.

5.6.3. Suggestions for further research

Several questions still remain to be answered in the new and main study of this dissertation. In the belief that NLP spelling strategies raised spelling awareness and performance of students in the experimental group during the pilot study, the new analysis worth new questions and further examination. As a consequence, some suggestions could be taken into account for future lines of research.

First, I would like to involve other teachers of English and Spanish in order to further investigate different professionals' views and groups performances in different subjects. By doing this, this research would turn into a valuable experience for the whole school's community and would enhance an interdisciplinary approach to learning. Given that bilingual schools are often organised in having students rotate from the English to the Spanish class, the idea would be to involve the Spanish language teacher to practice the NLP spelling strategy in those spellings that tend to be complicated to students. This way, it could be proven whether the visualisation of spelling strategies such as the one proposed by NLP, is effective with Spanish language.

In addition to this, I would like to further investigate how beliefs influence students learning through a foreign language. From my perspective, students who see themselves as good learners tend to be more motivated towards learning. By influencing students positively about learning a foreign language, it can be an open door to a more relaxed atmosphere and possibly better results.

In conclusion, supporting the idea that NLP spelling strategies would not only raise spelling awareness and performance, but also would help students become competent spellers in a motivational and meaningful environment, the pilot study showed that NLP visualisation of spelling, provided students with new challenges to practice content-words spellings, rather than copying words until they get it right. Therefore, NLP spelling strategies aided students to learn effectively while sharing experiences in a relaxed and pleasant environment. These positive results gave me a boost of energy to continue working with NLP spelling strategies with students in the control group once I finished the pilot study, and to bring into play new ways of including these strategies on a regular basis.

In the chapter that follows, I will present the analysis of data of the main study during the first term of 2019/2020 academic year in the same school with different groups of students. This chapter will describe the examination of data that will lead to the principal findings and implications of this doctoral dissertation.

CHAPTER 6. MAIN STUDY TERM 1

In the chapter that follows, I present the principal findings of the main investigation. These analytical procedures and the results obtained from them are described in the following sections. For this purpose, I will first describe the participants of the main study and second I will analyse the results of all tests and questionnaires carried out each term.

6.1. Participants

The section below describes the two groups of students in 2nd grade of primary education in a school in the *Comunidad de Madrid*. I taught them English, Natural and Social Science and Art to both groups in eight sessions per week. Time wise, this was about seven hours and a half of foreign language exposure a week for each group. This time was divided into four complete hours for English, two hours and forty-five minutes for Natural and Social Science, and one session of forty-five minutes of Art per week. Group 2A was the control group with 25 students (15 boys and 10 girls) and group 2B was the experimental group with 26 students (17 boys and 9 girls). Both groups were characterized by a great diversity of students and learning paces. In order to have a broader idea about the groups of participants, Table 9 illustrates the number of students with special educational needs or specific learning considerations.

Table 9: Students with specific needs in each group

GROUP	TOTAL OF STUDENTS	ASD	DEVELOPMENTAL DELAY	DYSLEXIA	ADHD	STUDENTS AT SOCIAL RISK	STUDENTS WITH PENDING CLIL SUBJECTS FROM THE PREVIOUS YEAR	Total number of students with special needs or considerations
A	25	1	1	2	1	2	0	7
B	26	2	1	1	1	2	2	9

From the table above, it can be seen that by far the greatest demand is for group B. In these groups there were two students with Autism Spectrum Disorder (ASD, henceforth) both of them diagnosed during infant education. In group A, he was in my class most of the time with the help of other specialised teacher (i.e., a social integrator) who usually translated Science contents to him. He loved English and had a fair command of basic language skills. However, he had some problems to communicate with other people in any language. Despite this, he followed the same curriculum and was able to

reach learning outcomes, competences and contents even better than other students without any special need. Exams were adapted to this student too. He had plenty of visual aids and pictograms to convey meaning besides sequencing activities and instructions in simple steps. In spite of these aids, he followed the curriculum as any other student and never left my class. Thus, he was part of the study as any other student in this group.

In group B, the other ASD student could not follow 2nd grade curriculum and had a strong curricular adaptation in English and studied Science in Spanish. He was a new arrival and only came to the English class once a day with his group. He usually spent the rest of the day in a different class with a small group of students and two specialised teachers in helping students with ASD. For all the above mentioned, this student could not be considered as a participant for this research. Finally, there was a third student diagnosed with ASD disorder at the age of 4. However, this student only required methodological adaptations, such as giving him some more time to finish tests or sequence activities in different pages. He could follow 2nd grade curriculum at ease with these aids and thus, he was considered for this study.

Regarding students with developmental delay, these were twins each of them in a different group. They were premature babies, born at 24 weeks, and presented strong delay in learning and understanding. Even though they worked minimum content requirements in English, Science contents had to be translated to them⁵⁵ so they could follow the class. Therefore, I did not consider these students as part of the analysis.

Concerning students with dyslexia, there were two students diagnosed in 2A and one student in 2B. One student from each group was diagnosed throughout the academic year in which this study was carried out. The other student in 2A had been previously diagnosed and had repeated first grade. Since dyslexia is a disorder that deals with reading and writing, despite their difficulties, I decided to keep these students in the analysis of results in order to find out whether this particular spelling strategy helped them to achieve better results. These students also counted with methodological adaptations such as oral tests, written tests in pages of different colours and sequenced activities (each in one page).

⁵⁵ One of the possible measures my school takes when having learning difficulties is to translate contents to enable understanding. Even though contents and some of the instructions in tests are also translated, students have to answer questions in English. This is done with the right support and in accordance with their level of the foreign language.

There were also two students diagnosed with Attention Deficit and Hyperactive Disorder (ADHD), one in each group. These students followed 2nd grade curriculum but had some methodological adaptations such as being allowed to move through the class with regular class jobs. In addition to this, two other students, one in each class, were victims of social risk due to their situation at home. In 2A, this student had the help of a social worker that went to her house every day after school for about three hours to help her with schoolwork and prevent her from mistreatment and abandonment. Despite this situation, she always had fair results in all subjects. The other student in 2B stayed in the school longer hours so he could be helped with schoolwork. He had also repeated first grade but it did not seem that this measure had helped him to gain learning such as proper reading or writing.

Further to this, two students in 2B had English or Science pending from the previous year. As a consequence, they had make up work to complete that one of them failed to comply. This added to the fact that he also failed Spanish and English from 2nd grade made him repeat this year. However, they both were participants of the study. It is also worth highlighting that there were a couple students in each group that had delicate situations at home since they were being victims of open wars among their parents fighting for custody. These fights also affected their teachers as they tried to make them part of their problems to the point of having several meetings with the family, the head teacher and the social worker.

Notwithstanding all these difficulties, my class did not count with a support teacher due to a lack of resources in the bilingual programme. In the lessons that we did count with the help of language assistants, I doubled efforts to cater for the diversity in my groups. Taking all characteristics into consideration, three participants were excluded from the study on the basis of their difficulties, especially in Science subjects that were mainly taught in Spanish. Therefore, a total number of 24 students in the control and experimental group were compared.

6.1.1. Student diagnostic assessment

It is also important to take into account that from second grade of primary education an initial assessment in the instrumental subjects (Spanish Language, Maths and English in bilingual schools) is prescriptive at the beginning of the year. This test contains essential learning from the previous year and it includes exercises from all language skills. There were two listening exercises with simple descriptions and actions in which students had to choose among different options represented with images. In addition to these exercises, there were three different reading and writing exercises in which they had to choose the correct word in a sentence among two options with basic vocabulary or grammar (e.g., his/her or prepositions), read sentences and answer yes/no and answer simple questions (e.g., “Yes, he is”/ “It’s a skateboard”/ “He can ride a horse”) all of which were based on images. Finally, there were two speaking exercises, based on images, in which students had to answer simple questions (e.g., “What’s this?” “What’s s/he doing?” “Where is the notebook?”). The table below shows results obtained from both groups, control and experimental in the English test.

Table 10: results obtained in the English diagnostic assessment.

INITIAL ASSESSMENT SEPTEMBER 2019 ENGLISH TEST	GROUP A (control)	GROUP B⁵⁶ (experimental)
Less than 5 points (not passed)	9	9
Between 5-6 points (risk zone)	2	4
Between 6-7 points (average zone)	4	4
Between 7-8 points (lower successful)	2	5
Between 8-9 points (upper successful)	3	3
Between 9-10 points (exceeding)	5	0

From the table above, we can see that both groups show the same amount of students not passing the test, average zone and upper successful scores. Nevertheless, closer inspection of the table shows that the number of students in the risk zone doubles in the experimental group. This implies that the experimental group was a more challenging group and thus had more difficulties with the foreign language. Finally, even though the number of students in the upper successful score is greater in the experimental group, it is

⁵⁶The ASD student in this group did not do the diagnostic assessment due to his particular curricular adaptations.

quite revealing that there were no students with exceeding scores in the experimental group. Therefore, the control group reported significantly better scores in the initial assessment test, due to a greater number of students in the exceeding scores, as well as a lesser number of students in the risk zone. In general terms, this means that the control group was initially better at English language than the experimental group. In fact, difficulties in group B is what made me choose them as the experimental group. This way they could potentially benefit from an effective spelling strategy that would translate into better results in the foreign language.

6.2. Results and analysis of the first term

The timeline of the main study was spread over two terms in which the key content vocabulary of two units of Natural and Social Science respectively were investigated. The following table illustrates the contents of each particular unit, the timing and the dates in which these units were conducted during the first term.

Table 11: Units of research

TERM 1		
UNIT	DATE	DURATION
NATURAL UNIT 1 (MY BODY)	October 2019	3 WEEKS
SOCIAL UNIT 1 (OUR TOWN)	Oct/Nov 2019	3 WEEKS
NATURAL UNIT 2 (FOOD AND HEALTH)	November 2019	3 WEEKS
SOCIAL UNIT 2 (WIND AND RAIN)	December 2019	3 WEEKS

As it can be seen from Table 11, I alternated the teaching of Natural and Social Science units. With reference to timing, units during the first term took a little longer than the second term. This is because at the beginning of the year it always takes a little longer for young students to get used to materials and methodology. Additionally, in each term, one different NLP spelling strategy was put into practice although both followed a similar structure. In the main study I adapted two strategies taken from Grinder (1991: 118) (see chapter 4). All strategies used required students to use their visual memory in a set of steps and monitored instructions. I gave a name for each strategy so as to avoid using the term NLP with students and as a way to enhance motivation. The first strategy used in the first term was named “I can see words in my mind” and the second strategy used during the

second term was named “Playing crazy hangman”⁵⁷. Therefore, results can be analysed comparing which strategy worked best.

The sections that follow aimed to answer the research questions established in the introduction and the methodology of this study (see introduction and chapter 4). As a result, I have organised the different sections accordingly. In order to find out whether NLP spelling strategies increased the number of good spellers in content-subject classes the first section deals with results of spelling tests (see section 6.2.1). As a means to analyse whether positive beliefs towards a particular spelling strategy brought about any change in spelling performance, beliefs tests were compared to the results in spelling tests (see section 6.2.2). The following sections were devoted to the analysis of Natural Science (see sections 6.2.3 and 6.2.4) and Social Science (see sections 6.2.5 and 6.2.6). With the intention of analysing the role of learning styles in the ability to produce spellings, results in spelling tests were compared in a selection of visual, auditory and kinaesthetic students in each group (see section 6.2.7). Furthermore, in the interest of gathering students’ opinions and ideas throughout the training process, self and peer assessment questionnaires were analysed so as to have other qualitative data (see section 6.2.8). Given that the characteristics of these groups made possible to analyse whether these spelling strategies (copying and NLP) were helpful to students with dyslexia an especially dedicated section was included at the end of the first term’s analysis (see section 6.2.9).

6.2.1. First Term: Spelling tests

As commented in previous chapters (see chapter 4), a dictation of 12 key content words was conducted at the beginning of each Natural and Social Science unit. This was done in an attempt to analyse which words proven to be more difficult to students so they could be trained by means of NLP spelling strategies in the experimental group and by copying words in the control group. Likewise, this test would give me an idea of those words that did not need further practice when half or more than half of the group had it right. However, results in this pre test during the first term showed a great lack of content vocabulary. Thus, these pre tests did not give special insight other than assessing the same words once the Science unit was finished in a final test. Throughout the units, the

⁵⁷ As already mentioned in chapter 4, the strategies used in the main study were the result of the analysis done during the pilot study in which 4 strategies were put into practice. The most popular strategy during the pilot study was implemented in the first term and the most challenging strategy was implemented in the second term.

vocabulary worked each day of practice was in relation to the content at hand. Thus, all of the new vocabulary in a unit was practised at some point of the unit. With regard to the final spelling test taken at the end of the unit, all units except the first unit of Natural and Social Science included three extra words (15 in total) so I could include in the test some other words that students had practised throughout the unit. Pursuant to this, the vocabulary practiced was selected in accordance with the list of words proposed as language of learning⁵⁸ in the textbook. The table below displays the words that were assessed in the final spelling tests for each unit during the first term.

Table 12: List of Natural and Social Science words assessed in the first term

TERM 1 WORDS	
NATURAL UNIT 1 (MY BODY) October 2019	SOCIAL UNIT 1 (OUR TOWN) Oct/Nov 2019
1. ANKLE	1. AIR
2. BICEPS	2. BUILDING
3. PELVIS	3. LAND
4. SIGHT	4. PEDESTRIAN CROSSING
5. SKELETON	5. PLANE
6. SPINE	6. SCHOOL
7. TEENAGER	7. SEA
8. THUMB	8. STREET
9. TOES	9. SUPERMARKET
10. TRICEPS	10. SWIMMING POOL
11. WOMB	11. TRAFFIC LIGHT
12. WRIST	12. WALK
NATURAL UNIT 2 (FOOD AND HEALTH) November 2019	SOCIAL UNIT 2 (WIND AND RAIN) December 2019
1. BREAKFAST	1. ATMOSPHERE
2. BUTTER	2. BREEZE
3. CHEESE	3. GALE
4. DINNER	4. HAIL
5. FOOD	5. HIGH
6. HEALTHY	6. LOW
7. ONCE	7. MEASURE
8. PYRAMID	8. WEATHER
9. SCHOOL LUNCH	9. RAIN GAUGE
10. SWEET	10. TEMPERATURE
11. TWICE	11. THERMOMETER
12. VEGETABLES	12. WIND VANE
13. CEREALS	13. PRECIPITATION
14. GRAPES	14. ANEMOMETER
15. MEAT	15. WEATHER FORECAST

⁵⁸ According to Coyle, Hood and Marsh (2010) language of learning is the language that makes accessible new concepts and skills connected to a specific topic. In their view, teachers need to be aware of these linguistic demands beforehand to make accessible knowledge in the vehicular language.

In order to organise data collected from the spelling tests, the scores were distributed into five categories as shown in the table below:

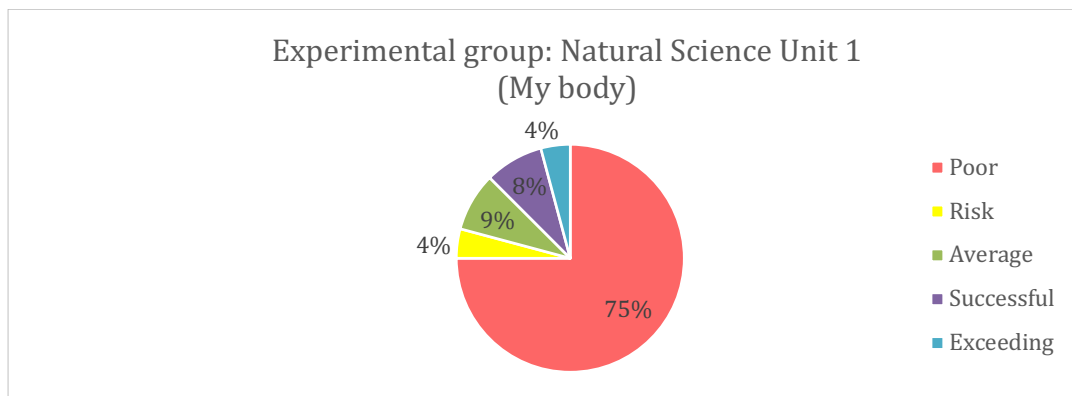
Table 13: Spelling test scores categorization in the main study

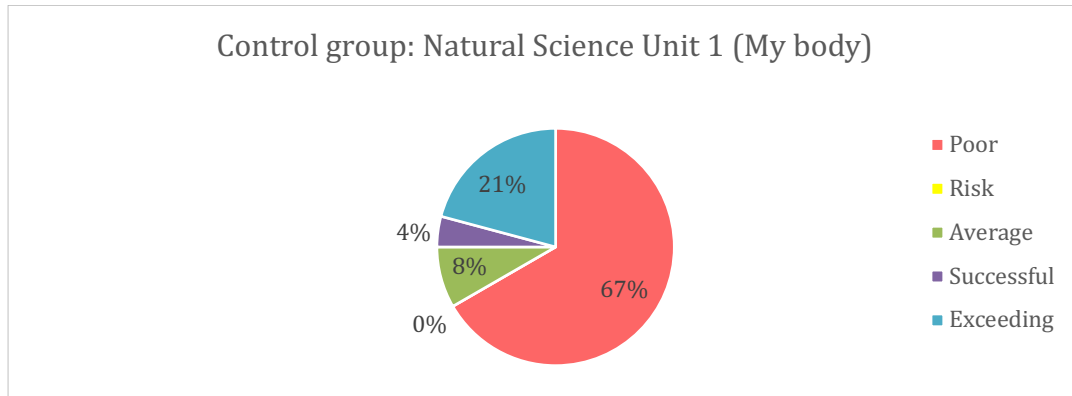
Score	1 to 4,9	5 to 5,9	6 to 7,5	7,6 to 8,9	9 to 10
Data	Poor	Risk	Average	Successful	Exceeding

Results obtained in each final spelling test were analysed taking the above table as reference. To compare the difference between the control and the experimental group, it is worth pointing out that the control group was asked to copy a list of words (3 to 5 times each word/ 10 minutes of morning work) whilst the experimental group was introduced to an NLP spelling strategy (e.g., I can see words in my mind in the first term) during the first week in two complete sessions and got to practise twice a week for a period of 30 minutes (see chapter 4). Students’ performance was assessed through a spelling dictation done after two or three weeks of practice depending on how long the teaching of contents took in each unit.

The chart below shows the breakdown of spelling test scores after one unit of practice copying key content words from Natural Science in both groups of participants. This test was performed the third week of October in 2019.

Chart 6: Spelling tests scores: Natural Science Unit 1

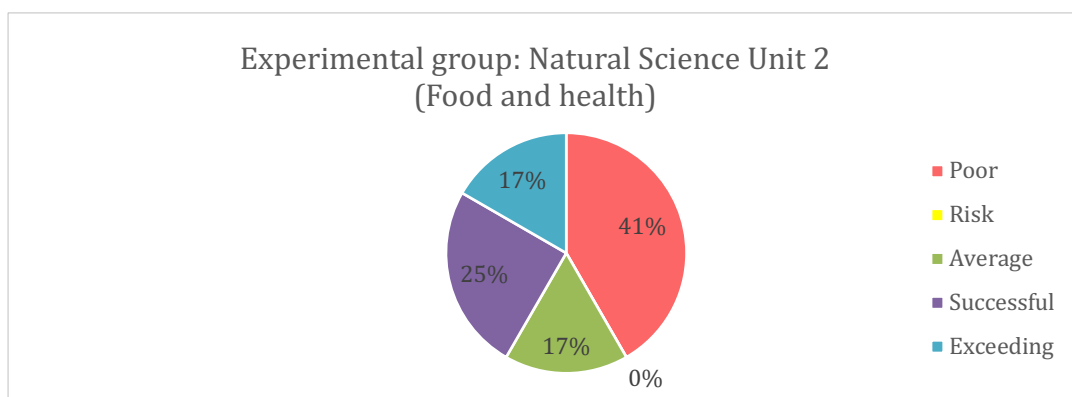


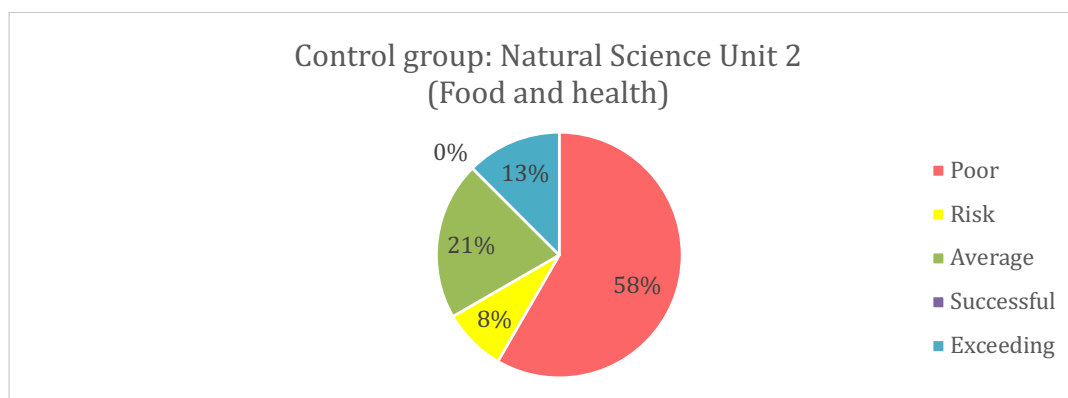


From the pie chart above we can see that, within the control group, there were 67% of tests in the poor zone and there were no tests in the risk zone. For their part in the experimental group, 75% of tests were poor and 4% were in the risk zone. In parallel, the percentage of students with exceeding scores was greater to a large extent in the control group with 21% of students compared to a 4% in the experimental group. Average scores were very similar in both groups with 8% in the control group and 9% in the experimental group whilst successful scores doubled in the experimental group with an 8% of tests in this fringe. Therefore, the control group reported significantly better results than the experimental group. This is due to the fact that the percentage of students with poor and risk scores was considerably lower in the control group. In the first unit of Natural Science the control group that had initially showed a better control of the language in the initial assessment (see section 6.2) remains to be the best group with regard to vocabulary knowledge.

Moving on to the second unit of Natural Science, the test was performed at the end of November 2019. Thus, the first NLP spelling strategy “I can see words in my mind” had been practised for two months.

Chart 7: Spelling tests scores: Natural Science Unit 2





It can be seen from the data in this chart that the control group, slightly improved results from unit 1 to unit 2 within the poor zone, even though there was still a large percentage of tests in this fringe (58%). Additionally, the percentage of tests in the higher categories considerably decreased in unit 2 for the control group from a 4% in the first unit to no tests with successful scores in the second unit. As for exceeding scores, they also reduced from an initial 21% in the first unit to a 13% of exceeding scores in the second unit of Natural Science in the control group. Average scores, on the other hand, increased from an initial 8% of tests in the first Natural Science unit to a 21% in the second unit. Thus, tests within the poor and risk zone remained in a similar percentage, around 66% in both units. Meanwhile, tests with the highest scores, lowered from a 25% in the first unit to a 13% in the second unit. The only score that positively increased from the first to the second unit is the average range, from an 8% to a 21%. Given that lower scores barely changed and higher scores decreased, we could then say that the control group worsened results from one unit to the other.

On the contrary, the experimental group improved results from the first to the second unit of Natural Science. The percentage of students failing the spelling test significantly decreased from 75% in the first test to a 41% in the second Natural Science's test. In fact, tests in the experimental group considerably improved in successful and exceeding scores from an 8% to a 25% of successful and from a 4% to a 17% of exceeding scores respectively from the first to the second Natural Science unit. In addition to this, average scores also raised from 9% to 17% in the second unit.

Consequently, the experimental group improved results not only from the first to the second unit, but also when compared with results in the control group. Hence, a comparison of the two groups reveal that students in the experimental group increased the percentage of students with better results in spelling tests. The experimental group considerably improved results with, not only lesser students in the poor zone and none

students in the risk zone, but also with a large percentage of students with successful and exceeding scores. In this fashion, despite the large percentage of tests in the poor zone (41%) in the experimental group, the practice of NLP spelling strategies seemed to begin to show some positive results.

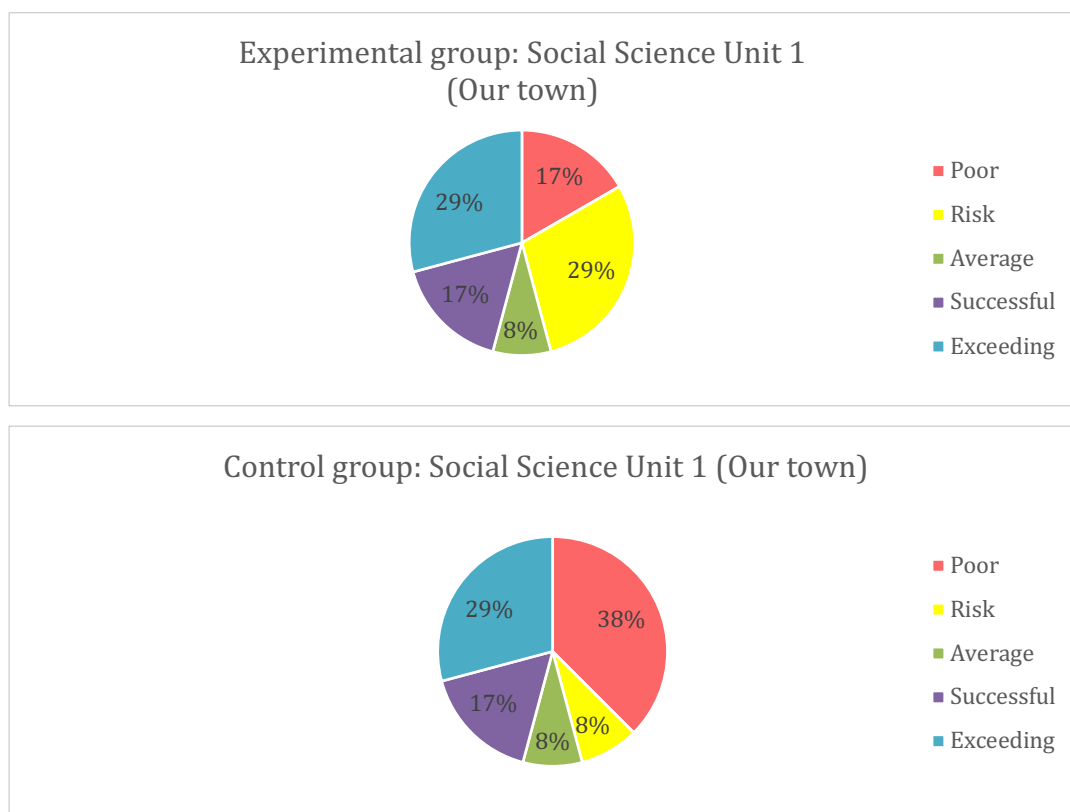
As far as key content vocabulary for Natural Science is concerned during the first term, we can see an improvement of results in the experimental group from the first to the second unit with 78% of poor and risk zone tests in the first unit that decreased to a 41% in the second week. In addition, the percentage of average tests increased from a 9% in the first unit to a 17% in the second unit in the experimental group. Furthermore, the number of top performers was stronger from an 8% of successful tests and 4% of exceeding tests in the first unit to a 25% of successful tests and 17% of exceeding tests in the second unit.

Even though initially the control group had better results than the experimental group, it can be observed how their spelling performance in tests decreased from the first to the second unit of Natural Science. Around 67% of tests were poor or within the risk zone in both units. However, even though the percentage of average tests raised from an 8% in the first unit to a 21% in the second unit, no increase was detected from an initial 4% of successful tests in the first unit. By the same token, the percentage of exceeding tests reduced from a 21% to a 13% from unit one to unit two. These results suggest that the use of the NLP spelling strategy improved results in the experimental group since not only spelling tests improved but also results were higher when compared to results in the control group.

Possibly, after two months of copying words in the control group students were losing track and interest in the activity. It is important to bear in mind that this was basically individual work at the beginning or end of the class. Simultaneously, the experimental group not only practised the NLP strategies as a group but also they did so in pairs within the three weeks of each unit. This change in the classroom dynamics may have positively influenced the experimental group. They enjoyed working with others and rather than chores, activities were perceived as fun and enjoyable. These differences among activities might have encouraged students in the experimental group to reinforce their content vocabulary spelling learning.

If we turn now to results in Social Science, two more units were taught in the first term. The first unit was about “Our town” and thus, vocabulary was related to places in a city and basic road signs and rules. The final spelling test was performed in mid November after the first unit of Natural Science. The following chart illustrates the results of the first unit of Social Science in both groups.

Chart 8: Spelling tests scores: Social Science Unit 1

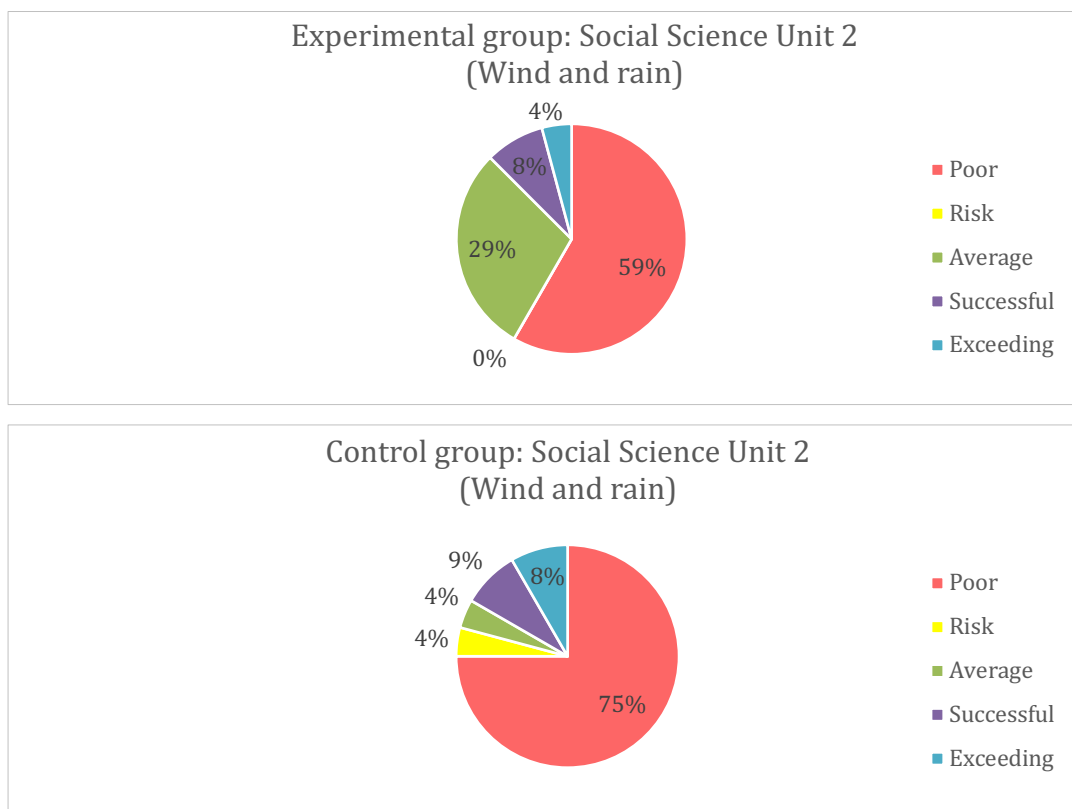


Interestingly, both groups showed the same percentages in most ranges. An 8% in average scores, 17% in successful and 29% in exceeding scores in spelling tests in Social Science unit 1. In addition, 46% of tests in both groups were within the poor and risk zones in both groups. Notwithstanding, the percentage of spelling tests in the poor zone, with less than 6 correct words, was much lower in the experimental group with a 17% compared to a 38% in the control group. Furthermore, the percentage of tests in the risk zone was also higher in the experimental group, which means that 29% of tests had among 6-7 correct spellings whereas in the control group only 8% of tests were in this range. From the chart above, we can observe that both groups of students had similar results in unit 1. However, the most interesting aspect is that the experimental group showed a greater achievement with lesser tests in the poor zone. Therefore, it could be suggested

that the experimental group performed better in the spelling test in Social Science unit 1. Consequently, after six weeks of the first NLP spelling strategy practice in the experimental group, results in spelling tests seemed to improve.

Turning now to Social Science unit 2, the chart below illustrates the results obtained in spelling tests for both groups. The second Social Science unit was about “Wind and rain” and therefore the vocabulary involved weather words and instruments to measure the weather. This final spelling test was performed in mid December after the second unit of Natural Science and it was the last unit taught within the first term. Chart 9 presents an overview of the results in this unit.

Chart 9: Spelling tests scores: Social Science Unit 2



It can be seen that the control group showed worse results in tests within the poor zone with 75% of tests in this range compared to a 59% of tests in the experimental group. Thus, 16% more of students had less than half words correct in in the control group. In addition, the experimental group got better results in the average zone with 29% of tests scoring above 6 points against 4% of tests within the same range in the control group. The percentage of tests with successful scores on the other hand, was quite similar in both groups. Finally, spelling tests with exceeding scores doubled in the control group with 8% of tests.

When comparing both groups in both units, the experimental group showed, in general terms, better results than the experimental group in both units. Nevertheless, a worsening of results can be seen from Social Science unit 1 to unit 2 in both groups. On the one hand, the control group almost doubled the percentage of tests within the poor zone from an initial 38% to a 75% in the second test. The percentage of tests within the poor and average zones cut to half from an 8% in unit one to a 4% in unit two. Furthermore, the same happened to the tests in the successful range that move from 17% to a 9%. However, the results that worsen the most were the tests with exceeding scores that decreased a 19% from one unit to the other from a 29% of exceeding tests in the first Social Science unit to an 8% in the second unit.

On the other hand, the experimental group, even though the results showed better performance when they were compared to the control group, they also worsened from one unit to the other. In the first Social Science unit 46% of tests were within the poor and risk zones but there were 29% of tests in the risk and 17% in the poor zone. In the second unit, this percentage not only increased to a 59% but also there were no tests recorded in the risk zone, being all of them tests with less than 6 correct spellings. However, the percentage of tests in the average zone increased from an 8% to a 29% in the second unit although the percentage of successful and exceeding tests dramatically decreases from a 46% in the first unit to a 12% in the second unit.

Even though the results were not particularly promising in any group, the most interesting aspect of these results is the fact that the experimental group always showed a better command of spelling in both units. Taken together, these results may suggest that the use of NLP spelling strategies brought about better results than copying words for spelling practice.

It is worth bearing in mind that Natural and Social Science units were alternated every three weeks. Hence, the first Social Science unit test was performed in mid November after having mastered the NLP spelling strategy for 6 weeks and after the teaching of Natural Science unit 1. Conversely, the second Social Science unit was conducted at the end of the term in mid December after two months and a half of spelling practice and following the teaching of Natural Science unit 2. Consequently, these differences between Social Science units can be explained in part by the tiredness at the end of the term and the proximity of Christmas celebrations. Fatigue and excitement about imminence in end of the term parties and festivities may be closely connected to a worsening of results in spelling tests. In addition to this, even though the first Social

Science unit had compound words, road signs or places in a town, such as traffic light or supermarket, may be words closest to students' interests. However, the second unit of Social Science dealt with weather words such as atmosphere or rain gauge that may have been more complicated to them as they are not that common.

This section has analysed the results of spelling tests during the first term in Natural and Social Science units 1 and 2 and has argued that the use of NLP spelling strategies suggest that spelling moderately improves in the experimental group when compared to other more traditional approaches such as copying words in the control group. The next section will study whether positive beliefs towards a particular spelling strategy produce any change in spelling performance. As a consequence, beliefs tests about these two different spelling strategies will be examined and will be compared to the results in spelling tests to understand the correlation that may exist among them.

6.2.2 Beliefs tests: Preliminary remarks

What follows is an account of the beliefs test that students had to do a day before doing the spelling test. As mentioned in the methodology, the beliefs questionnaire is the result of reviewing other papers that sought to find students' attitudes and opinions towards specific spelling strategies (see chapter 4). This test was adapted and translated from the attitudinal questionnaire that Nahari and Alfadda (2016) had used in their study about the effect of visualisation strategies to improve students' spelling abilities. This questionnaire in its turn was also based on Mesmeh's (2012) study about Cover Copy Compare strategy in the acquisition and retention of spelling and attitudes towards this particular strategy. The adaptation of this test contained 7 statements in English and Spanish in which students were asked to choose from a 5 point Likert scale ("Yes, of course" / "Yes" / "I don't know" / "No" / "Of course, not") in which 5 points were given to the most positive answer and 1 point to the most negative answer. I assisted students while they were completing the questionnaire by reading each statement and displaying pictures of each answer so they could relate to the best answer for each statement.

The aim of this test was to assess students' attitudes and opinions about the strategies used in each group. NLP spelling strategies were used with the experimental group whilst a more traditional approach to spelling was used with the control group by copying words from a list. Each statement was analysed to get an overall idea about

students' opinions and beliefs towards the strategies throughout the study. The table below compares the statements presented on each questionnaire for each group.

Table 14: Set of statements on each questionnaire Beliefs test

CONTROL GROUP	EXPERIMENTAL GROUP
1. I think that copying words helps me to be a good speller in English.	1. I think this strategy helps me to be a good speller in English.
2. I believe that copying words is fun and interesting.	2. I believe that using this strategy is fun and interesting.
3. I believe that copying words helps me to concentrate well when ^[1] _[SEP] learning the spelling of words in English.	3. I believe that this strategy helps me to concentrate well when ^[1] _[SEP] learning the spelling of words in English
4. I think that copying words helps me to learn the spelling of difficult words in English.	4. I think this strategy helps me to learn the spelling of difficult words in English.
5. I think that copying words is simple and easy to use.	5. I think this strategy is simple and easy to use.
6. I believe that copying words motivates me to learn the spelling of words in English.	6. I believe that this strategy motivates me to learn the spelling of words in English.
7. I think that copying words to learn the spelling of words in English gives me more confidence with the language.	7. I think that using this strategy to learn the spelling of words in English gives me more confidence with the language.

With the purpose of organising the data, the results of this test will be analysed differentiating each unit and each group. Given that the results of each beliefs test is triangulated with the results from the spelling tests in each unit, I will look at results of each particular group and Science unit in an attempt to get an overall idea of the efficiency of each strategy.

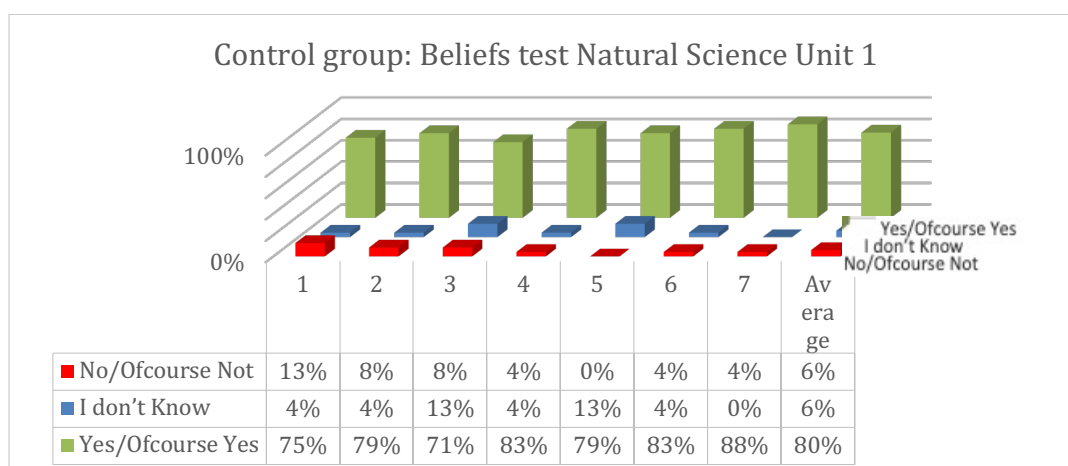
In the first place, the answers were analysed in the percentage of participants who answered positively (“Of course yes” and “Yes”), uncertain (“I don’t know”) and negatively (“No” and “Of course not”) to the statements in the beliefs test. Second, I calculated the average of students’ answers in the beliefs test and compared it to the average of results in spelling tests. The results were compiled in what I called the effectiveness chart. In this particular case, only results above 6 points (norm. to ten) in both, beliefs and spelling tests, were taken into consideration. This was done with the intention of finding relationships between the percentage of students who validated the spelling strategy used and the percentage of students with average, successful and exceeding scores in spelling tests. Finally, the results of the correlation analysis between the beliefs and spelling test of each unit and participant were presented using the Pearson

correlation⁵⁹. As a means to discover correlations among tests, a +/-20% of difference in results between tests was considered acceptable. All in all, this was done for each group of participants and each unit of Natural and Social Science developed in the first term.

6.2.3. First term: Natural Science Beliefs tests

In this section, Natural Science (units 1 and 2) beliefs tests will be analysed and triangulated with results of spelling tests in both groups. The next graph illustrates the answers of the beliefs test in the control group for the first unit of Natural Science.

Graph 15: Control group beliefs test Natural Science Unit 1



Graph 15 shows an overview of the statistics for the students in the control group. The statement regarding confidence with the language received the most favourable score with 88% of positive answers (statement 7). The second most favourable answer (83%) was to statements regarding students' improvement with challenging vocabulary and motivation (statements 4 and 6). Close to 80% of students also believed that copying words was fun and interesting whilst 8% answered negatively to the same statement (statement 2). Another 79% thought that copying words was simple and easy to use despite the fact that 13% were uncertain about this in the first Natural Science unit (statement 5). Around 75% believed that copying words helped them to be good spellers although 13% thought negatively about this fact (statement 1). Finally, 71% thought that copying words helped them to concentrate well while learning the spelling of words whereas 13% were

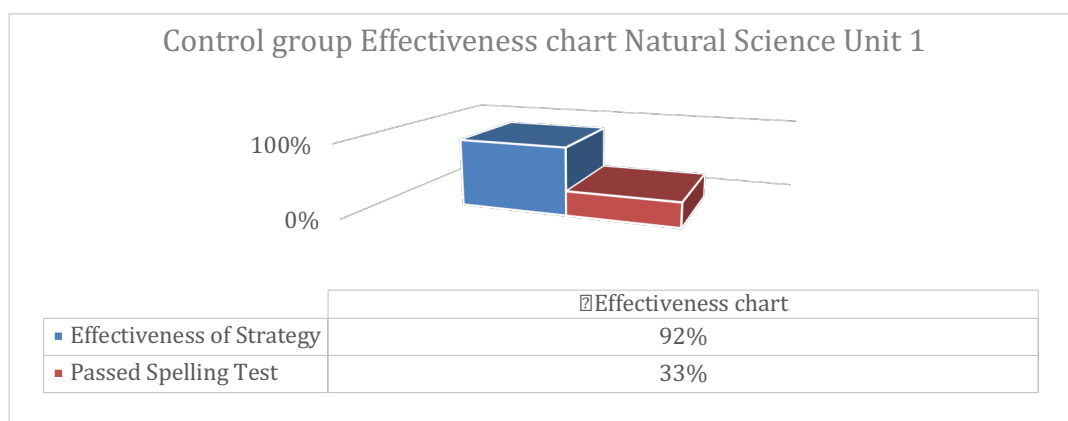
⁵⁹ We consider perfect correlation if the value is near +1. High degree of correlation if the value lies between +0,50 and +1. Moderate degree of correlation if the value lies between +0,30 and 0,49. Low degree of correlation when the value is below +- 0,29 and no correlation when the value is 0. Taken from: <https://www.statisticssolutions.com/pearsons-correlation-coefficient/>

unclear about this belief (statement 3). Therefore, around 80% of students answered positively to all questions in this first beliefs test about copying words.

These results suggest that some students believed that copying words did not help them become better spellers in English. Additionally, students in the control group were uncertain about copying words to help them concentrate in their work. Most importantly, some students reflect their uncertainty about motivation implied from copying words to learn spelling. However, the large number of students in the control group answering positively to most statements suggests that they validate copying words as an effective spelling strategy. This may be due to students' feeling optimistic after the first three weeks of copying words for spelling practice.

A closer inspection to the answers given in this test was done to find the percentage of students who validated this strategy, copying words, as effective for them. In the light of this, I analysed the results obtained in the spelling test with the intention of finding out whether students who validated this strategy as effective or useful were showing the same effective results in spelling tests. In order to find out what students thought about the effectiveness of the strategy, I calculated the average of each student's answers on the beliefs tests and normalized the result to ten. To establish whether students validated the strategy as efficient only scores above 6 points were taken into consideration. When these results were compared to spelling tests, only tests which score was above 6 points (i.e., average, successful and exceeding scores) were considered. The next chart illustrates the results in the first unit of Natural Science.

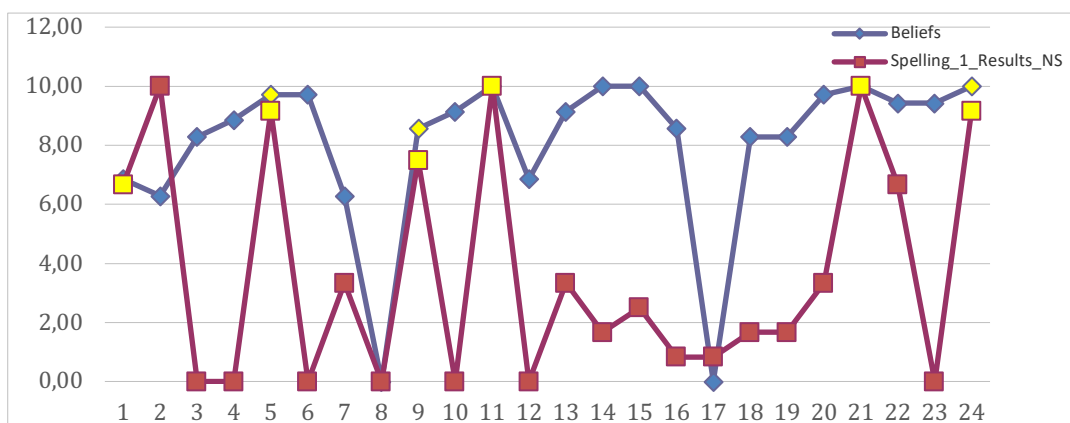
Chart 10: Control group effectiveness chart Natural Science Unit 1



From the graph above we can see that the control group reported significantly more positive beliefs towards the strategy than the actual performance in the first Natural Science spelling test. 92% of students validated copying words as a useful strategy although only 33% of spelling tests were above average scores. Hence, even though half the group was confident about copying words as a spelling strategy, this did not help them achieve better scores in test. It can therefore be assumed that in this first unit feeling confident about copying words as an effective strategy did not translate into better results in spelling tests for the control group. The positive results in the beliefs test might be due to students feeling motivated towards something new being introduced: copying words for spelling practice. These initial results call attention to the relationships between motivation and positive beliefs.

As a final remark, the Pearson correlation was used to identify what students believed about a particular spelling strategy and to find out whether they performed in accordance to their belief. In this case, a correlation +/-20% difference between the results of both tests was considered acceptable. It seemed important to analyse the results of the correlation analysis between beliefs and spelling tests of each student. These results are presented in figure 5.

Figure 5: Control group Natural Science Unit 1 Pearson's correlation

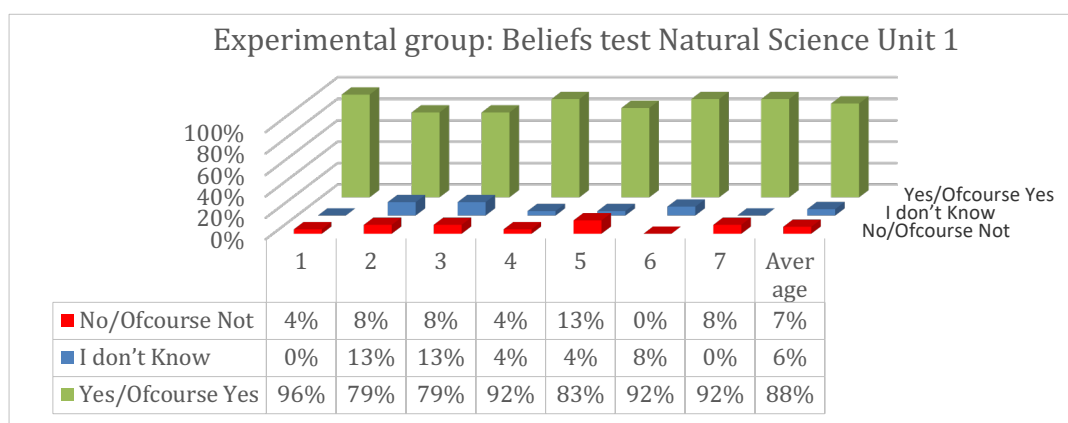


Coef. Correl. Pearson
0,27

Figure 5 displays the intercorrelations between the two measures, beliefs and spelling test. There are 6 students were able to perform in spelling tests according to their opinions in the beliefs test. All of them passed the spelling test above the average range and students 11 and 21 fully matched beliefs and spelling performance. However, 18 other students were failing spelling tests whilst believing that copying words was an effective strategy. As a matter of fact, the value of the correlation is 0,27 that shows a low degree of correlation between tests. In general terms, there was no evidence that positive beliefs about copying words as a spelling strategy had an influence on the students' performance in spelling tests. This combination of findings provides some support for the conceptual premise that when young students are driven and motivated to do something new, such as copying words for spelling practice, they believe that this might come as an effective result. However, their spelling tests still leave great room for improvement. Finally, it is important to highlight that student 8 and student 17 did not take the beliefs test as they were absent the day this test was taking place.

As far as the experimental group is concerned, the same kind of data was analysed only this time the beliefs test was focused on the use of NLP spelling strategies as a means to learn key content words from Natural Science. The following graph presents an overview of the answers given in the beliefs tests unit 1 in the experimental group.

Graph 16: Experimental group beliefs test Natural Science Unit 1

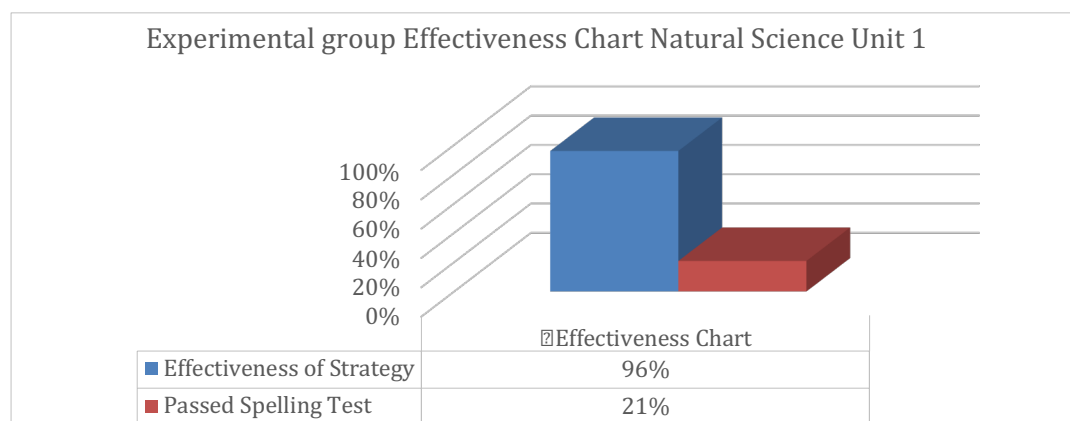


The most favourable score was given to the first statement with 96% of students believing that the NLP spelling strategy would help them become better spellers. This was followed by a 92% of students believing that this NLP spelling strategy motivated them to learn the spelling of words in English with 8% of students not sure about the same fact (statement 6). Another 92% was given to the seventh statement related to confidence with

the language in with the remaining 8% were negative about this granted confidence. The same percentage was given to the fourth statement in which 92% of students believed that the NLP spelling strategy helped them to learn the spelling of difficult words in English. 83% of students believed that the strategy was simple and easy to use (statement 5). However, it is relevant to point out that 13% of students answered no to the same statement and thus, found it difficult to use (statement 5). Given that this was the first time they were using an NLP spelling strategy for spelling practice, this percentage did not seem significant since most students answered favourably and thus found it simple and easy to use. Finally, 79% of students believed that NLP spelling strategies were fun and interesting and helped them to concentrate well when learning the spelling of key content words in English, albeit 13% of students were uncertain about both statements (statements 2 and 3). All in all, around 88% of students answered positively in the first beliefs test for Natural Science. Consequently, most students in the experimental group after three weeks of spelling practice with NLP validate this strategy as an effective way to learn key content words in English.

As mentioned above, the percentage of students who validated the NLP spelling strategy was analysed with the intention of finding out whether students who validated this strategy as effective or useful, were showing the same effective results in spelling tests. Again, to determine whether students validated the strategy as efficient only average scores above 6 points were considered. Similarly, spelling tests which score was above 6 points were considered to calculate the relation between both tests.

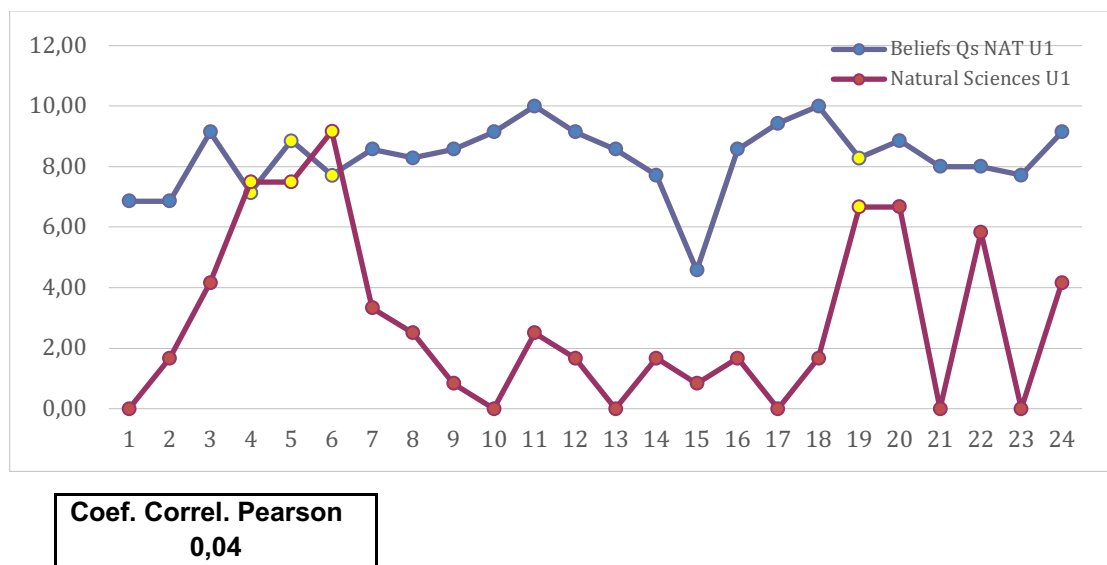
Chart 11: Experimental group effectiveness chart Natural Science unit 1



As it can be observed in the graph above, the experimental group also reported significantly more positive beliefs towards the strategy than the actual performance in the first spelling test. 96% of students validated NLP spelling strategy as a useful strategy although only 21% of spelling tests were above average scores. Consequently, about 75% of students were not showing similar results between tests. A possible explanation about this might be that students' motivation towards a new way of working, such as NLP spelling strategy, may have risen students' interest and motivation. It is, of course, entirely possible that when young students feel motivated towards work they may think that their results will be as positive.

Again, the answers in the beliefs test in the control group were analysed to find correlations between their opinions towards NLP spelling strategies to learn spelling of key content words and their actual performance in spelling tests. The Pearson's correlation was also used to analyse their answers and results. It was considered as an acceptable correlation +/-20% difference between the results of both tests. A closer inspection to the results of the correlation analysis between beliefs and spelling tests in unit 1 are presented in figure 6.

Figure 6: Experimental group Natural Science Unit 1 Pearson's correlation

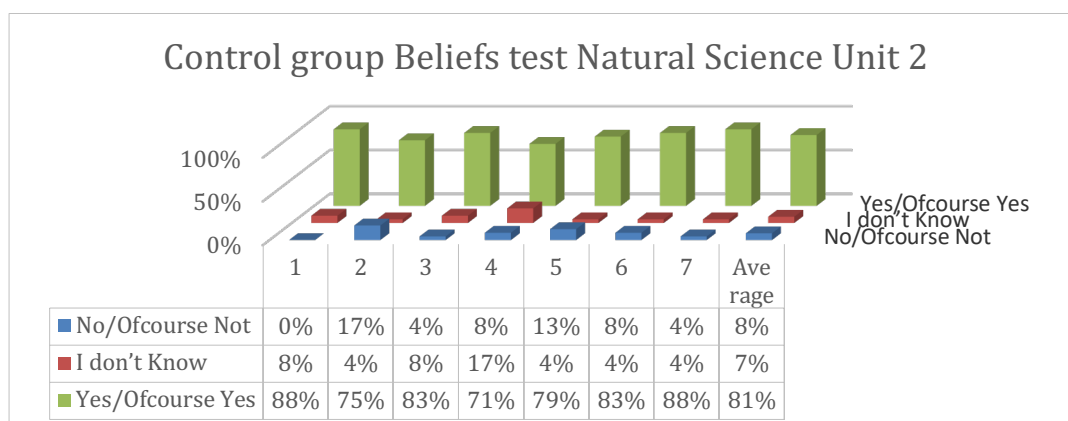


From the figure above we can see that the experimental group reported significantly more positive beliefs towards the NLP spelling strategy than positive results in spelling tests. Just around 4 students were able to perform in spelling tests according to their opinions in the beliefs test (the ones signalled in yellow above), all of them passing the spelling test above the average range. If we look at student 15, we can see that is the

only student whose beliefs towards the strategy was below the average level. This student believed to have some difficulties with English. She considered herself as a bad and non-able student. The results in this test may be a confirmation of her discouragement with the foreign language. However, the rest of the beliefs test are mostly above the average level except in this case. In spite of this, spelling tests were mostly below 4 points. As a consequence, there is a low correlation index of 0,04. This implies that positive beliefs towards the NLP spelling strategy did not bring about any change in spelling performance. Hence, there was no evidence that positive beliefs towards the NLP strategy in the experimental group translated in better results in tests.

Having examined the results of the beliefs test of the Natural Science test 1 and triangulated results with the scores of spelling tests in the same unit, I will proceed to analyse the same data but related to Natural Science unit 2. The next graph illustrates the answers of the beliefs test in the control group for the second unit of Natural Science.

Graph 17: Control group beliefs test Natural Science Unit 2



Graph 19 presents the breakdown of students' answers in the beliefs test presented a day before doing Natural Science Unit 2 spelling test. The most successful statements with 88% of positive answers were that most students believed that copying words would help them become better spellers and gave them more confidence with the language (statements 1 and 7). The second most successful statements with 83% were the ones related to concentration and motivation in which students confirmed that copying words encouraged both (statements 3 and 6). 79% of students believed that copying words was easy although 13% found trouble copying words (statement 5).

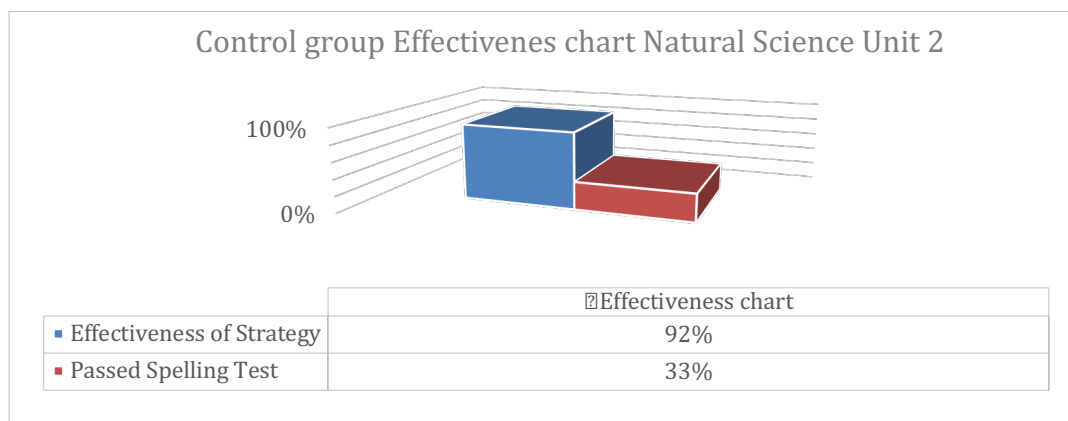
This result relates to answers to the same statement in the first unit of Natural Science. In the first unit the same percentage, 13%, felt uncertain about copying words being easy. These doubtful students turn to negative when asked a third time⁶⁰ and thus considering copying words as hard or difficult. In addition, 75% of students believed that copying words was fun and interesting (statement 2). In contrast, 17% of students thought that this statement was false (statement 2). When comparing results from the first to the second unit of Natural Science we can observe how negative answers to this statement doubles from an 8% to a 17%. Ergo students in the control group were losing interest in copying words for spelling practice considering it boring and monotonous.

Furthermore, 71% of students thought that copying words would help them to learn the spelling of difficult words whereas 17% were uncertain and 8% negative about the same statement (statement 4). These results clearly contrast with answers in the first unit of Natural Science in the control group. In the first unit only 4% of students were doubtful or negative about the fact that copying words would help them with difficult words. Consequently, the control group shows a more sceptical view on copying words as an effective strategy. Nevertheless, looking at this graph, it is apparent that statements were mostly answered positively to an 81%. As a matter of fact, to a large extent (88%) students in the control group still believed that copying words would help them become better spellers and that it gave them more confidence with the language (statements 1 and 7). Therefore, in general terms, it can be said that they considered copying words as an effective spelling strategy although with some important dubious beliefs.

With the purpose of measuring the students who validated the strategy as efficient each student's answers in the beliefs test were weighted to average scores above 6 points. This was done in order to calculate the correlation among beliefs and spelling tests in the same unit. The chart below presents the percentage of students who validated copying words as an effective strategy and the percentage of spelling tests above the average score.

⁶⁰ In spite of the fact that Natural Science results are being analysed together, during the term the teaching of Natural and Social Science contents was alternated. That is to say that Natural Science unit 2 was taught after Natural and Social Science unit 1 and therefore in the third place.

Chart 12: Control group Effectiveness chart Natural Science Unit 2

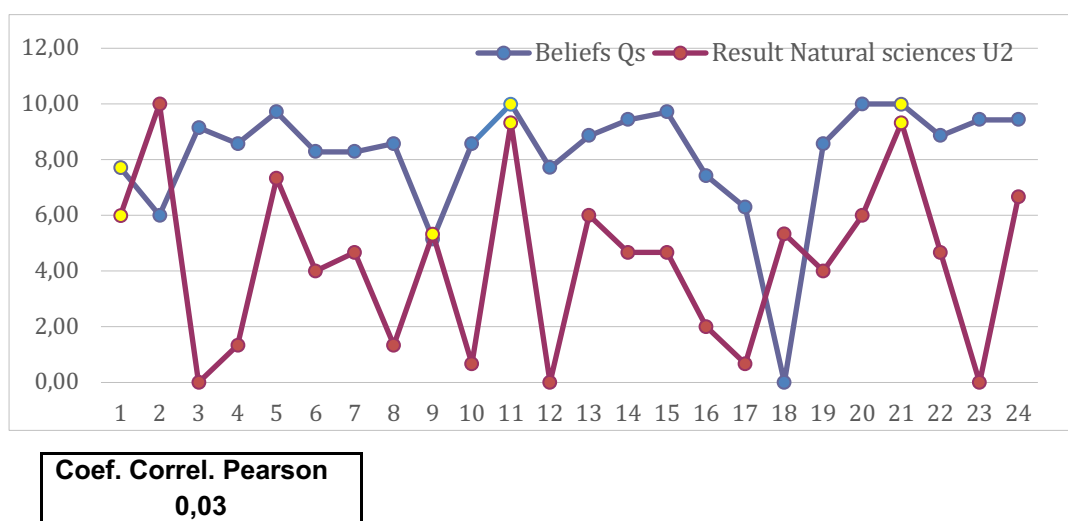


From the chart, it can be seen that the greatest percentage goes to the effectiveness of the strategy with a 92% of students validating copying words as efficient or useful. However, only 33% of tests reflect their positive beliefs about copying words in their actual scores in spelling tests. Thus, there is a difference of 59% of students who think that copying words is effective but their test contrary expectations. When these results are compared to the same data collected from Natural Science unit 1, we can observe how students in the control group have the same results in both units. However, as commented when analysing results in spelling tests (see section 6.2.1) the control group worsens spelling performance in the second Natural Science unit.

Consequently, students in the control group have validated to the same extent, copying words as a spelling strategy in both units even though their results worsen from one Natural Science unit to the other in the first term. Initially, these findings suggested that students felt motivated towards the copying words and thus, they believed that their spelling would be as good. Nevertheless, it has been noticed how around 17% of students already showed doubtful or negative attitudes in statements such as finding this practice fun and interesting, simple and easy or help them with difficult words. Therefore, even though beliefs test is widely validated in most statements, some students are beginning to evidence their difficulties in some of the statements in the test. All in all, positive beliefs do not indicate better performance in spelling tests.

Data from this chart can be compared to the next figure that illustrates the Pearson's correlation of all students and tests in Natural Science unit 2 in the control group.

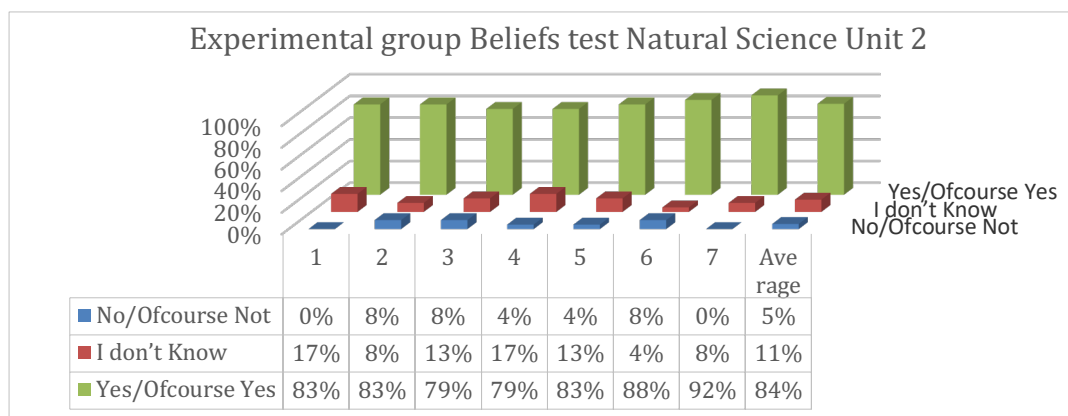
Figure 7: Control group Natural Science Unit 2 Pearson's correlation



First, even though there is almost no correlation with 0,03, as already noted, a fair correlation +/-20% difference between the results of both tests was considered acceptable. Hence, around 4 students were able to match results and expectations about the efficacy of learning the spelling of words by copying. Interestingly, these same 4 students were able to match results also during the first unit of Natural Science. One of the issues emerging from this finding relate specifically to students' maturity. Some children may lack from the level of maturity to be able to assess themselves according to their actual performance or abilities. At the same time, others may have reached a state of maturity or responsibility enough to be able to give an accurate answer related to their achievements. This in fact may be the reason why the same 4 students were able to match their beliefs to their results in both units. In any case, it can be seen from this figure that, to a large extent, the positive beliefs about copying words exceed the actual results in spelling tests. Finally, it is important to note that student 18 did not do the beliefs test (TEA student) as he was not in class at the time of the event.

Having examined results for the control group in Natural Science Unit 2, I will explore the results for the same unit with the experimental group in which the NLP spelling strategy was put into practice. In so doing, I will delve into students' answers to the statements in the beliefs test. The following graph presents a summary of students' responses.

Graph 18: Experimental group Beliefs test Natural Science Unit 2



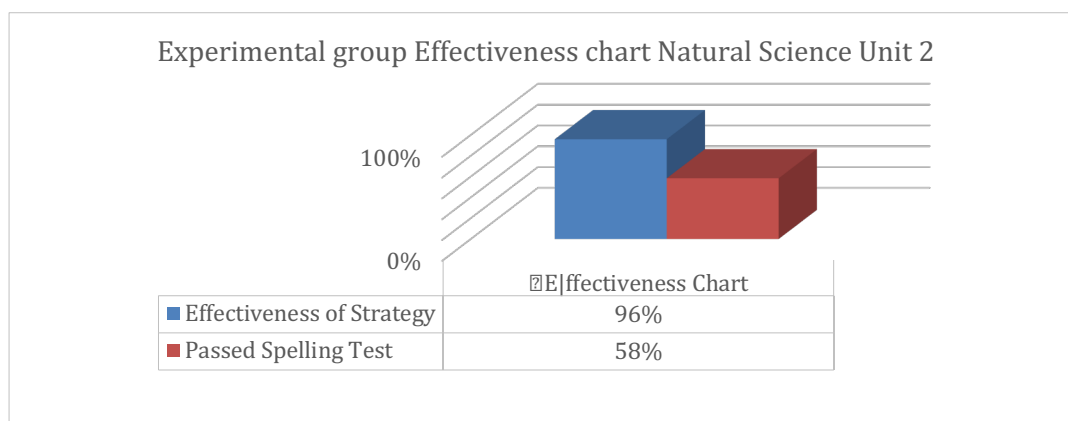
As evidenced in the graph above, 84% of students answered positively to all statements in this test. By far, the most favourable answer was given to the statement related to confidence in which 92% of students believed that the NLP spelling strategy to learn spellings gave them more confidence with the language (statement 7). Motivation was also among the most favourable statements with 88% of students answering yes and of course to the sixth affirmation. Only 8% were negative and 4% were uncertain about motivation boosted thanks to the use of the NLP spelling strategy. Around 83% of students thought that the strategy was fun and interesting and simple and easy to use (statements 2 and 5). Only around 8% of students were either unsure or negative about this strategy being fun or interesting. Additionally, another 13% of students were unclear about whether this strategy was simple or easy (statement 5).

Finally, 79% of students thought that this NLP spelling strategy helped them to concentrate when learning the spelling of words in English whereas 17% were not sure and 8% believed that this strategy did not help with concentration. All in all, most students answered positively to this beliefs test in Natural Science unit 2. As a matter of fact, numbers indicate that students feel positive about the NLP spelling strategy in terms of motivation and confidence. The only statements that had a larger number of uncertain answers were related to this strategy helping them to be a good speller (statement 1), helping them to concentrate best (statement 3) and helping them with learning difficult words. This implies that even though they were enjoying learning and putting the NLP spelling strategy into practice some students are doubtful about the efficacy of the strategy. This may be because since they had already done 2 spelling tests before this beliefs test,

(Natural and Social Science unit 1), they already knew that their scores were not being as good, and thus, they tried to adjust opinions to their previous results.

With regard to students who validated the strategy as efficient, the next chart shows the proportion of beliefs tests and spelling tests above an average of 6 points in Natural Science unit 2 in the experimental group.

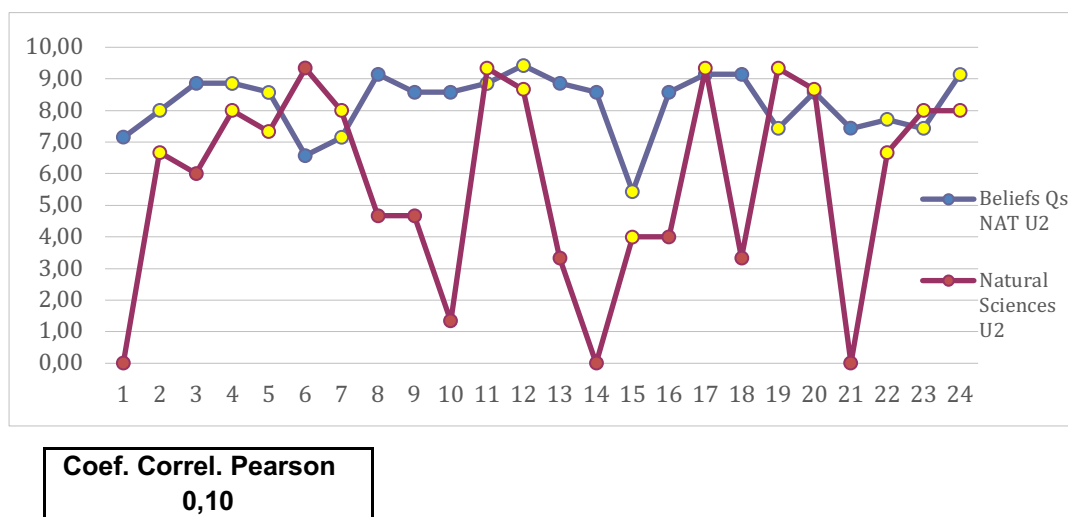
Chart 13: Experimental group Effectiveness chart Natural Science unit 2



As shown above, students' beliefs about the efficiency of the NLP spelling strategy were more optimistic with 96% of students validating this procedure. As a matter of fact, results in spelling tests became better from the first Natural Science unit to the second. Nonetheless, the actual performance in the spelling test was lower with 58% of tests above an average score. When looking at the big picture and comparing results from the first to the second unit of Natural Science, it can be observed how this time only 38% of students failed to match beliefs to performance. This result compared to the 75% of students in the experimental group failing to align beliefs and actual performance in the first unit of Natural Science is indeed a significant improvement. As I mentioned before, this is the third beliefs test that students had to complete. When they completed the beliefs test in unit 1, they did not have a single reference of their spelling performance. On the contrary, this time they already knew their spelling performance in two tests before this one. This may be the reason why 62% of students were more accurate to match beliefs and performance.

With the purpose of analysing individual tests and results, the Pearson correlation coefficient was then used to determine the relationship between the beliefs and spelling tests in this unit. The next figure presents the intercorrelations among these tests.

Figure 8: Experimental group Natural Science Unit 2 Pearson's correlation



The figure above exhibits that positive beliefs about NLP spelling strategies surpass once more the results in spelling tests. Again, there is a low correlation index of 0,10. In spite of that, taking into account that +/-20% of difference in results in both tests was considered as acceptable, 13 students in the experimental group correspond beliefs and spelling test in the same unit. Only one of them, student 15, had a less favourable result in the beliefs test although this is correspondent to her results in the spelling test. As already noted in the analysis of the first Natural Science unit, this student manifested discouragement towards the foreign language. However, this is the second time she indicates less favourable beliefs.

Initially, these poor beliefs towards the strategy may have been an indicative of a low self-esteem. However, this time her low beliefs about the efficacy of the strategy match the results of her spelling test. Therefore, she was claiming to have difficulties with the strategy that she was also showing in the tests. From those students with acceptable correlation, 12 were above the average score in spelling tests. Despite the big number of students with fair approximate results in both tests due to the +/-20% margin of tolerance, the Pearson's correlation index indicates that there is no evidence that positive beliefs about the NLP spelling strategy translate into positive results in spelling tests. Nevertheless, there is a noticeable improvement from the first to the second Natural Science unit that may be due to students getting used to judge the efficacy of the strategy.

After reviewing the results of the Natural Science units 1 and 2 in the first term, what follows is a brief overview of the analysis done in this section.

6.2.4. First term: Summary of Natural Science Beliefs tests

Summarising the results of the beliefs tests related to Natural Science units in the first term of study, both groups control and experimental, thought positively about the spelling strategies used. These confident beliefs towards the spelling strategies used in each group may have been due to students feeling motivated towards a new way of working. In general terms, when young students are introduced to new strategies techniques, if they are presented with the right support and encouragement, they tend to respond with the same motivation. This may have been the reason for students validating the spelling strategies to a large extent.

Once I analysed the answers in the test, I calculated the average of students' results in both, the beliefs and spelling tests in both units and groups in the effectiveness chart. The aim was to find out whether those students who believed a particular spelling strategy was effective had similar results in spelling tests. Positive beliefs about the efficacy of the strategy in all units and groups always surpassed the actual results in spelling tests in both groups. The initial results in these charts possibly indicate that motivation towards these spelling strategies was translating into positive beliefs. However, these positive beliefs were not being reflected into positive performance in spelling tests. In any event, from Natural Science unit 2, students in the control group began to show some evidence in finding difficulties with copying words for spelling practice. Almost 20% of students considered this boring, complicated and expressed their doubts about the efficacy of copying words to help them spell difficult words in English.

Alike the control group, the experimental group was validating the NLP spelling strategy as an effective strategy although were presenting some doubts in some of the statements in the test. However, results in the spelling test worsen from one unit to the other in the control group whilst they increase from the first to the second unit in the experimental group. This made 62% of students in the experimental group be more accurate when matching beliefs and spelling performance against a 41% in the control group in the second unit of Natural Science. This finding, while preliminary, suggests that students in the experimental group were learning to assess how the strategy worked for them in a more accurate way.

Finally, I decided to study all students individually. As a consequence, a Pearson's correlation analysis was conducted in order to assess whether students performed in accordance to their beliefs, considering an acceptable correlation +/-20% difference between the results of both tests. Data shows that no significant correlation was found

between the average of results in the beliefs tests and the scores in the spelling tests in any of Natural Science unit. Nevertheless, it could be observed how the same group of students in the control group were able to match an acceptable correspondence in both units. In this sense, it was highlighted how maturity could be the reason for the same students being able to match beliefs and performance.

In addition, the experimental group shifts from 6 students to 13 students able to match results in tests (+/- 20% margin of tolerance) from the first to the second unit. In all cases the correlation between tests is low. The control group even with the same number of students with fair results from one unit to another the correlation between tests drastically worsens from a 0,27 correlation index to a 0,03 index. However, the experimental group improves the correspondence between beliefs and spelling tests from a 0,04 index in the first test to a 0,10 index in the second test. In this case, it was pointed out how students in the experimental group may have been getting used to assess their beliefs according to their actual performance in tests.

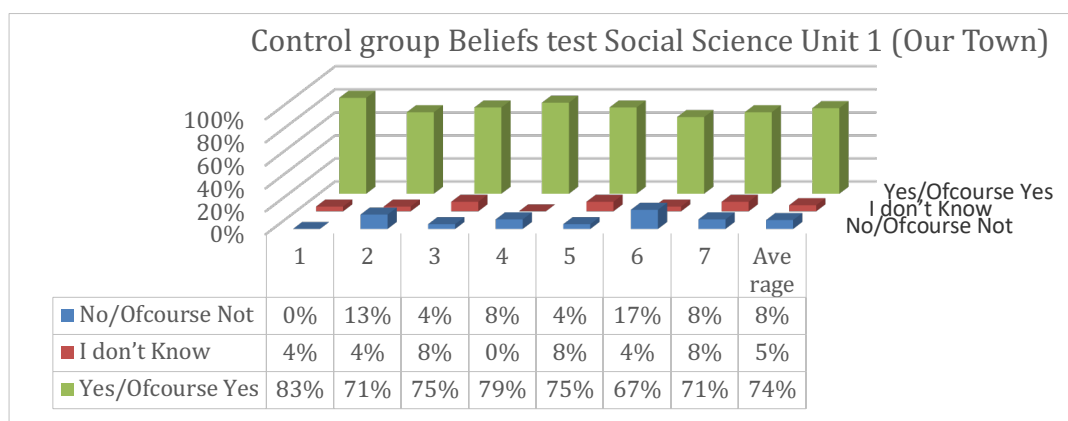
Summarizing, in general terms, despite the fact that there were not meaningful correlations between positive beliefs and positive results in spelling tests, the experimental group improves results whilst the control group worsens the same results from the first to the second unit of Natural Science during the first term. All things considered, it seems that there is no correspondence between positive beliefs towards these particular spelling strategies and students' actual performance in spelling tests.

The following section describes the analysis of results of beliefs tests in Social Science units 1 and 2 in the first term of study. The same structure as the above mentioned will be followed in order to grant cohesion to the paper.

6.2.5. First term: Social Science Beliefs tests

In this section, Social Science (units 1 and 2) results in the beliefs tests will be discussed and triangulated with results of spelling tests in both groups. The next graph illustrates the answers of the beliefs test in the control group for the first unit of Social Science. This test was conducted in mid-November 2019.

Graph 19: Control group Beliefs test Social Science Unit 1



The graph above presents an overview of students' answers in the beliefs test done a day before doing Social Science spelling test Unit 1. As it can be seen, the most approved statement was number one that was related to the idea of becoming better spellers with the use of copying words as a spelling strategy. 83% of students answered positively and only 4% was doubtful about the same aspect with not a single negative answer (statement 1). To a large extent, they believed that this strategy would aid them to improve their spelling. 79% of students believed that copying words would help them learn difficult words in English although 8% were negative about the same fact (statement 4). 75% of students believed that copying words helped them to concentrate well (statement 3) and that it was a simple and easy to use strategy (statement 5). Only 8% were uncertain and 4% were negative about the same statements (statements 3 and 5). 71% of students believed that copying words was fun and interesting and that copying words gave them confidence with the language (statements 2 and 7). However, 13% of students thought that copying words was not fun or interesting and 4% was doubtful (statement 2).

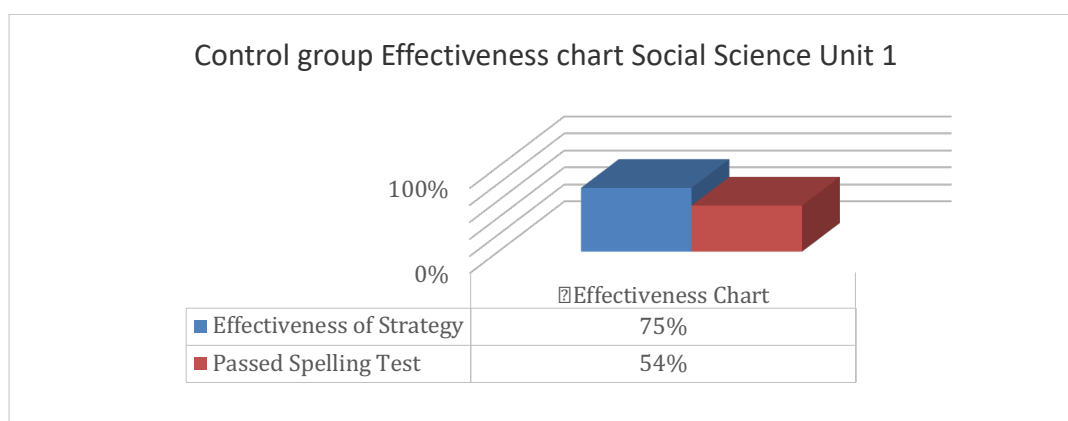
Thus, just under 20% of students were indicating that copying words was boring. This implies a considerable amount of students losing the initial enthusiasm about this practice. In addition, 16% of students were either unsure or negative about the fact that copying words gave them confidence with the language (statement 7). Hence, they were indicating that copying words was not promoting self-confidence with the foreign language. Furthermore, the least approved statement with a 67% was related to motivation in which 17% of students were negative about the fact that copying words enhanced their motivation and 4% were unsure about the same fact (statement 6). This probably means that students in the control group were losing interest in copying words after 6 weeks of practice considering copying words a tedious practice to a considerable extent. In spite of

this, a large number of students, 74%, still answered positively to most of the statements in this test. As a consequence, copying words was being validated as an effective strategy by a large quantity of students.

To continue, I calculated the percentage of students who validated copying words as an effective spelling strategy (answers in the beliefs test above 6 points) and the percentage of spelling tests above the average score (tests with 6 or more points).

The next chart illustrates the relationship between these two aspects.

Chart 14: Control group Effectiveness chart Social Science unit 1



As chart 14 shows, 75% of students validated copying words as an effective spelling strategy whilst 54% of spelling tests were above average scores. Thus, 21% of students were failing to match their positive beliefs to their spelling performance. It is important to highlight that this is the closest that students in the control group have been to correspond from opinions to achievements. A possible explanation for this is that they had had some practice copying words and they had done a beliefs test before this one. Thus, having done one test might have made them reflect on their beliefs about the efficacy of copying words in a thorough manner. Another possible explanation for this is that students may have found the key content vocabulary in this unit a bit easier than the previous unit taught.

With the aim of examining the results of each participant's beliefs and the spelling tests, the Pearson correlation was applied in an attempt to detect possible connections between their results. The next figure depicts the control group's results in Social Science Unit 1 in the beliefs and spelling tests.

Figure 9: Control group Social Science Unit 1 Pearson's correlation

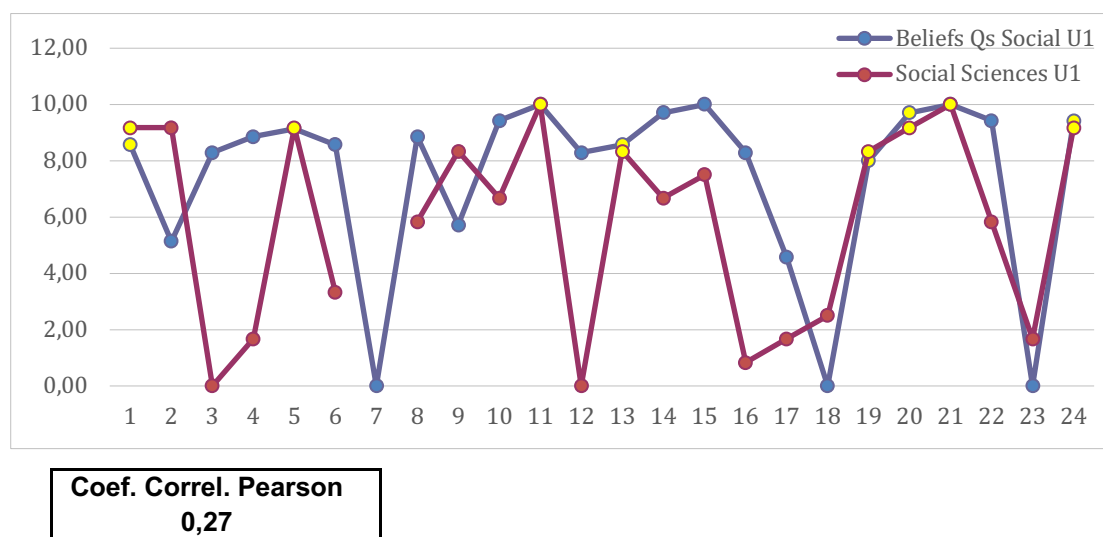


Figure 9 provides the intercorrelations in the control group between the beliefs test that took place a day before doing the Social Science unit 1 spelling test. As reflected, the Pearson correlation index is 0,27. In spite of the low degree of correlation, when the +/- 20% of acceptable difference among tests is applied, we can see how 8 students show fair correspondence between beliefs and spelling tests. All of them present reasonable correlations above successful scores. As a matter of fact, six of them (students 5, 11, 13, 19, 21 and 24) presented exact or almost exact correlation among tests. We can also notice how students 3 and 12 even though they indicated positive beliefs towards copying words as a spelling strategy, did not perform accordingly in this unit's spelling test. Given that these two students were diagnosed with severe dyslexia this may be treated in particular in a different section (see section 6.2.9).

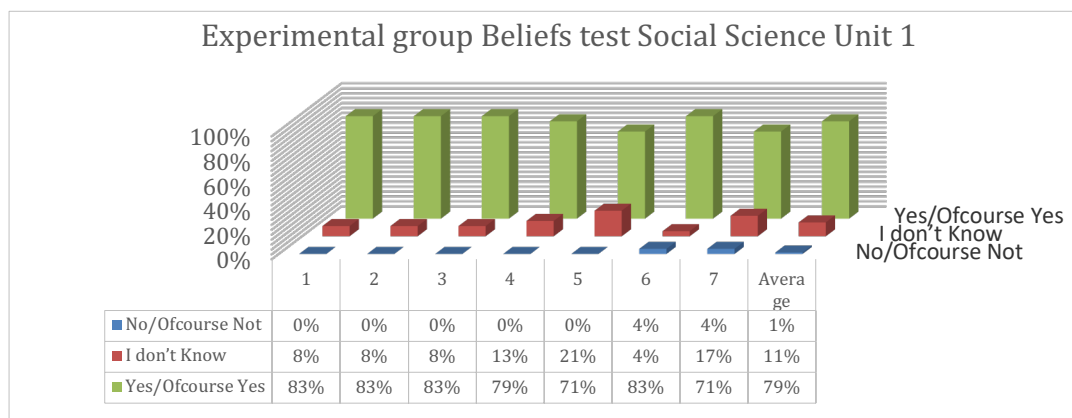
However, the difficulties these students exhibited in the spelling test were more than evident. There are two cases in which beliefs are lower than the actual performance in the spelling test (students 2 and 9). These two students were always above the average level in the foreign language. They profoundly disliked copying words in the notebook as they always commented that they found it tedious and boring. From the statements they valued as negative, we can find that they believed the strategy was boring and uninteresting (statement 2), did not help them to concentrate best (statement 3), did not motivate them to learn English (statement 6) and did not give them confidence with the language (statement 7). Nevertheless, they gave a high score to statements related to finding copying words simple and easy (statement 5) or thinking that copying words would help them become better spellers (statement 1). This probably means that even if they did not

like this strategy they knew that practice makes perfection. Even though they made explicit their dislike towards the strategy, they kept good grades in their spelling tests. However, this raises a question of whether good students are good spellers regardless the strategy used to learn spelling.

Finally, it is relevant to highlight that student 7 did not do the beliefs or spelling test in this unit and thus, there is a cut in this line of reference. The same happens with students 18 (ASD student) and 23 that did not do the beliefs test because they were absent that day. Nevertheless, it can be observed how both students also failed to complete the spelling test with a fair result.

In what follows, the same data from the experimental group will be analysed. The forthcoming graph depicts answers to the beliefs test taken a day before doing the spelling test from Social Science unit 1 in the experimental group.

Graph 20: Experimental group Beliefs test Social Science unit 1



The graph above displays the breakdown of answers in the beliefs test according to students' opinions. Most statements were marked as favourable with 83% of students believing that the NLP spelling strategy helped them to be better spellers (statement 1), it was fun and interesting (statement 2), it helped them concentrate best when practising their spellings (statement 3). None of these students were negative about the same statements although around 8% were doubtful in all of them. Consequently, most students in the experimental group seemed to have positive attitudes towards the NLP spelling strategy. Furthermore, when something is considered fun or interesting it makes it more likable and enjoyable.

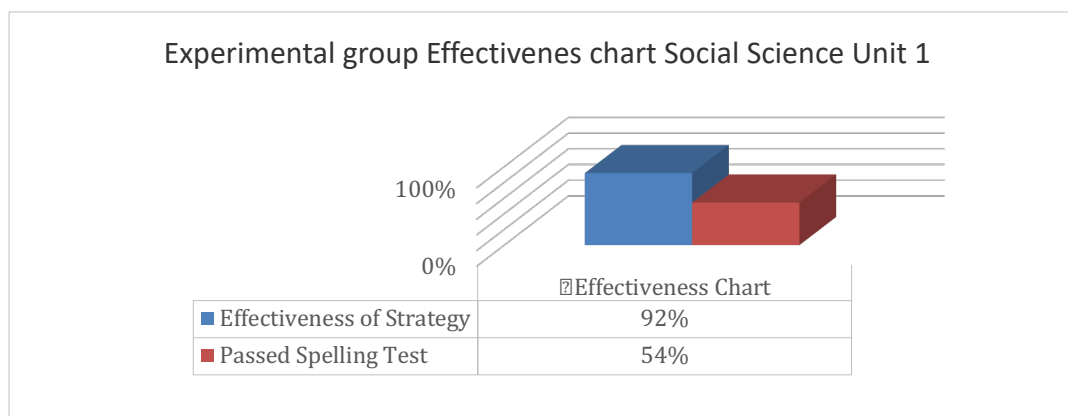
In addition, another 83% believed that the NLP spelling strategy was simple and easy to use whilst 4% were uncertain and another 4% were negative about the same fact (statement 6). There is no question that learning the NLP spelling strategy needed training and support from the teacher. For this reason, it is absolutely normal that some students may have not found it easy to learn. The second most favourable statement was the fourth one related to whether they believed this NLP strategy helped them with the spelling of difficult words in English with 79% of students answering positively. However, 13% were not sure about NLP spelling strategies helping them with such a task (statement 4).

This result might be explained by the fact that this Social Science unit had at least four compound words (i.e., supermarket, traffic light, swimming pool, pedestrian crossing). Having compound words may have been considered language of special difficulty. Finally, statements 5 and 7 regarding simplicity of the strategy and confidence were widely accepted with 71%. Nevertheless, 21% of students questioned the easiness and simplicity of the NLP strategy and 17% doubted that the use of the NLP spelling strategy gave them more confidence with the language (statements 5 and 7). Only learning to use the NLP spelling strategy might have been a challenge for some of them. Not only they needed to learn new key content words but also learn a complete new strategy in a foreign language.

As a consequence, students' answers indicating difficulties with the strategy was definitely expected. Surprisingly, not a single student was completely negative about the simplicity of the NLP spelling strategy. The same way, only one student noted that this strategy did not give him confidence with the language. A possible explanation for this is that they probably assumed that they would eventually get to master it. Notwithstanding, an average of 79% of students answered positively to most statements whilst only 11% were indecisive or just 1% was negative about the statements presented in the beliefs test. As a consequence, and to a large extent, students in the experimental group endorsed the NLP strategy spelling.

If we now turn to the percentage of students who validated the NLP spelling strategy as efficient and the comparison with the percentage of tests beyond average scores the chart below illustrates the breakdown of results.

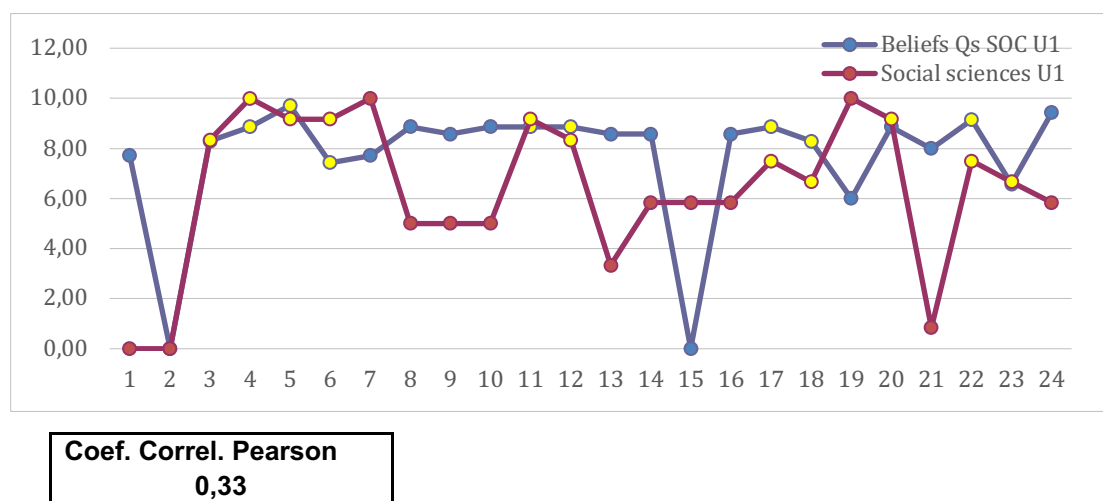
Chart 15: Experimental group Effectiveness chart Social Science unit 1



We can observe that the experimental group declared more positive beliefs than good outcomes in the Social Science unit 1 spelling test. 92% of students endorsed the NLP spelling strategy used as efficient whilst just over half the experimental group, 54%, passed the spelling test exceeding the average scores. Hence, 38% of students did not report connections between beliefs and spelling performance. These results when compared to the results obtained from the control group show that results in spelling tests are very similar with 54% of tests above the average score. This being said, the percentage of students who validate the NLP spelling strategy is wider since 17% more of students believed this strategy to be more effective than copying words in this group. Hence, even though results in spelling tests were similar in both groups, students in the experimental group seemed more engaged and motivated towards the practice of the NLP spelling strategy. Therefore, validating the NLP strategy substantially. Conversely, students in the control group began to feel bored and a bit disappointed with copying words as a spelling strategy already in the second unit they were putting it into practice. This explains the difference among groups validating each strategy.

A more detailed account of students' individual results in beliefs and spelling tests is presented in the next figure.

Figure 10: Experimental group Social Science Unit 1 Pearson's correlation



This figure presents the correlation between the two measures aforementioned. As shown in figure 10, the experimental group indicated a moderate correlation index of 0,33. Interestingly, the Pearson's correlation index is not only higher than the one presented in the control group, but also it is the first time that there is a moderate correlation among tests. This is particularly important since it is the first time that students' beliefs were somewhat in accordance with spelling performance. Not only students in the experimental group were validating the strategy as effective but this effectiveness was reasonably being reflected in their spelling tests. Furthermore, taking into account the +/- 20% of acceptance in both tests, there were 11 students who presented fair correlation between beliefs about the NLP spelling strategy and spelling performance. Six of them (students 3, 5, 11, 12, 20 and 23) match or almost match completely their results in both tests. The other 5 students are not more than 1-point difference between tests. All students presented scores above the average level in both tests.

Interestingly, 4 students (student 4, 6, 7, 19) noted better scores in spelling tests than positive beliefs. The only ones quite far in scores in both tests were student 7 and 19. Student 7 got an exceeding score in the spelling test (10) but pointed out uncertainty about the NLP spelling strategy being fun or interesting (statement 2), simple or easy (statement 5) in the beliefs test. The lower scores in these statements made her test have an equally lower average despite the result in the spelling test. Student 19 was unsure about most aspects in the beliefs test. He only assessed positively the statement in which they had to decide whether the NLP spelling strategy was fun or interesting (statement 2). The rest of the statements in the beliefs test were uncertain to the exception of the statement related to motivation towards the learning of new words that he assessed negatively. Despite his

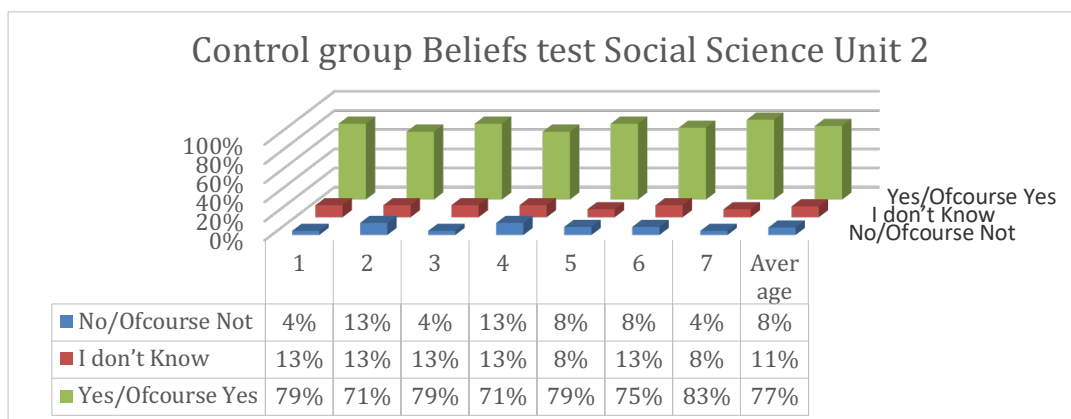
answers, he got an exceeding score in the spelling test (10). This raises the question of whether good or more able students, regardless their opinions and attitudes towards the strategies used in class, can have good results in tests.

Another important remark is that student 1, diagnosed with severe dyslexia, indicated high positive beliefs towards the strategy although her spelling test score was 0. Even though this will be treated in a different section (see section 6.2.9), it is worth saying pointing out that the motivation and determination for this student to learning was exceptionally high. In addition to this, her desire to be accepted by the teacher may have influenced her answers and results in the beliefs tests.

Finally, it is essential to mention that student 2 did not take any of the tests this week and that student 15 did not take the beliefs test although she did take the spelling test the following day with fine results.

After reviewing data and results from Social Science unit 1 in both groups studied, let us examine data from Social Science unit 2. The graph below illustrates the proportion of positive, uncertain and negative answers reported in the control group in the beliefs test before Social Science unit 2.

Graph 21: Control group Beliefs test Social Science Unit 2



The graph above reveals that the most approved statement was that copying words gave them more confidence with the language with 83% of positive answers (statement 7). Thus, copying words made them feel comfortable probably because they knew exactly what was expected from them. This was followed by the fifth statement regarding the simplicity of copying words as a spelling strategy with 79% of positive answers. With the same percentage of positive answers, 79%, we can see that the students thought that

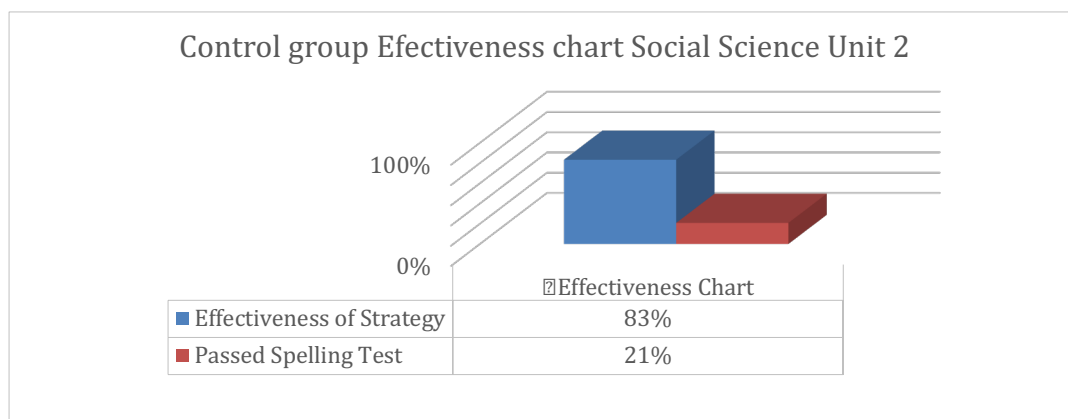
copying words would help them become better spellers and that copying words helped them to concentrate best (statements 1 and 3).

Nevertheless, 13% were doubtful about copying words helping them to become better spellers or helping them with concentration. Similarly, 75% of students believed that copying words motivated them to learn spelling but another 13% was not so sure that copying helped their motivation (statement 6). These results are particularly interesting since this is the last test they did in the first term. Consequently, they had already some idea about their results throughout the term and seemed to doubt about the efficacy of this strategy. Finally, 71% of students considered that copying words was fun and interesting and that this would help them to learn the spelling of difficult words in English (statements 2 and 4).

In both statement, 13% were unsure or negative about the same aspects. Hence, 26% of the group was not validating these aspects and consequently showing lower opinions towards the efficacy of copying words as a spelling strategy. In addition to this, to a considerable extent, they were noting that copying words seemed a boring or dull activity. All this indicates a lower perception of copying words as an effective strategy in the control group. In any case, a large percentage of students, 77% answered positively to most statements in this second Social Science test whilst only 11% were uncertain and 8% negative about copying words for spelling practice. Despite the doubts in some statements, when all statements are analysed, still most of students indicated that copying words worked for them in a high proportion.

In an effort to measure the students who validated the strategy as efficient the average of students' results in the beliefs test were weighted to average scores above 6 points in the spelling test. This was done in order to calculate the relationship between beliefs and spelling tests in the same unit. The chart below presents the proportion of students who validated copying words as an effective strategy compared to the proportion of spelling tests above the average score.

Chart 16: Control group Effectiveness chart Social Science unit 2

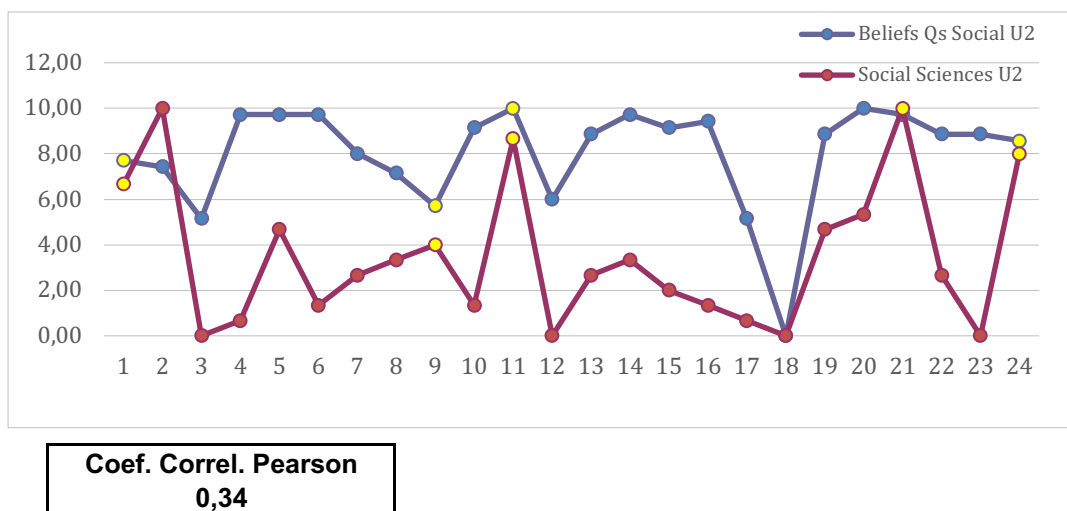


This chart displays an overview of the average results (above 6 points) in both the beliefs and the spelling test. It is noticeable that the control group reported significantly more positive beliefs than positive results in spelling tests. Once more, positive beliefs towards a specific spelling strategy did not translate into the same percentage of successful spelling tests. In this case, 83% of students validated copying words as an effective strategy whereas only 21% of students were showing this effectiveness in their spelling tests. Ergo, 62% of students failed to match the positive feelings towards copying words as an effective strategy and their actual results in this spelling test. This is indeed a worsening of results from Social Science unit 1 (21% difference) to Social Science unit 2 (62% difference) in the control group.

A possible explanation for this is the lack of motivation towards this practice. When students did the Social Science 1 test was mid-November whilst the last Social Science test was conducted right before Christmas holidays. Students in the control group had been copying words every day for a 10-minute period over a whole term. However, most days some students did not have time to copy the words required in class and they took them home as a homework activity. This activity, in class or at home, was seen as a chore rather than a fun activity to do. Even though they knew that copying words would help them with spelling, which would answer to their positive beliefs towards this practice, in some cases they were failing to do so. As a matter of fact, Social Science unit 2 spelling test was the worst unit recorded in terms of scores with 75% of tests within the poor zone (see section 6.2.5). This was either a problem of motivation or that they were too tired to comply with this task. In addition to this, weather words may have been considered harder than other vocabulary in other units (i.e., atmosphere, measure, rain gauge, etc.).

As far as the results of each participant's beliefs and spelling tests are concerned, the Pearson correlation was implemented to seek for connections between their results. The next figure portrays the control group's performance in Social Science Unit 1 in the beliefs and spelling tests.

Figure 11: Control group Social Science Unit 2 Pearson's correlation



There is a moderate degree of correlation of 0,34. In this case, the control group slightly improved results from Social Science unit 1 (0,27 correlation index). In spite of the worsening of results in spelling tests, the equally worsening of answers in the beliefs test made possible that correlation was closest among tests.

The figure above highlights that beliefs were over the average of 6 points in most cases except for student 18 (ASD, student) that did not take this test and student 17 that reported beliefs lower to the average range. Student 17 was a difficult student that failed all key subjects in every term (i.e., language, maths, English). She had already repeated the previous year and even though she had an individual methodological adaptation she did not manage to comply with academic work. Since she knew that her efforts were not meeting any of the expectations, her answers in the beliefs test were not as positive as in other cases. In addition to this, she failed to submit her words every day or even to do so as part of her homework. This may be the reason why she notes that copying words was not particularly useful to her.

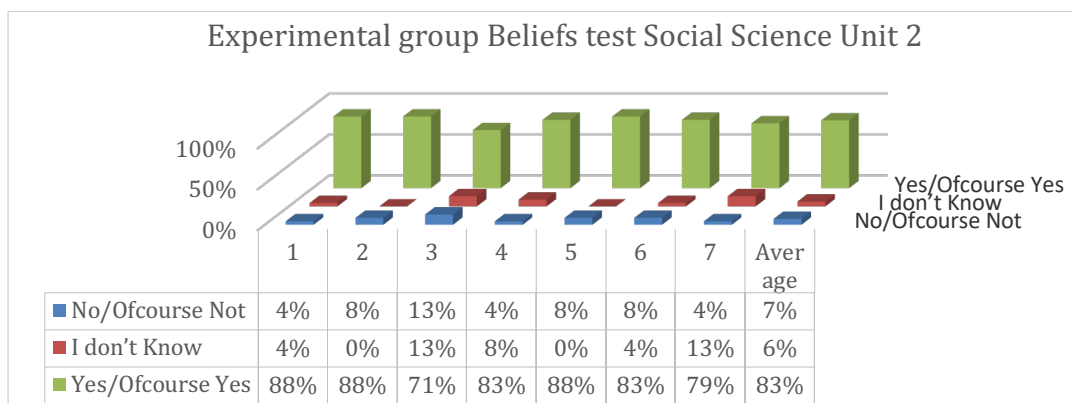
With regard to spelling tests, they were mostly below the same average score. As it has been previously commented this is the worst unit in terms of spelling scores with 75% of tests within the poor zone. There were only five students that showed fair relationships between scores in both tests when the $\pm 20\%$ margin of tolerance is applied.

In this regard, all of them except student 9 presented scores above the average range of 6 in both tests. Again, student 9 gave the lowest score to the statement related to copying words as fun or interesting (statement 2), statements related to copying words being easy (statement 5) or copying words as a means to promote confidence with the language (statement 7). Clearly, she was losing interest in copying words for spelling practice and made it explicit in this beliefs test. In addition to this, she was doubtful to most statements except for the ones related to helping her become a better speller (statement 1) and motivation towards learning new words in the foreign language (statement 6). Although she knew that this would help her become a better writer and she was motivated to learning, she was unsure about copying words as the best way to learn this.

Despite the fact that he did not show close correlation between tests, student 2 presented lower beliefs than results in spelling tests. In this case, it is a very good student that despised copying words as he found it dull and a waste of time. Even though he confirmed that this practice would help him with spelling, he still was not enjoying the activity. This is a rather troubling result since students may have answered the beliefs test as an escape to express their feelings towards the strategies put in to practice. If they liked it they gave the highest scores, if they did not like it they gave the lowest scores. Again, this raises the question of maturity and students not being able to reflect about a particular strategy without investing all their feelings.

Following the examination of the Social Science unit 2 in the control group and triangulated results of beliefs and spelling tests, I will now analyse the same data for the experimental group. The next graph evinces the experimental group beliefs test answers for the second unit of Social Science.

Graph 22: Experimental group Beliefs test Social Science Unit 2

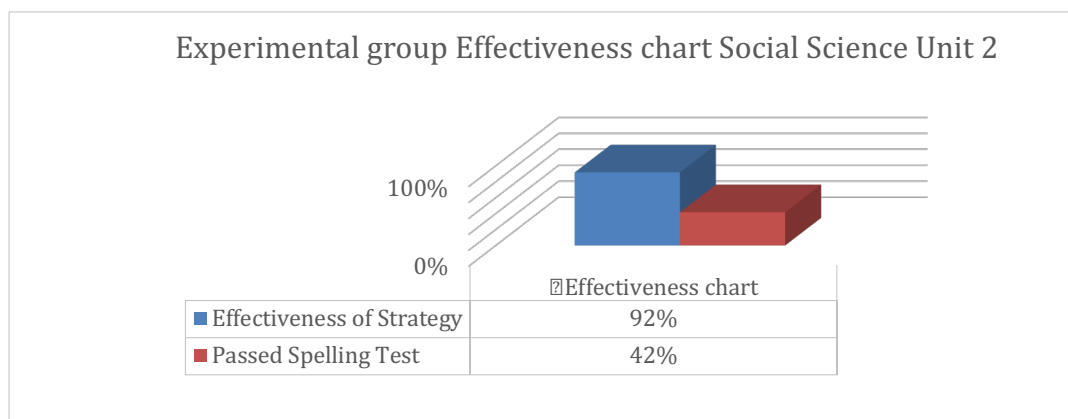


As can be seen from the chart above, the results obtained from the beliefs test before taking the spelling test of Social Science unit 2 are widely positive. 88% of students affirmed that the NLP spelling strategy helped them to become better spellers (statement 1), they believed that the strategy was fun and interesting (statement 2) and simple and easy to use (statement 5). However, 8% disagreed that the NLP spelling strategy was not that fun (statement 2) or easy to use (statement 5). Bearing in mind that 8% approximately corresponds to two students it can be said that most students in the experimental group find the NLP spelling strategy attractive and simple after a whole term of practice. 83% of students answered positively to statements 4 and 6 related to the learning of difficult words in English and motivation.

In this case, among 4% and 8% of students were doubtful or negative about the same facts. 79% believed that the use of the NLP spelling strategy to learn spelling gave them more confidence with the language (statement 7). Nevertheless, 13% of students were uncertain and 4% believed that this strategy did not increase their confidence. Taking into account the implicit difficulty of learning a new strategy in the foreign language, it can be explained how a strategy that still did not make feel comfortable to some students would not increase their confidence with the foreign language. Finally, the least favourable statement was number 3 with 71% believing that the use if this strategy helped them with concentration but 13% of them feeling unsure or negative about the same aspect. A possible explanation for this is that the NLP strategy consisted in 6 different steps to follow. Sometimes, students lost track between steps or had small arguments among pairs. This indeed made difficult concentration to some of them. All in all, positive beliefs about the use of the NLP spelling strategy overtook uncertain or negative beliefs to an 83% of positive answers in this test. Consequently, to a large extent the NLP spelling strategy was being endorsed by most students regardless some doubts in some specific statements.

Further analysis made me triangulate students' answers in the beliefs test and spelling test of the same unit in the experimental group. The chart that follows provides the proportion of students validating NLP spelling strategies as useful strategies to learn spelling and the proportion of students passing the spelling test above the average score.

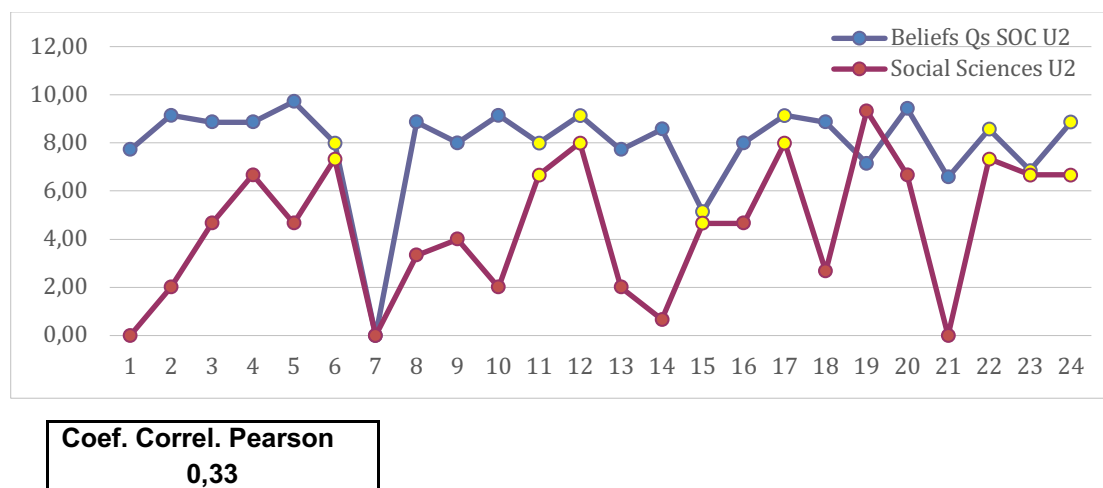
Chart 17: Experimental group Effectiveness chart Social Science unit 2



Once more, what stands out in this chart is the high rate of validity that students gave to the NLP spelling strategy as an effective tool. 92% of students supported the visual NLP spelling strategy as useful with an average of six or beyond in their beliefs test. However, 42% of students passed the spelling test surpassing the average score. This means that half the group were not able to match their encouraging beliefs to the actual performance in spelling tests. In this case, the experimental group shows a worsening of results from a 38% difference in the first Social Science unit to a 50% difference in the second unit. Again, this result may have been influenced for the proximity of Christmas celebrations at school, holidays and the tiredness and fatigue accumulated throughout the term. Furthermore, the worsening of results can also be an explanation to the complexity of weather words that are least common to students.

A more detailed account of the specific correlation among beliefs and spelling tests for Social Science unit 2 in the experimental group is described in the Pearson correlation coefficient applied in the next figure.

Figure 12: Experimental group Social Science Unit 2 Pearson's correlation



This figure reveals the degree of correlation among tests in Social Science unit 2 for the experimental group. All in all, the results of the correlation analysis indicated that there is a moderate degree of correlation index of 0,33. In this particular case the experimental group maintained the index of correlation from Social Science unit 1 to unit 2. When comparing these results to results analysed in Natural Science, it can be observed how students in the experimental group always showed a better relationship among results in tests in Social Science. This raises the issue of students' preferences towards both subjects. They may have preferred Social Science vocabulary or topics against Natural Science vocabulary and thus, getting better results in tests.

Additionally, bearing in mind that a +/- 20% difference is accepted as a match in results, we can observe how 8 students succeeded to equal beliefs to actual performance in spelling tests. Only student 15 showed a correlation below the average score in both tests. As previously commented, this student had difficulties with the foreign language that made her be very explicit every time she was asked about her skills. As a matter of fact, in every beliefs test she was always the student with the lowest beliefs. Although she was not the student with the lowest scores in spelling tests, her scores were always within the poor or risk zones. For instance, in this unit, she claimed that the NLP spelling strategy was not efficient for her with an average in the beliefs test of 5,14 and had a spelling test with a poor result of 4,67. Not only did she lack self-confidence or disliked being taught in English, but also she was certain about the difficulties she had with the foreign language. The rest of students who showed fair connections among tests were all above the average score (6 points or more).

Moreover, student 19 was the only student that showed lower beliefs than actual performance in spelling tests. He had answered in the test that the NLP spelling strategy was no fun and that this strategy did not motivate him to learn more words in English. His answers in the beliefs test, regardless the 7,14 of average in the whole test and his exceeding score of 9,33 in the spelling test made this happen. Although he was a good student, he was beginning to feel bored and tired about using this strategy every week. This is not surprising at all taking into account that the weariness of the term influenced many students. Finally, it is fundamental to say that student 7 did not take either test, as she was absent for a couple of days.

Having analysed the results of units 1 and 2 of Social Science studied during the first term, I will summarize the main results obtained from this section.

6.2.6. First term: Summary of Social Science Beliefs tests

In summary, the control as well as the experimental group, felt positive about the spelling strategies used during the first term. In the control group around 75% of students answered positively to all statements in the beliefs test whilst only 8% were negative or uncertain about the same statements. The control group continued to point out their discouragement towards copying words as spelling practice in some of the statements in the test. Notwithstanding, they were validating the strategy as effective to a large extent in both Social Science units. The highly validation of copying words as a spelling practice may have been due to the confidence that gave students to know exactly what was expected from them.

These results slightly increased when looking at the experimental group since around 81% of students believed that the NLP spelling strategy was effective for them. In this case, there were around 6% of uncertain answers and a less than 4% of negative answers. Hence, the experimental group seemed a little bit more comfortable using the NLP spelling strategy than the control group copying words for spelling practice. As a matter of fact, it was highlighted how positive attitudes towards the NLP spelling strategy can be understood as something enjoyable to learn for students.

Although this was an expected result, some students in the experimental group noted to have difficulties with the NLP spelling strategy in both units. In practical terms, there were some compound words in the first Social Science unit and there were complex weather words in the second unit. This was also highlighted as difficulties that students may have been considered when answering the beliefs test. Not only were they learning

new key content vocabulary beyond their level of competence but also they were learning a complete new strategy in the foreign language. This indeed may have added some difficulty and self-consciousness to some students that they noted in some statements of the beliefs test.

Following to this, I analysed the effectiveness chart that it is the result of calculating an average above 6 points in each test, beliefs and spelling, to compare results. This was done with the intention of finding possible connections between beliefs and spelling performance. Alike Natural Science units, positive beliefs about the spelling strategies used dominated the results. Nevertheless, promising results in this chart from Social Science unit 1 decrease in unit 2. On the one hand, the control group goes from 21% to 62% of students not being able to match beliefs and performance. On the other, the experimental group goes from a 38% to 50% of students failing to equal beliefs and spelling performance.

Additionally, the percentage of positive beliefs increase in the control group from 75% to an 83% when their spelling tests results dramatically lower from an initial 54% to a 21%. Conversely, the experimental group maintains positive beliefs to a 92% from one unit to the other whilst decreasing spelling tests results from 54% in the first unit to a 42% in the second unit. Therefore, these results may be interpreted with caution. This is because positive beliefs towards the strategies used in each group remained intact in the experimental group or even improve in the control group from one unit to the other. Nevertheless, results in spelling tests worsened considerably from one Social Science unit to the other in both groups.

Hence, positive beliefs towards the spelling strategies put into practice did not translate into positive results in spelling tests. In this sense, it was highlighted how Social Science unit 2 tests were conducted the last week of the term. Christmas celebrations and holidays were close and students had been working really hard throughout the term. Consequently, the weariness and tiredness of the term may have influenced results. In addition, weather words from Social Science unit 2 may have been more difficult to learn since they were uncommon to students (e.g., atmosphere, rain gauge, etc). In any case, positivism towards the spelling strategy used was always larger in the experimental group.

Finally, the Pearson correlation coefficient was applied to determine the relationship between beliefs and spelling performance in each individual student and group. As mentioned, an acceptable correlation of +/-20% difference or margin of tolerance was allowed. Data recorded shows that the correlation among tests was low in

the first unit (0,27) and moderate in the second unit (0,34) for the control group. On another note, the experimental group maintained a moderate correlation of 0,33 in both Social Science units. In both groups, it can be observed how mostly the same students were able to match their positive beliefs about the spelling strategies used and their spelling performance. A possible explanation for this is that students' maturity to answer statements in the beliefs test plays an important role. This may have influenced these results since those students with a higher maturity degree were more able to assess effectively a strategy that worked or did not work for them.

Overall, these results suggest that correlations between positive beliefs and positive results in spelling tests were either low or moderate. The experimental group's beliefs were always higher than the ones in the control group and thus they validated the NLP spelling strategy to a larger extent. Whilst students in the control group indicated a lost in motivation towards copying words for spelling practice, students in the experimental group seemed yet engaged towards the use of the NLP spelling strategy.

During the analysis of this chart, particular students' cases have been addressed. Some cases, such as students diagnosed with dyslexia, will be studied in a different section of this chapter (see section 6.2.9). Other students have been studied thoroughly to understand the reasons behind their results. For instance, some students in the control group noted lower beliefs than actual performance in tests. This may have been due to their discouragement towards copying words for spelling practice. This raised a question of students answering what they liked or did not like about the strategies rather than answering what it worked or did not work to improve spelling. In addition to this, the maturity of students to answer this beliefs test was also addressed as a possible consequence of such a difference between results.

The same happened in the experimental group. Again, four students in the experimental group indicated lower beliefs than results in spelling tests during the first Social Science unit. This made me wonder whether good students were good spellers regardless the strategies used to learn.

One surprising and encouraging result was that the correlation index in the experimental group passed from low in Natural Science to moderate in both Social Science units. This was considered important since it was the proof of students being more able to assess the NLP spelling strategy according to their results in spelling tests. This was also a possible indicator of students' preference towards Social Science against Natural Science.

In the next section, I will present the results of the current investigation in the role that learning styles have in the ability to produce spellings. Consequently, I will analyse the results in the Learning Channel Preference Checklist (LCPC) following the V (visual), A (auditory) and K (kinaesthetic) model of NLP. The results in this test will be triangulated and compared to students' results in spelling tests to find out possible connections between them.

6.2.7. First term: Learning Channel Preference Checklist results

In the following section, I will present the results in the Learning Channel Preference Checklist test (henceforth LCPC test). The main aim was to find the proportion of students whose preferred channel or representational system was visual, auditory or kinaesthetic (V-A-K). As mentioned in chapter 4 (see section 4.4.2), data for this study were collected adapting and translating O'Brien's Learning Channel Preference Checklist (1990) with the objective of using an already validated type of questionnaire. There was a set of 36 statements presented in three columns, 12 statements for each group of learners: visual, auditory and kinaesthetic. Each group of statements on the questionnaire measured the extent to which students preferred each representational system (V-A-K). Participants were asked to respond using a 5-point Likert scale ranging from almost always, frequently, sometimes, rarely to almost never. Based on students' answers, the sum of the score for each group of statements gave a result that was normalised using a simple percentage metric. The results recorded showed the percentage of V-A-K learning style in a particular student.

This questionnaire was taken home at the end of term one (December, 2019), together with a letter for the parents so they were informed about the purpose of the study. All questionnaires were done at home and therefore they were translated into Spanish so families could help their children answer all the questions. They had 3 complete weeks to submit the questionnaire back to their teacher. Due to the optionality of the questionnaire, not all students submitted it. 3 students in the control group and 4 students in the experimental group did not present the fulfilled questionnaire; thus, they did not participate in this part of the study. Additionally, results from the students already excluded from the investigation due to their specific needs and curricular adaptations were not considered either (see chapter 6, section 6.1). Consequently, 21 students in the control group and the experimental group respectively formed part in the present section.

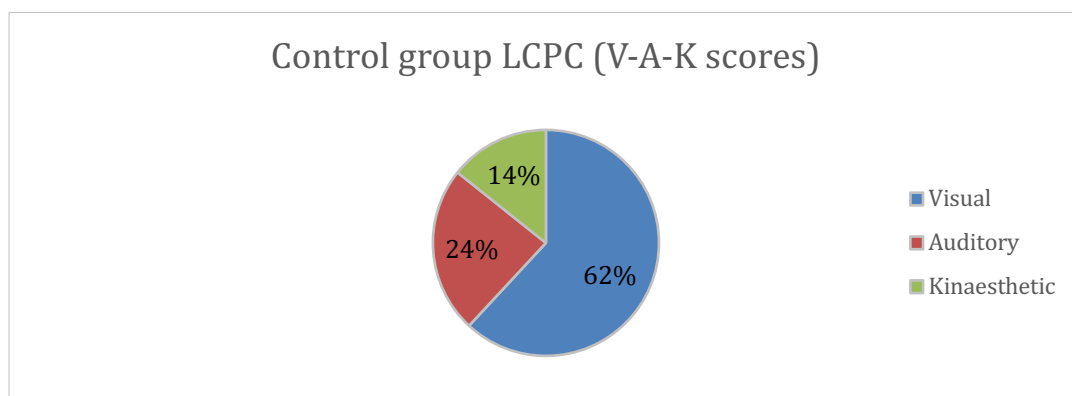
With the intention of learning the most preferred channel of preference or learning style in each group, the results were studied taken the sample of this group of 21 students. Later, a small sample was chosen with the purpose of obtaining connections about each student particular learning style and his/her results in the spelling tests taken at the end of each Natural and Social Science unit. A comparison group of 3 males and 3 females in each group were selected on the basis of the degree of each particular learning style. Hence, male and female students who showed the strongest visual, auditory or kinaesthetic results in this questionnaire were investigated specifically.

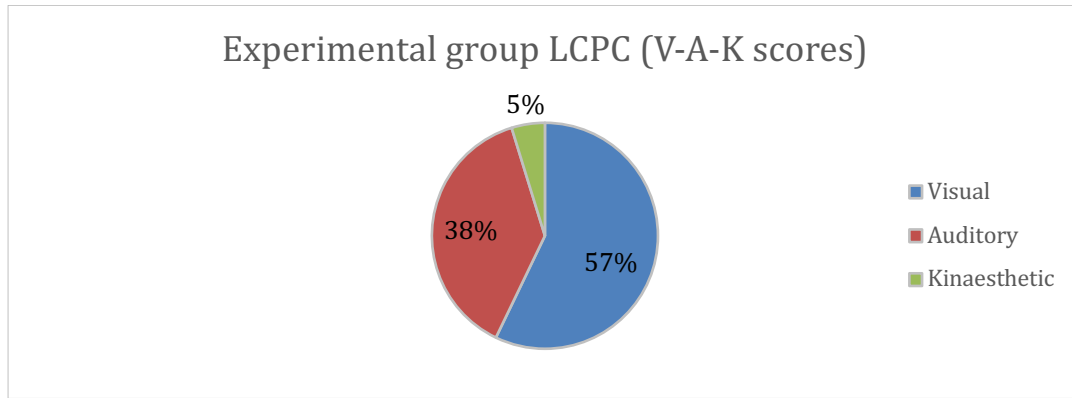
In the section that follows, I will attempt to explore the preferred learning channels or styles in each group. Furthermore, I will give a more detailed account of specific participants and I will compare their results on the LPCP questionnaire to their results in spelling tests to see what influence learning styles may have in their achievements.

6.2.7.1 First term: Learning Channel Preference Checklist results

Having defined what is meant by the LCPC questionnaire and the criteria for selecting students, I will now move on to discuss the results provided by the control and experimental group. In this sense, the table below illustrates the breakdown of the three main learning styles in each group.

Chart 18: LCPC results (V-A-K scores)





From the pie chart above we can observe that both groups' preferred learning style was visual. In the control group, well over 60% of students showed a visual preference for learning. Similarly, in the experimental group, just under 60% of students who responded indicated preference for visual learning style. In line with Afshar and Bayat's (2018) study of strategy use, learning styles and L2 achievements of 120 Iranian students of English for academic purposes in which male and female students indicated visual learning style as the most preferred. In the same vein, Chetty et. al.'s (2019) study about learning and teaching styles determining students' academic performances detected that most part of the 251 students interviewed had visual learning preferences. Comparison of the findings with those of other studies confirms that visual learning preference tends to be the most preferred among learning styles.

With regard to auditory learning style, around 40% of students in the experimental group and 24% of students in the control group reported that auditory was their preferred learning channel. Thus, the experimental group almost doubled auditory learners. Given that the experimental group benefited from a visual dominant spelling strategy, the fact that there were many more auditory learners could give an idea on whether they profited from this practice. The findings originated from this questionnaire contributed to respond some of the research questions presented in this study (see introduction).

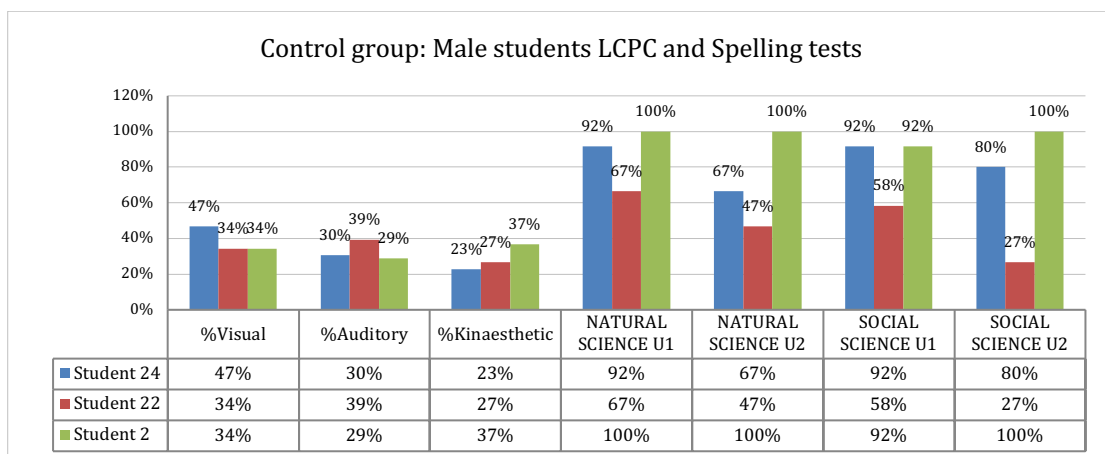
Finally, regarding kinaesthetic learning style, 14% of students in the control group and 5% of students in the experimental group referred to this style as their favourite. According to Derakhshan and Shakki (2018), kinaesthetic learners show high levels of proficiency in EFL contexts. Consequently, better results in the initial assessment in the control group would be in conformity with these results (see section 6.1.1). However, in the experimental group, there were no female students whose preferred learning style was

kinaesthetic. The only girl with dyslexia from this group recorded the highest score as a kinaesthetic learner although she was a bit stronger in the auditory part of the test by 1%. Since she was excluded in this part of the study due to her diagnosed dyslexia, the next student with the highest kinaesthetic score was selected. There were no similar problems with male students in any of the groups as the participants with the highest visual, auditory and kinaesthetic scores in the test did not have substantial learning difficulties.

Owing to the results obtained in the LCPC test, both groups show a similar proportion of learning styles being the visual style the most preferred in both groups followed by auditory and kinaesthetic. A note of caution is due here since Ginnis (2002) suggested that although there is a predominant sense or learning style, they complement each other. Thus, no one is entirely visual, auditory or kinaesthetic. These are called balanced students and they are able to comprehend information regardless the way it is presented. Notwithstanding, about 20% of students can only access information when it is presented in their preferred learning style (Ginnis, 2002). For that reason, in order to give an overall idea of the results obtained in spelling tests and their correspondence with students' learning styles, participants will be considered as completely visual, auditory or kinaesthetic in this study.

Moving on now to consider the particular cases in each group, in order to gain greater depth in the study, 3 female and 3 male students with a particular learning style preference were selected in each group. With regard to male students in the control group, the next chart illustrates their results in the LCPC test as well as their results in the spelling tests conducted during the first term (Natural and Social Science units 1 and 2).

Chart 19: Male students LCPC results and Spelling tests results (control group)



As can be seen from the chart above, student 24 (S24) was the strongest visual with 47%, 30% auditory and 23% kinaesthetic preference. Student 22 (S22) was the strongest auditory with 39% in this ranged followed by a 34% visual and 27% kinaesthetic. Student 2 (S2) was the kinaesthetic student with 37% of answers in this range, 34% visual and 29% auditory preference.

At first glance, we can see that the student with the best scores in all tests was the strongest kinaesthetic student (S2) with a 100% of success in 3 of the units and 92% in the first unit of Social Science (second unit in the term). His results were followed by S24, the visual student, with 92% of success at the beginning of the term (Natural and Social Science unit 1) and a worsening of results in the second part of the term with 67% of success in Natural Science unit 2 and 80% in Social Science unit 2. Finally, the student with worse results was S22, the auditory student. He obtained 67% and 58% of positive results in the first part of the term (Natural and Social Science unit 1 respectively). However, these results dramatically decreased in the second part of the term in Natural Science unit 2 with 47% and 27% of good performance in spelling tests in the second unit of Social Science and last unit of the term.

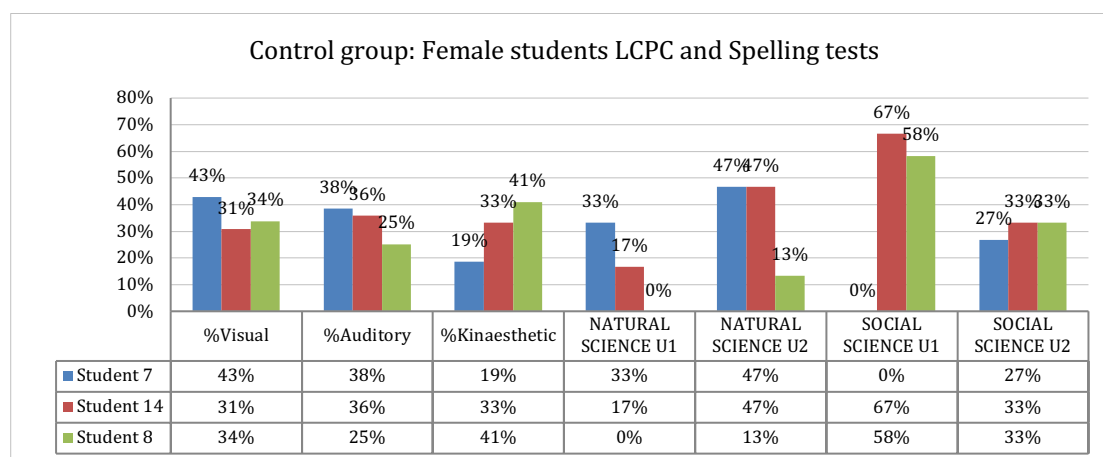
Consequently, the best male speller in the control group was the kinaesthetic, followed by visual and auditory respectively. As noted earlier, one possible explanation for this might be that kinaesthetic learners tend to have high levels of EFL proficiency (Derakhshan and Shakki, 2018). When comparing spelling tests results with the final grades of the academic year, S2 was the student with the highest grades in all CLIL subjects. The same way, the final grades of the visual student were better than the grades of the auditory student. This raises the question of whether learning styles have to do with academic performance, or it is a matter of students' capacities and abilities towards the foreign language.

Concerning female students in the control group, within all participants, there were 3 students who were dyslexic, two students in the control group (students 3 and 12) and one student in the experimental group (student 1). This study found out that the female students whose strongest learning style was the auditory channel were all dyslexic. This outcome is contrary to that of Benmarrakchi et. al. (2017) in their study about the use of ICT supporting dyslexic who found that the majority of dyslexic students tended to be visual. Nevertheless, more specific information about students with dyslexia in my class will be offered at the end of this chapter (see section 6.2.9).

In the attempt to choose students whose results were not subject to any learning difficulty, these participants were omitted in this part of the study. In addition to this, student 17 in the control group was a student with an unstable social situation. She had repeated the first year of primary and failed all subjects in the second year. She was waiting to be diagnosed for the school’s psychologist since she presented some learning difficulties that needed to be addressed. Due to COVID 19, she could not be assessed in the school year 2019/2020. Due to her difficulties, she will be part of a small group of compensatory education in the school year 2020/2021. Consequently, she will not be considered as a reliable student in terms of results.

By virtue of this, it was especially difficult in the control group to find a female student whose preferred learning style was auditory. As noted, three girls with the most auditory preference were two dyslexic students, followed by the student pendant of pedagogical intervention. Additionally, the fourth female student with a strong auditory preference was already selected as a visual student. Consequently, it was the fifth female student with the highest auditory score the one selected for this study in the control group. The breakdown of results in LCPC tests and spelling tests in the first term for female students in the control group is displayed in the following chart.

Chart 20: Female students LCPC results and Spelling tests results (control group)



From the graph above we can see that student 7 (S7) was the strongest visual student with 43% visual, 38% auditory and 19% kinaesthetic preference. Student 14 (S14)⁶¹ was the strongest auditory student with 36%, a 31% of visual preference and 33% of kinaesthetic preference. Finally, student 8 (S8) was the strongest kinaesthetic student with 41%, 34% of visual and 25% of auditory preference. The most balanced student with all scores around a 30% was S14, the auditory student.

The results of the female students in the control group are dramatically worse than the male students with none a single spelling test with a 100% of success. The best student in this term with only one spelling test above 60% is the auditory student (S14) in Social Science unit 1 (second spelling test). She did not pass any other test this term, as her results are lower than 50% of success in the rest of spelling tests.

As for the visual student (S7), she did better in Natural Science when comparing her results with Social Science. However, not a single test was passed above the average level. Additionally, Social Science unit 1 spelling test was a 0% success with not a single word correct. Finally, regarding the kinaesthetic student (S8), she had the worst performance of all three students in Natural Science units. However, she performed better in Social Science unit 1 with 58% of success (almost 10% worse than the auditory student) and 33% of success in Social Science unit 2 (matching results with the auditory student).

In the female students' case, the auditory student (S14) had the best scores in spelling tests. Nevertheless, her spelling scores were much lower than the male students in the control group. In addition, S14 was the student with the best grades in all CLIL subjects when they were compared to the other female students' grades. Consequently, this time the hypothesis of the kinaesthetic students having higher levels of proficiency in EFL cannot be supported as she was actually had the worst spelling scores of them all.

According to male and female results in the control group, we can infer that learning styles are not related to spelling performance. In the male students' case the kinaesthetic student was the one with the best spelling scores. In the female students' case, the auditory (auditory/visual) student was the student with the best spelling scores. Both of them had the best grades in CLIL subjects when they were compared to the other students. In addition to this, male and female students with the highest spelling scores,

⁶¹ S3, S12 were excluded due to dyslexia. S17 was excluded due to a delay in diagnosing her learning difficulties. Therefore, I had to find another female candidate for this part of the study (S14). S7 was 2% more auditory than S14. However, since S7 was already selected as the strongest visual student (43% visual), she was not considered as auditory. Thus, S14, even though she was 2% below S7 as an auditory student was considered the female with strongest auditory learning style preference. S14 was the fifth and last female with strongest auditory inclination.

were almost balanced in all V-A-K with around 30% of preference in all learning styles. The findings reported here suggest that those students with a more balanced relationship between learning styles are more successful than others.

Turning now to results in the experimental group, first I will analyse the results of male students in this group to continue analysing results of female students. The next chart shows the results of LCPC tests and spelling tests of male students in the experimental group in the first term.

Chart 21: Male students LCPC results and Spelling tests results (experimental group)

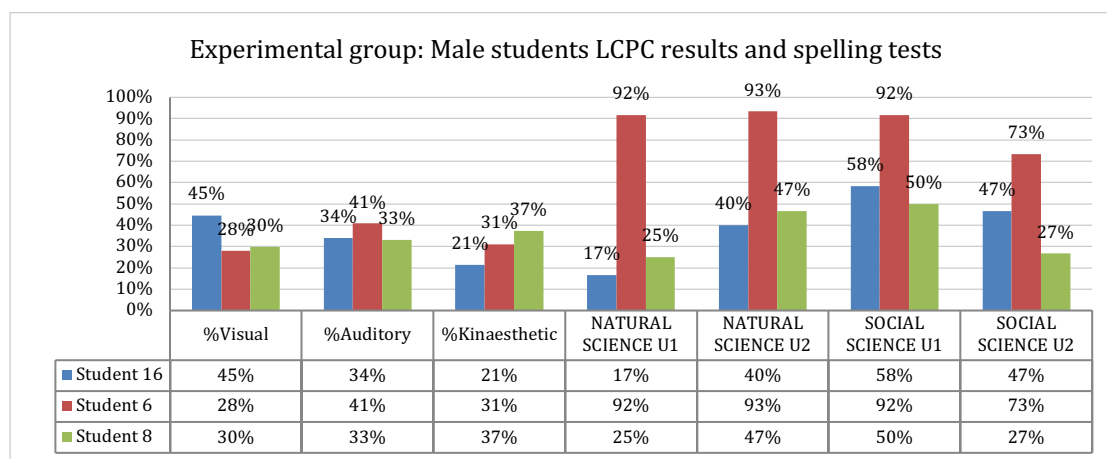


Chart 21 presents the summary of statistics of LCPC tests and spelling tests results in the first term for the experimental group. It can be seen that student 16 (S16) was the strongest visual student with 45%, 34% auditory and 21% kinaesthetic preference. The strongest auditory student was student 6 (S6) with 41%, 31% kinaesthetic and 28% visual preference. Finally, the strongest kinaesthetic student was student 8 (S8) with 37%, 33% of auditory and 30% of visual preference. Interestingly, this is the only student with kinaesthetic learning preference in the experimental group. In addition to this, the kinaesthetic student (S8) was the most balanced in terms of learning styles with all VAK styles around 30%.

Closer inspection of the table shows that S6, the auditory student, got the best results in spelling tests in this term. He obtained more than 90% of success in three of the units and more than 70% in the last unit of the term. Consequently, S6 obtained exceeding and successful scores in all tests. The second best student was the visual learner (S16) although his results were not particularly successful. He did not pass three spelling tests

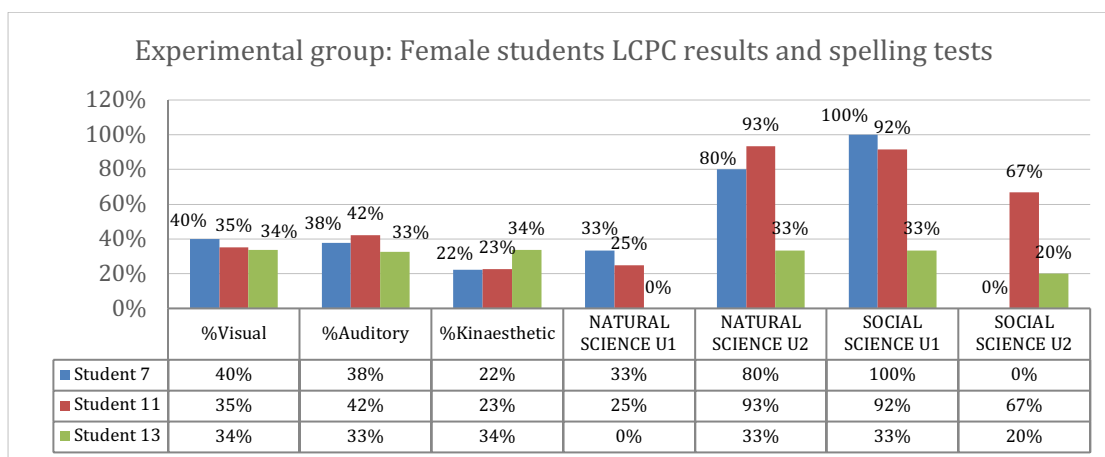
failing all Natural Science units and the last unit of Social Science. He did pass the first Social Science unit although his test was within the risk zone.

Finally, the worst performing student was the kinaesthetic (S8) who failed all spelling tests with three tests in the poor zone and Social Science unit 1 within the risk zone. In addition to this, S8, although mainly kinaesthetic, was also the most balanced student in all 3 learning styles. Contrary to previous results in the control group, this student did not perform better in spelling tests than others. Thus, the earlier suggestion of balanced students being more successful than others cannot be sustained.

Regarding the comparison between scores in spelling tests and final grades in CLIL subjects, S8, the kinaesthetic student, was also the student with the highest grades. His final grades being the best of all 3 male students further support the hypothesis of kinaesthetic learners having a higher level of proficiency (Derakhshan & Shakki, 2018). However, in this case, these are rather troubling results as higher level of performance in CLIL subjects do not match with spelling performance.

As for the results of the females in the experimental group, the next chart depicts the results of the LCPC test and spelling test scores during the first term.

Chart 22: Female students LCPC results and Spelling tests results (experimental group)



As it can be seen from the chart above, student 7 (S7) was the visual learner with 40%, 38% auditory and 22% kinaesthetic preference. Student 11 (S11) was the strongest auditory student with 42%, 35% of visual and 23% of kinaesthetic preference. Finally, student 13 (S13) was considered the strongest kinaesthetic learner since there was not a single female student in this group whose preference was kinaesthetic. However, she had 34% in both, kinaesthetic and visual preference and a 33% of auditory preference. Hence, S13 was the most balanced student with regard to learning styles.

As far as spelling tests scores are concerned, we can see that the most successful student was S11, the auditory learner. Although she did not have any test with 100% success, the average of all spelling test was the highest of all 3 students. Furthermore, she did not have any test with 0% of success as the other students. She did not have good results in the first spelling test (Natural Science unit 1) as she only had 25% of success. However, Natural Science unit 2 and Social Science unit 1 were above 90% of success. Finally, S11 had the highest score in Social Science unit 2 spelling test with 67% of success. This student's scores also match her final grades in all CLIL subjects as she was also the student with the best grades of all female students in the experimental group. It can be suggested that having good results in spelling tests seem to rely more on the academic capacity of the student rather than her learning style or the spelling strategy used.

The second best student was the visual learner with 40% visual preference, 38% auditory and 22% kinaesthetic preference. She did not pass the first Natural Science unit although she had the best performance of all three students with 33% of success. She improved in the middle of the term with 80% of success in Natural Science unit 2 and 80% of success in Social Science unit 1. Nevertheless, she dramatically failed Social Science unit 2 with 0% of success.

Finally, the worst scores in spelling tests belonged to the kinaesthetic learner. She was the most balanced student in terms of learning styles. However, her spelling tests scores were below expectations since she did not pass any single spelling test. Given that the sample size was limited, it could be argued that the hypothesis of balanced students getting better scores in spelling tests would need a further number of participants to be proven in this case.

6.2.7.2. First term: Summary of results in the Learning Channel Preference Checklist and Spelling tests

In summary, it has been shown from these results that visual was the most preferred learning style followed by auditory and kinaesthetic in both groups of students. The first aspect to be highlighted was that the percentage of auditory students was 14% higher in the experimental group. Thus, the first point was to analyse whether these students benefited from a visual spelling strategy. Second, there were more kinaesthetic learners in the control group. Given that Derakhshan and Shakki (2018) argue that kinaesthetic

learners tend to have higher levels of EFL proficiency, I found a possible reason for the better results in the initial assessment in the control group. Furthermore, it was stated that there were students that were balanced in terms of learning styles, However, it was assumed that the highest score in a specific learning style made them a visual, auditory or kinaesthetic student respectively.

As far as results of male and female students are concerned, male students in both groups showed better results. As for male students in the control group, the kinaesthetic learner was the best speller and also the student with the highest grades in CLIL subjects. Given these results, Derakhshan and Shakki's (2018) hypothesis of kinaesthetic learners having a high level of EFL proficiency could be supported. These led to question whether learning styles had to do with academic performance.

Continuing with male students in the experimental group, the auditory learner was the best speller followed by the visual student. It was highlighted how auditory and visual strength was an advantage when it comes to spelling. However, the kinaesthetic learner was the student with the best grades in CLIL subjects. Again, this would reinforce the hypothesis of kinaesthetic learners having higher levels of EFL proficiency supported before even if their spelling was not as good as the auditory learner. Nevertheless, the male kinaesthetic student in the control group was the only kinaesthetic student being the best speller performer or having the best grades in CLIL subjects. Thus, this hypothesis was another source of uncertainty due to the limited sample.

Regarding female results, in both groups, the kinaesthetic student was the worst speller. Therefore, once more, the initial hypothesis of kinaesthetic students being at a higher level of proficiency could not be supported by these results. In addition to this, the auditory student was the best speller followed by the visual and kinaesthetic students in both groups. Equally, not only the auditory student was the best speller but also was the student with the best grades in CLIL subjects in both groups. Consequently, it was stated how the ability with the language was a lot more important than learning styles when it comes to spelling.

Finally, even though students were considered entirely visual, auditory or kinaesthetic, balanced students were also pointed out. At first, it seemed that balanced students were better spellers. However, in the experimental group, both male and female kinaesthetic, were balanced students in terms of learning styles although they were also the worst spellers' performers.

Hence, several hypotheses have been identified in this section. On the one hand, kinaesthetic students having a high level of EFL proficiency. On the other, having best grades in CLIL subjects also being the best spellers and finally balanced learning styles being an advantage to spelling. Despite that, not a single hypothesis could be proven. However, with a small sample size, caution must be applied, as the findings might not be conclusive.

The following part of this paper moves on to describe in detail the qualitative analysis of peer and self assessment questionnaires done by students during the process of learning how to use the different spelling strategies. Additionally, all important notes made by students, language assistants and myself will be summarized in an attempt to find possible explanations for the results obtained.

6.2.8. First term: Other questionnaires: what students say about their performance; self and peer assessment questionnaires, comments and letters to the teacher

In this section, I will present the main findings of both the self and peer assessment questionnaires. In addition, I will remark the main comments done by students in the different handouts provided during the process of learning the spelling strategies, copying words in the control group and NLP spelling strategy in the experimental group. Furthermore, the most relevant notes taken by language assistants and myself in the observation rubrics and research journal will be offered.

With the intention of analysing the impact of the spelling activities carried out in class, I introduced students to self and peer assessment rubrics regularly. Likewise, comments that students thought were relevant for the teacher regarding their spelling performance could be added in this rubric and will also be examined. Additionally, at the beginning, mid and end of the term students were provided with a handout called letters to the teacher in which they could write about any kind of comment, opinion, concern or wish they had along the term. At the same time, language assistants and myself recorded notes on observation rubrics and the research journal during the lessons. Nevertheless, due to the broad scope of this study, only the principal findings will be reviewed.

With a focus on analysing the most relevant data, the results of these questionnaires will be considered as additional information to support or refute other ideas already

presented in this paper. As a consequence, they will be analysed as a whole. On the one hand, taking into account the answers to the statements in the self and peer assessment questionnaire as quantitative data. On the other hand, bearing in mind important appreciations made by students in the “two stars and a wish” feedback included in the self and peer assessment questionnaire. In addition to this, I will review the letters to the teacher that were handed at several stages in the term, as well as other observations made by language assistants and myself on the research journal as qualitative data.

In the following lines, I will examine the handouts provided in this study: letters to the teacher, notes taken by language assistants and myself on the observation rubrics and the research journal and self and peer assessment questionnaires completed by students.

6.2.8.1. Letters to the teacher

As previously commented, this handout was provided at the beginning, mid and end of the first term. However, the letter box was always available in class for students to present their queries, concerns or comments at any stage of the term. With regard to the letters written by students in both groups, there were no significant differences among the comments made at different stages of the term. Only when it was mandatory, students took the time to write these letters. Other than that, I had to insist many times that students took the time to write the letters during the term which ended up with fast finishers being the only ones to write regularly.

The first thing that I noticed in the first letter they wrote at the end of September was that most students had serious difficulties with handwriting in their first language. Not only did students take half a lesson to write three or four lines but also, many letters were illegible. Additionally, several words were written together, and many of them had important spelling mistakes that affected communication. This gave me a boost of energy as I thought that by working spelling in the foreign language at a word level this would help them become better writers also in their first language.

In relation to the nature of the comments made by students at the beginning of the term and after three weeks of class (end September), they consisted in three main aspects. Students wrote about general reviews concerning English as a foreign language, such as things that they liked or disliked about English, some of their difficulties with English or school activities and positive comments and thoughts about their teacher. In general terms all comments at the beginning of the year were quite encouraging.

Regarding reviews of English, more than half of students in both groups reported that they liked or loved English subject and that they enjoyed learning it. One participant even took the time to take the letter home to improve it and wrote it in English with the following positive comment towards English as a foreign language. “I feel good and learn another language” (S24, experimental group, 24th September 2019). Other participants wrote some other positive comments such as “*Me gusta aprender English para viajar y saber otro idioma*”/ “I like learning English to travel and learn another language” (S23, experimental group, 24th September 2019)⁶². Other students presented their wishes towards learning English. For instance, a girl in the control group wrote the following comment “*Me gustaría aprender a leer en inglés*” / “I’d like to learn how to read in English” (S14, control group, 24th September 2019).

Another girl in the same group went on to add that she wanted to learn how to read and write to tell her parents that she knew a lot of English (“*Me gusta mucho aprender a leer y escribir en inglés para decirle a mis padres que sé inglés*”; S4, control group, 24th September 2019). From this student’s comment, I could gather how important is for children that significant others are proud of them. Children, as many other adults, like to like. The same way Ryan and Deci (2000) argued that parents’ negative influence on children’s academic work may have an impact on intrinsic motivation, the opposite, must encourage children to develop positive motivation. Indeed, as Levine and Sutherland (2013) claim, parents being involved and having high expectations of academic achievement is an important indicator of career success. In my opinion, those students whose families are actively involved in their children academic work perform better at school than those families that do not validate school work as something of vital importance.

With respect to the letters in the middle and at the end of the term, they were no significantly different than the ones at the beginning of the term. Mostly, comments concerned conflicts with other students that needed from the teachers’ mediation. As for comments concerning positive comments about myself, it must also be noted the high quantity of letters in which students showed love for their English teacher. Many letters contained red hearts, love notes, appreciations about how much they loved me as a teacher or enjoyed being in my class and also loving comments about my physical appearance.

⁶² Given that some comments contained several spelling mistakes or the absence of punctuation marks, all of them have been transcribed in the correct form. Consequently, they have been reproduced without spelling mistakes and with the necessary punctuation marks for its understanding.

This again may indicate that students were seeking being liked and loved by their teacher in return, which in fact made them feel comfortable and more capable in class. In order to like the subject, they seemed to have to like their teacher too.

Furthermore, an important comment of one student with learning difficulties was noted in the middle of the term. A dyslexic student in the control group wrote a simple but powerful “*Quiero que me ayudes / I want you to help me*” (S4, control group 5th November 2019). She was clearly noticing her difficulties with the foreign language and urged me to take action to help her. In fact, the week after reading that letter, I started all paperwork to have her evaluated by the school psychologist and had an interview with her parents⁶³. By the same token, other student in the same group asked me to help her to learn more English with Social Science “*¿Me ayudarías a aprender más inglés con sociales?*” / “Would you help me to learn more English with Social Science?”. She was undoubtedly making explicit her difficulties with this subject in such a simple sentence. As a result, these letters offered me an opportunity to confirm some of the difficulties I was already foreseeing as their teacher. It was a powerful eye opener tool that pushed me to take immediate action in many cases.

Finally, at the end of the term, students were more focused on writing about things that they liked or did not like about school in general. The most important comments were about disliking teachers that yelled in class or teachers that desired to be called “Miss” which some students felt as a sign of authority they did not liked. As an example, I highlighted this comment from a student in the control group that wrote the following: “*No me gusta que a la Maestra Carmen haya que llamarla Maestra porque es una persona normal*” / “I don’t like that we have to say Maestra Carmen because she is a normal person” (S16, control group, 5th of November 2019). This probably indicates that some students need to feel teachers close to them, almost as equals, so they feel more comfortable in their class.

All in all, even if these notes were not particularly relevant to spelling work done in class, they gave me a lot of insight about students’ needs and personalities. In my opinion, these letters helped students to connect with me as their teacher in a space that offered freedom of opinions in which they were not questioned or pressured to express their feelings.

⁶³ Approximately one month after this event, this student was diagnosed with severe dyslexia by the school psychologist. In addition, her pediatrician supported this diagnosis with a report that included ADHD symptoms and medication.

6.2.8.2. Observation rubrics and notes in the research journal

I started the research journal the first day I introduced the spelling strategies to follow in both groups. The first note I wrote was about sharing with students that I wanted to study whether they would become better students if I did something new, something I had never done before. I also shared with them that they would help me to continue my academic career and that thanks to them I would be able to become a Doctor and work at University to teach other teachers. They were very willing to participate and asked me a lot of questions about my study and what they had to do to become Doctors one day.

I also told them about the spelling tests they were going to do and all classroom dynamics (e.g., WALT and WILF posters and two stars and a wish feedback that we had started using some weeks before). I called “crazy spelling test” the pre-test they had before practising the key content vocabulary and “final test” the post-test they took once they knew and had practised all the Science unit’s key words. By naming the tests in a way that students could understand best, I was also promoting their motivation towards its compliance. I also explained to them all the mechanics (e.g., I will dictate the words 3 times) and I told them that the goal of taking two tests was for them to see how much they had improved after practice. I did the same in both groups although I did not explain the NLP spelling strategy to the control group. In the control group, I merely showed them the materials we were going to use to copy the words and explained to them why and when we were doing it each day.

In the experimental group on the other hand, after arising some interest in the topic, we engaged on a debate about the word “strategy”. I wrote the word in the middle of the board and students would give me ideas about its meaning. Some of the most relevant comments were that a strategy is a plan to do something, a trick to remember, it tells us what to do, it is what football coaches do. Once I confirmed they understood what it meant to follow a strategy, I introduced the NLP spelling strategy to the experimental group. We practised each step several times until they got it right and fully understood what was required from them. I started with a very simple word such as “stop” so they could focus on the strategy’s steps rather than the word itself. Later, I allowed them to choose the words that they wanted to learn how to spell (e.g., Hollywood, vocabulary and zookeeper among others).

The research journal contained everyday comments about students’ performance in both groups. I took notes about the words practised and highlights or difficulties I saw along the way to be able to change or adapt my teaching to my students’ needs. In this

sense, I will make special emphasis on these notes only when they are relevant. Other than that, they were on my journal just to help me reach best my students and to provide me with insights for the analysis of data.

In the first Natural Science crazy spelling test, I noted how students misspelled the word “spine” thinking that I had said “Spain” (4th of October 2019). Probably because they were more used to the name of their country in English, perhaps due to sports competitions, many did not doubt to write Spain instead. I also noted how some visual clues such as touching one’s arm while dictating “biceps” gave some of them the clue to try to spell it correctly. However, as noted earlier in this paper, crazy spelling tests’ results were in general quite discouraging since students misspelled all words in a very high percentage (see section 6.2.2). Thus, the final test became a repetition of the pre test with 3 to 5 additional words that had been practised along the unit.

I also noted how some SEN students in the control group already in the first unit of practice were passive and were not willing to copy the words in their notebooks. I ended writing the complete word in their notebooks and writing prompts to encourage them to start their spelling work, which occasionally helped them. The same way, many SEN students in the experimental group preferred to copy words rather than follow the NLP spelling strategy probably because they found it easier. All these students needed a lot of support from the teacher and language assistants to comply with spelling work.

During the second unit of spelling practice, I recorded that I had started using different felt tip colours on the board to highlight words’ special features such as double letters in words (e.g., crossing) (Social Science unit 1, note taken the 12th of November 2019). For students in the experimental group, we also added special kinaesthetic clues such as rising our arms to imply that there were double letters in a word. We also talked about homophones (e.g., see/sea) and how the context would help us to decide which was the correct spelling. Consequently, I observed in every spelling lesson how by practising word recognition and spelling we went deeper in the understanding of the foreign language. All in all, every note I took in both groups until the first half of the term was about how they seemed very engaged in the activities carried out in class with regard to spelling. Nevertheless, after that, I recorded how many students’ engagement in the control group began to fade in the second half of the term and especially at the end of the term.

This indeed was a confirmation of many students in the control group failing to comply with spelling work and thus, also failing to success in spelling tests as widely

commented in other sections of this chapter (see section 6.2.1). Nevertheless, in the experimental group, even if their scores in spelling tests were not outstanding, they seemed committed and involved in practising their spelling with the NLP spelling strategy along the term. All my notes were about how motivated and engaged they were. It is possible, therefore, that students in the experimental group found the NLP spelling strategy an attractive activity since it was seen as a game to play with a partner. The control group on the other hand was doing a mandatory chore at the beginning or end of the day which may have felt an obligation rather than a game.

Concerning observation rubrics, they were handed to language assistants in the middle, during Social Science unit 1 vocabulary learning (November 2019), and end of the term during Social Science unit 2 (December 2019). I only recorded data in these rubrics for the experimental group since the control group was only copying words and it was mostly individual work and I had enough with the notes taken in the research journal. In the experimental group I divided the group in eleven pairs and one trio. In Social Science unit 1, the language assistant was in charge of assessing four pairs and one trio and I was responsible for the rest of the class.

The rubric contained seven statements⁶⁴, three columns to check exceeds, meets or below expectations and a fourth column to write comments (see appendix 9). The first thing I observed was that the language assistant was a lot more demanding than me assessing students in the first rubric. Most of her statements' checks were among meets and below expectations. However, I was a lot more positive recording that they exceeded or met expectations in this first rubric. In my opinion, the reasons behind this were varied. For starters, language assistants are not teachers. In my experience, they do not fully understand where students come from and how challenging is studying in a bilingual school for some of them. In addition, they do not always understand the patience it requires to get students understand or perform a specific task.

Furthermore, they join some lessons in a day but are working with other groups the rest of the day so in many occasions they do not have the time to get to know students. In my experience, as teachers we are aware of our students' backgrounds and where they come from in terms of learning and we spend at least 3-4 hours a day with each group in the bilingual programme. In contrast, language assistants spend a while in one class but

⁶⁴ 1. Understands the strategy. 2. Speaking softly. 3. Listening and helping each other. 4. Taking turns. 5. Stay on task. 6. Ability to spell the words from memory. 7. Speak English most of the time during the task (language required for the task: turn taking, etc.)

do not have the time to fully bond with a group. Additionally, as teachers, we see a broader scope about students' development. Consequently, all these facts may have made me be more benevolent with students' achievements and perceive a very small step as a huge progress.

All in all, we did write some similar observations. We both agreed that most students understood the strategy and were able to use it quite adequately. We both agreed that SEN students lagged behind the other students. In fact, those pairs or trio in which they were participating were less successful or needed more support than others. We also noted how some assigned pairs were not working together but individually and how we had to intervene to encourage them work and help each other. Additionally, we recorded how students were using some of the strategies used in class such as using different colours or using different kinaesthetic clues for double letters in a word.

Finally, we both agreed that most students were not using English to communicate among them, even if they had displayed the language classroom they were encouraged to use. Furthermore, we noted how all students seemed very engaged and willing. As a matter of fact, they knew that we were taking notes about their performance whilst monitoring the activity. This is probably why, as soon as they saw us nearby, they tried to say a word in English but were not able to keep up with English for the whole task. On that account, at the end of the lesson I gave them feedback in the "two stars and a wish" format. My two stars were related to their motivation and dedication to the task. The wish was obviously related to the use of English to communicate during the task.

During the second observation rubric in Social Science unit 2 (December 2019), a different language assistant helped me to take notes. Again, she was a bit stricter with students' performance during the task. However, this time her checks were mostly in the meets expectations column with one interesting exception: the pair with the dyslexic student (S1 experimental group). The dyslexic student was working with a very active student (not diagnosed with ADHD but with all the pertinent signs) and she recorded that this was a very bad choice of partners. He did not have the patience to help her with the task. According to the language assistant he was distracted, and the dyslexic students seemed confused. This ended up with both students copying words but not working together practising the strategies. I completely agreed with her and changed their seats the following day. Ergo these rubrics were a tool for me to see what I could not have seen otherwise with such a large group.

Another important observation I noted was that even though I gave them all the classroom language required to use English during the activity and that it was part of my WILF poster (I want you to use English in the English class) they still did not use it to communicate between them. This time my “two stars and a wish” feedback had similar stars, being engaged and willing to try to follow the strategy. The “wish” still had to do with students using English as a means of communication.

All things considered, during the realisation of spelling tasks with NLP, most students understood and were able to follow all the steps in the strategy. However, I recorded in the research journal how students switched to copying words as soon as they encountered problems either with the strategy, with their peers, or due to specific learning difficulties. In general, it seemed that copying words gave students a confident feeling of knowing what to do. They knew they were being observed and wanted to work. Thus, they overcame these difficulties by trying to do something even if it was not what it was required from them.

6.2.8.3. Self and Peer assessment questionnaires

As far as self and peer assessment is concerned, with the purpose of avoiding students from being weary, these questionnaires were handed at two stages during the first term. Thus, self-assessment questionnaire was handed at the end of the first Natural Science unit, at the beginning of the term, whilst the peer assessment questionnaire was handed at the end of the first Social Science unit in the middle of the term (see appendix 7). As previously commented in the methodology (see chapter 4, sections 4.4.5 and 4.4.6), all lesson’s goals and expectations were shared with students through WALT and WILF posters⁶⁵ so they knew what was expected from them from beginning to end. This way, students knew in advance that they had to assess themselves at the end of the lesson which ended up on having students more engaged in the activities planned.

Concerning self and peer assessment, these included 5 “can do” statements that students had to rate following a Likert scale of 5 points from “Of course” to “Of course not”, the same way they did with the beliefs tests. Bearing in mind the young age of students in this investigation, I did all questionnaires very similar so they could get used to them quickly and easily. At the end of the questionnaire students had a few lines in

⁶⁵ WALT stands for “We Are Learning to” and WILF stands for “What I’m Looking for”. These posters shared with students at the beginning of each lesson were further explained in chapter 4 section 4.4.6.

which they could give some feedback using the strategy “two stars and a wish” (see chapter 4 section 4.4.6). The goal of this feedback was to find out additional information that supported other questionnaires or findings of this investigation. All statements were analysed to get an idea about students’ thoughts and stand views during the process of learning the spelling strategies in each group. The table below illustrates the statements presented on each questionnaire for both groups.

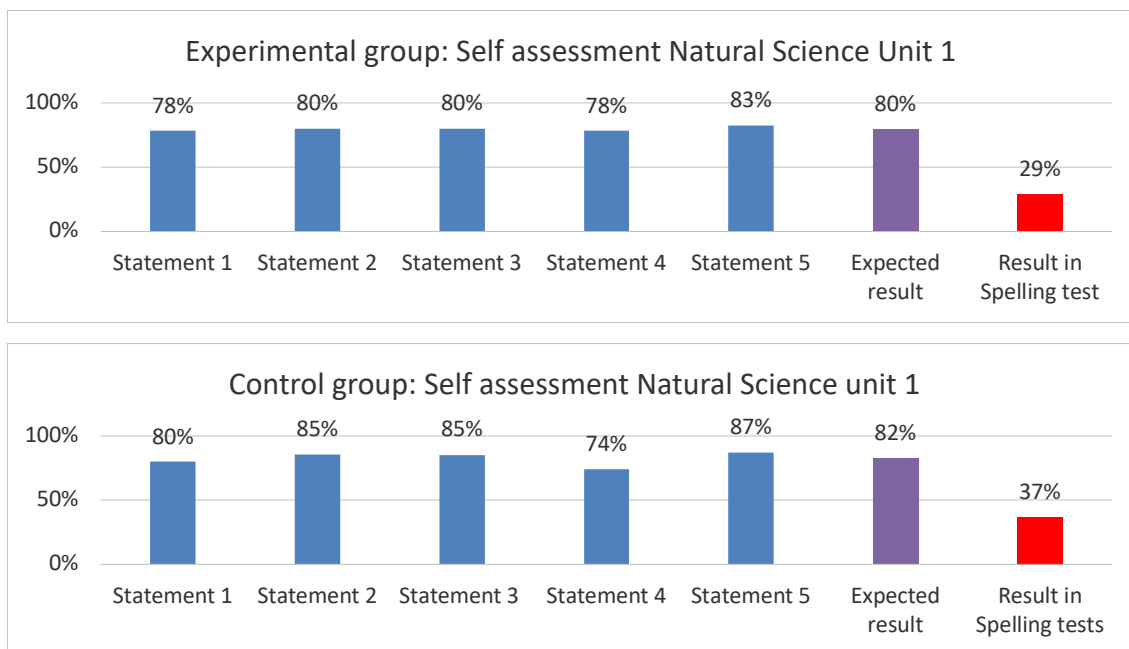
Table 15: Set of statements on self and peer assessment questionnaires:

	EXPERIMENTAL GROUP		CONTROL GROUP	
	SELF ASSESSMENT QUESTIONNAIRE	PEER ASSESSMENT QUESTIONNAIRE	SELF ASSESSMENT QUESTIONNAIRE	PEER ASSESSMENT QUESTIONNAIRE
STATEMENTS	1. From the list I practised, I can correctly spell...	1. From the list we practised, we can correctly spell...	1. From the list I practised, I can correctly spell...	1. From the list I practised, I can correctly spell...
	2. I can use the visual spelling strategy to spell words from Natural and Social Sciences in English	2. We can use the visual spelling strategy to spell words from Natural and Social Sciences in English	2. I can copy correctly words from Natural and Social Sciences in English	2. We can copy correctly words from Natural and Social Sciences in English
	3. I can stay focused and on task	3. We can stay focused and on task	3. I can stay focused and on task	3. We can stay focused and on task
	4. When I work with a partner I can speak English during the activity	4. When we work together we can speak English during the activity	4. When I work with a partner I can speak English during the activity	4. When we work together we can speak English during the activity
	5. I can write in English words that I could not write before	5. We can write in English words that I could not write before	5. I can write in English words that I could not write before	5. We can write in English words that I could not write before

In order to calculate the effectiveness of the self and peer assessment questionnaires, I calculated the average positive responses per statement. By doing this, I had an exact breakdown of which of the statements were more relevant to students. In addition to this, I completed the analysis including the average responses per student in the whole questionnaire compared with the average group’s result on the spelling test. In this fashion, I could extract a comparative of the expected performance according to students’ answers on self and peer assessment questionnaires and their actual performance in spelling tests.

The chart below presents the comparison between answers in the self assessment questionnaire in both groups of students after practising spelling strategies (the NLP spelling strategy in the experimental group and copying words in the control group) during Natural Science unit 1.

Chart 23: Self assessment questionnaires Natural Science Unit 1



According to the above results, the students' expected result in the self assessment questionnaire was around the 80% success rate in both groups. This clearly contradicts the result of the spelling test where the average group success rate remains at a poor 29% in the experimental group and 37% success rate in the control group. Consequently, students' responses to the questionnaires were rather more positive than their actual performance in the spelling tests in both groups. It is possible, therefore, that students' motivation towards the spelling activities presented were a lot higher than what they were actually ready to perform in the spelling test during this first unit of Natural Science.

Regarding the positive answers to the statements presented in the self assessment questionnaire, as this chart shows, there were no significant differences between the two groups. Close to 80% of students in both groups could spell 5 or more than 5 words in the list presented that specific day (statement 1). 80% in the experimental and 85% in the control group could apply the spelling strategies required and could stay focused and on task while doing so (statements 2 and 3). Around 75% of students in both groups reported that they could speak English when working with a partner (statement 4). This was a

particularly interesting result in the control group since it was mainly individual work. Therefore, I guessed that they were not only assessing their spelling work but also the whole lesson's work that particular day. Finally, approximately 85% of students in both groups were positive about being able to write words that they could not write before (statement 5).

These findings suggest that students' judgements about the spelling strategies used were very positive. They felt that they could do the job at ease and that they could use the strategies introduced in class. However, when the average of positive answers in the questionnaire was compared to their actual performance in class, it could be observed how they did not perform as well even if they thought they could apply the new learnings. According to these data, we can infer that even though students felt comfortable working with the spelling strategies, these were not as effective as they thought they would be in this first unit of Natural Science at the beginning of the term.

As far as the feedback given in the "two stars and a wish", I will highlight the most relevant and valuable comments given by students. In light of this, the most repeated wish in both groups was to be able to speak English or to improve their English. Therefore, a large number of students felt the need to reinforce their English skills. Considering that this was the beginning of their second year in a bilingual school, it could be suggested that students understood the challenge implied in learning in a foreign language. Consequently, they were eager and determined to make their wish happen. Having students engaged and committed to this goal is a success in itself for the bilingual programme. This supports evidence from previous observations made by Ashton, Salamoura and Díaz (2012) in their investigation of the bilingual programme in Spain that reported that the vast majority of young learners in the bilingual programme have a solid enthusiasm for learning English.

One more wish that it was repeated several times in the control group was the wish to work with a partner. From this comment I extracted that they enjoyed working together rather than individual work. However, the nature of copying words as a spelling strategy left very little room for making this to happen in the control group. Some other wishes commented in the control group were related to be more focused in class or chat less with their peers. This gave me a hint of some students being distracted whilst they were working on their spelling even if they had answered positively to the statements related to being focused (statement 3). As a consequence, I rearranged some pairs and changed some students' places in class.

Other student in the experimental group (S10) indicated in her wish a simple comment like this “me sale un poco mal / I do it badly”. From her comment I understood that she was not able to follow the NLP spelling strategy and found some difficulties. As a result, I helped her the following days and went through the strategy step by step (note taken in the research journal the 18th of October 2019). In view of this, these kind of comments and feedback given by students gave me as their teacher more in-depth insights about the way they worked and the difficulties they found along the way. These questionnaires were therefore an effective tool for the teacher to be able to adjust and take action to solve problems.

Among the relevant positive feedback (stars) they gave to themselves in the experimental group, S8 noted that he liked the spelling list (“me gusta la lista de delettrar”) and S6 reported to have fun while practising the words with the strategy (“me lo paso bien con esta estrategia”). Consequently, some students were enjoying using the NLP spelling strategy and found the spelling work fun and interesting.

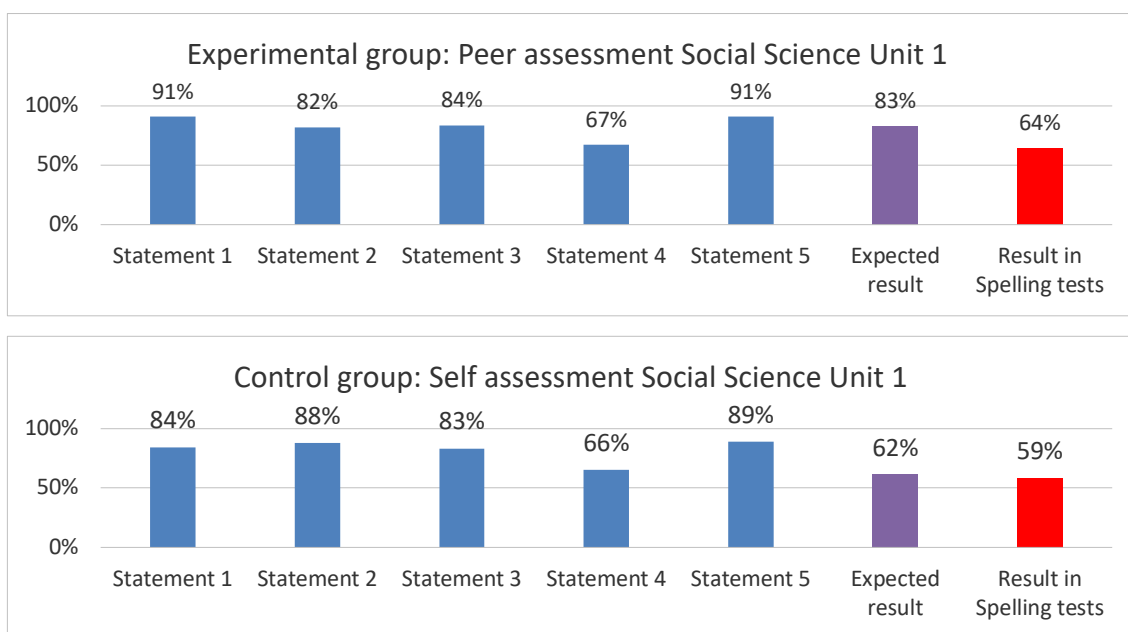
Finally, one thing that struck my attention was how students with special needs or difficulties failed to write their comments and feedback. They had such a hard time having to write that they tried to slip this work by taking the time to extra colour their answers on the questionnaire or looking at the ceiling as if they were thinking something to write (note taken on the research journal, 17th of October 2019). Not only was spelling in English complicated from them but also writing their thoughts in Spanish was an arduous task for them. For this reason, I tried to engage in a conversation with them whenever it was possible to find out about their thoughts regarding their strengths and difficulties. In spite of always trying to engage conversation in English most of the time we ended up speaking Spanish so they could express themselves and tell me about themselves. At this point, it was even more relevant for them to feel taken into account and considered than their level of English. This way I could give them exactly what they needed, to feel part of the group and to feel acknowledged by their teacher.

Regarding the self and peer assessment questionnaire taken in the middle of the term during Social Science unit 1, due to the nature of copying words, the control group was requested to complete a self assessment questionnaire. Meanwhile, the experimental group who was working in pairs with the NLP spelling strategy completed a peer assessment questionnaire. As we could see above on table 15, the essence of the questionnaire was the same in both cases, albeit there was a change of “I” for “We” in the peer assessment

questionnaire. Consequently, the control group fulfilled the questionnaire individually whereas the experimental group did it in pairs or threes⁶⁶.

The following graph illustrates a comparison of the results per statement and average of the questionnaire and spelling tests in both groups.

Chart 24: Peer and self-assessment questionnaires Social Science Unit 1



As can be seen from the chart above, there were significant changes from the beginning to the middle of the term especially in the control group. What stands out in the table is that the control group's expected result and average of their answers in the self assessment questionnaire was quite close to the average results in spelling tests. With 62% of positive responses in the self assessment questionnaire and 59% of positive scores in the spelling tests we can see that only 3% was not able to match what they thought they were able to do to what they were actually able to do. Consequently, students in the control group were able to assess themselves more accordingly to what they were able to do in spelling tests.

However, in the experimental group, even though results were a lot better than those registered at the beginning of the term, 19% of students were failing to assess themselves when the expected results in the peer assessment questionnaire were compared to what they were actually able to do in spelling tests. This discrepancy could be attributed to

⁶⁶ In the peer assessment taken in the experimental group during Social Science 1 unit at the middle of the term, there were 10 pairs and 1 trio. The trio was arranged owing to the special characteristics of students. Consequently, this trio was formed with a strong student, an average student and a student with special needs that did not form part of this study (as commented at the beginning of this chapter).

students' being enthusiastic about peer work and thus being more driven to be positive about their performance. This result goes in line with those of Holmes (2003) who also found out that pair work not only improves performance, but also promotes positive attitudes in students. In any event, if we have a look at results at the beginning of the study, we could observe that there was a 51% difference between expected results and actual performance in spelling tests. Consequently, a 19% difference in the middle of the term between expected results in students' peer assessment answers is a great improvement that must be taken into account.

Closer inspection of the table shows the breakdown of the average positive answers per statements in each group. In relation to the first statement corresponding the number of words they thought they were able to spell, 91% of answers in the experimental group and 84% of the answers in the control group were positive about being able to spell 5 or more words from the short list given. Thus, students in the experimental group believed that they could perform better than the control group. Nevertheless, the only statement that the experimental group answered less positively than the control group was the second one. 88% of students in the control group reported that they could copy words correctly whereas 82% of students in the experimental group noted that they could use the NLP spelling strategy to spell words from Social Science. This is not surprising since the use of NLP spelling strategy was a lot more demanding than copying words for spelling practice. Students not only had to follow a series of steps but were asked to do it in collaboration with a partner. Accordingly, they were a bit less positive in answering this statement.

With reference to statements 3 and 4, results were very similar. Around 84% of students in both groups declared that they could stay focused and on task (statement 3). As a matter of fact, some students in the experimental group gave themselves a star for helping each other (S16 and S20; S12 and S9; S3 and S17) on the peer assessment feedback they had to do at the end of the questionnaire. Also, approximately 67% of students in both groups indicated that when they worked with a partner, they could speak English during the activity. This is particularly interesting in the control group since they were not asked to work in pairs for copying the words. Therefore, they were probably commenting on what they had done in the immediate lesson before spelling work. In any case, one issue that emerges from this finding is that students, even though they were asked to use English as a means for communication and were provided with language support for doing so, found difficulties to speak English when working together. As noted

in the research journal, they were engaged while copying words in the control group and highly motivated to put into practice the NLP spelling strategy in the experimental group. However, they were speaking mostly in Spanish in the experimental group and swift to English whenever the language assistant or teacher were nearby (note taken the 20th of November 2019). A positive outcome about students answering to this question is that almost half of students were being honest in their answers.

Finally, the last statement concerning students being able to write words they could not write before thanks to the strategies put into action in class, both groups were around 90% positive about this fact. Thus, to a large extent, students believed that either copying words in the control group or the NLP spelling strategy in the experimental group was making them better writers and spellers in the foreign language. In the same fashion, we have seen how their results in spelling tests improve from the first self assessment to the second self/peer assessment in the middle of the term. Consequently, students were right about this spelling practise making them better spellers.

In addition to this, some of the most common wishes in both groups were to continue improving the spelling (i.e., “*tenemos que mejorar escribir en inglés*” S19 and S11 in the experimental group). Similarly, they were so engaged in spelling work that some other students noted comments such as “*que nunca acabe el spelling*” (I hope that spelling never ends, S24, control group). In my opinion, spelling work gave students a sense of security in class. They knew exactly what to do and what was expected from them. Consequently, they could feel safe trying something new or exploring new key content vocabulary so they could enjoy themselves freely in the bilingual class.

In a nutshell, self and peer assessment questionnaires were an effective tool. On one hand, they made students reflect about their performance. On the other, they helped the teacher take actions as, for instance, to help particular students to solve some of the most common difficulties with the spelling practice. Furthermore, from the beginning of the study to the middle of the term, it could also be observed how students had learnt to assess themselves more accurately. This together with the other spaces to reflect about their work such as the letters to the teacher helped them to reveal some of their difficulties and strengths and made them explicit for the teacher. Consequently, it seemed undeniable that getting students to meditate about their work in a particular field helped them to be more open to learning and more consequent when they were trying to relate their answers to their efforts. In addition to this, all notes gathered in the research journal and observation rubrics for the teacher and researcher and language assistants resulted beneficial to adjust

the planning, to adapt the lessons to students' real needs and to get powerful insights from the development of the sessions.

6.3. Summary of the chapter

This chapter began by describing the participants of the main study, their needs and their starting point with regard to their level of English at the beginning of their second year in the bilingual programme (see sections 6.1 and 6.2). The next sections attempted to provide relevant data to analyse the results of the first term. In line with this, scores of the spelling tests in every unit were analysed (see section 6.2.1). At first, the control group results were higher but soon after the experimental group started to have a moderate increase in their spelling scores surpassing results of the control group. The same way, spelling tests were triangulated with the results of the beliefs tests (see from section 6.2.2 to section 6.2.6). Here, it was argued that students' expectations towards the efficacy of the spelling strategies applied in each group were a lot higher than the actual results in the spelling tests.

This chapter went on analysing results of the Learning Channel Preference Checklist results (LCPC) and suggesting that there does not seem to have evidence to a relationship between learning styles and spelling performance (see section 6.2.7). In subsequent sections, other questionnaires such as letters to the teacher (see section 6.2.8.1), notes in the observation rubrics and research journal (see section 6.2.8.2) were analysed as qualitative data remarking the most important notes with regard to spelling. Finally, self and peer assessment questionnaires were analysed as a means to further corroborate other findings mentioned along the analysis of results (see section 6.2.8.3).

The chapter that follows moves on to review all data gathered during the second term of second grade in terms of spelling performance. The same structure will be followed. Consequently, spelling tests will be analysed and will be triangulated to results in the beliefs tests in the attempt to find possible correlations. In addition, the spelling scores of the strongest visual, auditory and kinaesthetic male and female students in each group will be analysed in order to find possible agreements between spelling and learning styles. Similarly, other questionnaires taken throughout the term such as letters, observation rubrics, research journal and self and peer assessment questionnaires will be analysed to complement all findings gathered. Finally, results in spelling tests for students with dyslexia will be analysed to find out whether these strategies help them to improve their spelling performance.

CHAPTER 7. MAIN STUDY TERM 2

In what follows, the present chapter will report the findings obtained in the second term for Natural and Social Science subjects. In so doing, this chapter will offer a detailed analysis of the performance achieved in spelling tests, beliefs tests and VAK tests. In addition to this, other questionnaires taken such as peer and self-assessment and observation from the teacher, among others, will be considered. As the previous chapter indicated, the participants were two groups of students in 2nd grade of primary education in which, 2A was the control group and 2B was the experimental group (see chapter 6, section 6.1 for specific considerations of all students).

7.1. Results and analysis of the second term

The timeframe of this study was distributed in two terms during which key content vocabulary of two units of Natural and Social Science were studied. The table below summarises the timing, dates and contents of each particular Science unit undertaken during the second term.

Table 15: Units of research in the second term

TERM 2		
UNIT	DATE	DURATION
NATURAL UNIT 3 (ANIMALS)	January 2020	2 WEEKS
SOCIAL UNIT 3 (LANDSCAPES CHANGE)	Jan/Feb 2020	2 WEEKS
NATURAL UNIT 4 (PLANTS)	February 2020	2 WEEKS
SOCIAL UNIT 4 (LOOKING AT MAPS)	Feb/March 2020	2 WEEKS

As illustrated, I taught one Natural Science unit and then one Social Science unit. However, when analysing the results of each unit, they will be presented in its entirety by subject. In relation to timing, units in the second term took shorter time to teach. This is due to the fact that students' learning pace has already been set and students did not have to learn any other class dynamics different from the ones implemented in the first term (i.e., WALT and WILF posters or questionnaires provided during the study). In spite of the fact that the last unit of Social Science could not be finished completely due to COVID-19 lockdown in Madrid, I could manage to run all questionnaires related to this study the last day of school (March, 11th 2020). Hopefully, since this Social Science unit

was almost finished, and only the last contents of the unit were not taught on-site, the results of the tests will not be influenced by the exceptional situation. In this regard, the teaching of the remaining contents and test took place online for all students in these groups.

At the beginning of the second term, I taught students the new NLP spelling strategy that would be used during this term. As already stated in the previous chapter, I gave a name to the strategy so I could abstain from using the term NLP with students of such a young age and as a means to raise motivation towards the new strategy. This term strategy's name was "Playing crazy hangman" (see chapter 4, section 4.2.1). Given that two different strategies have been used in this study, it will be possible to compare which strategy worked best after having analysed all results.

The following part of this study moves on to describing in greater detail all research questions fixed in the introduction and methodology of this study. Consequently, this chapter will follow the same structure of the previous chapter. Hence, the first section tackles the results of spelling tests of Natural and Social Science key content vocabulary (see section 7.1.1) and the second section covers the beliefs tests and the comparison of these results against spelling tests (see sections from 7.1.2 to 7.1.6). With a focus on examining the role of learning styles and spelling expertise, VAK tests are then analysed (see section 7.1.7). After that, the peer and self-assessment questionnaires as well as observation rubrics and letters to the teacher are commented (see section 7.1.8). Finally, a section is devoted to exploring whether spelling strategies used in this term (copying and NLP) are particularly helpful to students with dyslexia (see section 7.1.9).

7.1.1. Second term: Spelling tests

Briefly returning to the methodology of this research (see chapter 4, sections 4.3 and 4.4.1), students in the control group were asked to daily copy a short list of key content words of Natural or Social Science several times, depending on the contents taught in that day and the language of learning⁶⁷. Conversely, students in the experimental group were

⁶⁷ Language of learning is the language that gives access to the new concepts and skills in a topic (Coyle, Hood and Marsh, 2010). In this study, key content words refer specifically to the language of learning in a unit.

taught a new NLP spelling strategy at the beginning of the term and were asked to practise their spelling in class twice a week during 20/30 minutes. Additionally, students of all groups were required to practise their spellings according to the strategies they had been taught whenever there was any down time.

At the beginning of each unit, students took a spelling pre-test (called crazy spelling test) in which a dictation of 12 key content words was undertaken as a means to make explicit the easiest and most difficult words to students. However, as discussed in the previous chapter, these tests did not give any specific insight since most of students lacked from content words spelling knowledge. As a matter of fact, not a single word was particularly successful and only some students managed to have one or two words correctly each time.

At the end of the unit, all the key content words spellings had been practised in class. Nevertheless, since the pre-tests were not singularly satisfactory, the same words were assessed at the end of the unit in addition to three new words. This was done in an attempt to prevent students from focusing on twelve specific words. The following table shows the key content words that were evaluated in the final spelling tests for each unit in the second term.

Table 16: List of Natural and Social Science words assessed in the second term

TERM 2 WORDS	
NATURAL UNIT 3 (ANIMALS) January 2020	SOCIAL UNIT 3 (LANDSCAPES CHANGE) Jan/Feb 2020
1. AMPHIBIAN	1. ARABLE
2. CARNIVORE	2. BRIDGE
3. FEATHERS	3. BUILDING
4. HERBIVORE	4. DEFORESTATION
5. INVERTEBRATE	5. ENVIRONMENT
6. MAMMAL	6. LIVESTOCK
7. OMNIVORE	7. PLATEAU
8. OVIPAROUS	8. POLLUTION
9. REPTILE	9. RECYCLE
10. SLITHER	10. TOURISM
11. VERTEBRATE	11. TUNNEL
12. VIVIPAROUS	12. VALLEY
13. WINGS	13. LANDSCAPE
14. SCALES	14. TRAVEL
15. EXOSKELETON	15. ORGANIC

NATURAL UNIT 4 (PLANTS) February 2020	SOCIAL UNIT 4 (LOOKING AT MAPS) Feb/March 2020
1. CONIFERS	1. ARCHIPELAGO
2. DECIDIOUS TREES	2. BEACH
3. EVERGREEN TREES	3. COASTAL LANDSCAPE
4. FLOWERS	4. COUNTRY
5. FRUIT	5. EAST
6. LEAVES	6. FOREST
7. NEEDLES	7. ISLAND
8. ROOTS	8. LAKE
9. SEEDS	9. LEAFLET
10. STEMS	10. MOUNTAIN
11. SUNLIGHT	11. OCEAN
12. TRUNKS	12. PHYSICAL MAP
13. SUMMER	13. PLAIN
14. CARRY	14. SOUTH
15. SOIL	15. WEST

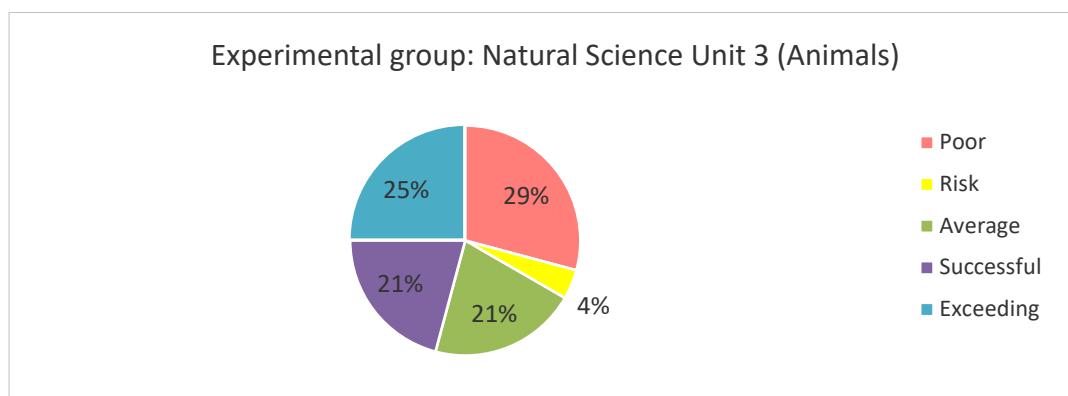
All scores in the spelling tests were categorised into the same five groups they were done with the results obtained during the first term (see table 13, chapter 6).

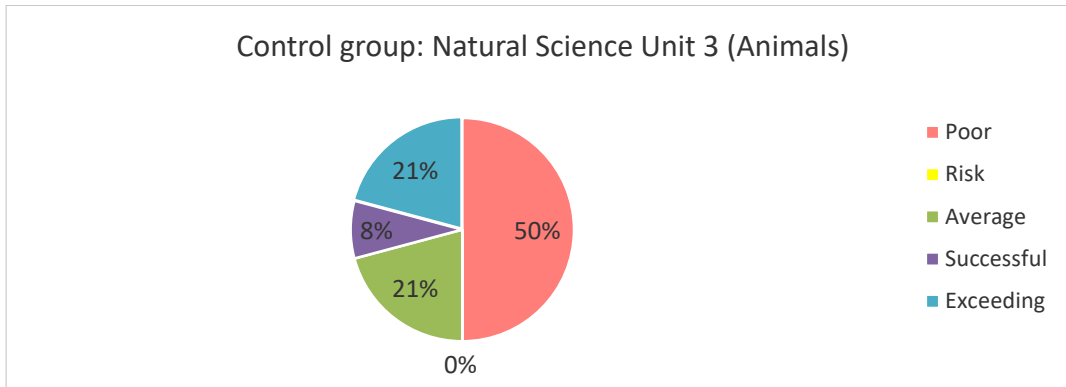
Table 17: Spelling test scores categorization in the main study

Score	1 to 4,9	5 to 5,9	6 to 7,5	7,6 to 8,9	9 to 10
Data	Poor	Risk	Average	Successful	Exceeding

Results collected from the final spelling tests were studied taking this reference after two weeks of practice and teaching the contents of each unit. The following chart indicates the partition of spelling test scores after the first Natural Science unit in this term in each group of participants. This test was performed at the end of January 2020.

Chart 25: Spelling test scores: Natural Science Unit 3

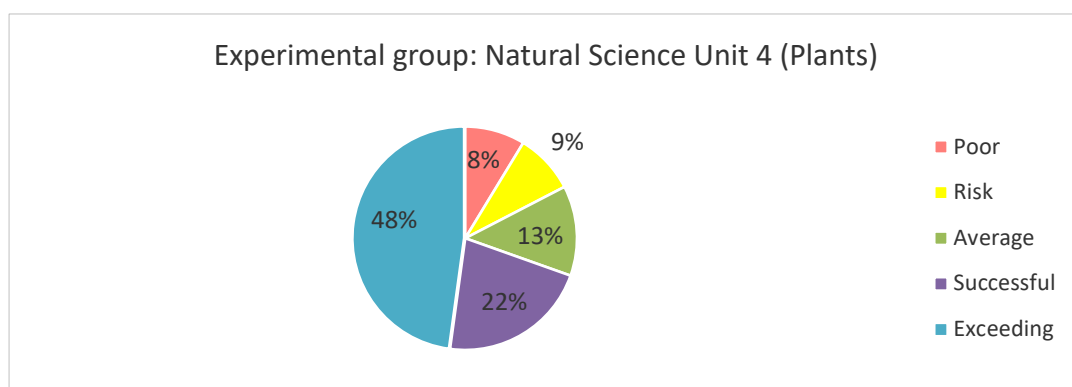


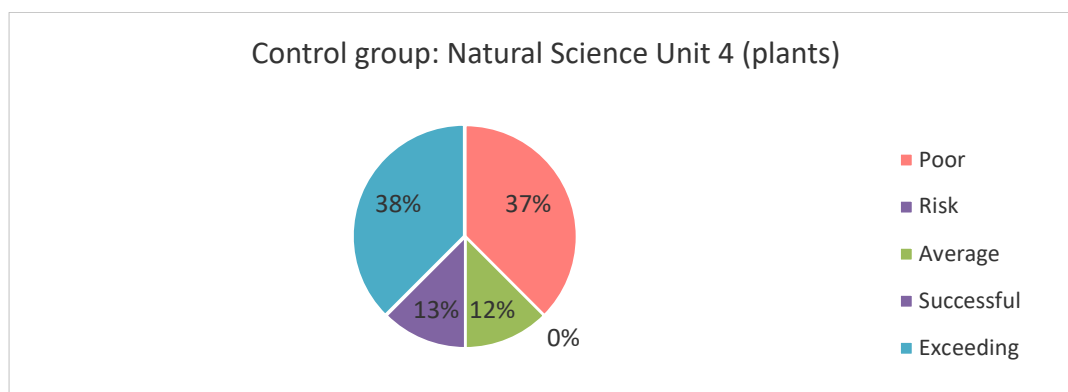


The pie chart above shows that half of the tests in the control group were in the poor zone with no tests in the risk zone. For their part in the experimental group, 29% of tests were in the poor zone and 4% of tests were in the risk zone. Therefore, there were more than 20% of tests in the control group that did not write properly half or more than half of the words dictated in the spelling test. With regard to the results in the average frame, both groups show the same result with 21% of tests with scores between 60% and 75% of correct spellings. As for scores within successful and exceeding zones, we can observe how the experimental group with 46% of tests within the top zones (21% successful and 25% exceeding) surpasses the control group with 29% of tests in the top zones (8% successful and 21% exceeding). Consequently, the experimental group prove to be more successful in this unit since not only tests within the poor and risk zones are considerably lower but also, tests within the top zones are substantially higher.

As regards the second unit of this term in Natural Science, the spelling test was conducted at the end of February 2020. Therefore, the second NLP spelling strategy named “Playing crazy hangman” had been practised for about 6 weeks. The chart below presents the results obtained in this unit.

Chart 26: Spelling test scores: Natural Science Unit 4





The pie charts above show that both groups improved results in Natural Science from the first to the second unit in the second term⁶⁸. The control group decreases the rate of poor spelling tests from a 50% in the first unit to a 37% in the second unit. The risk zone tests continue to 0%. Regarding scores in the average zone, once again, both groups show similar results with 13% in the experimental group and 12% in the control group respectively. Even though these results worsen from the 21% of average tests in the first unit, the number of successful and exceeding tests in both groups increase in this unit. In this vein, 22% of tests are successful and 48% of test are exceeding in the experimental group. Meanwhile in the control group 13% of tests are successful and 38% of tests are exceeding.

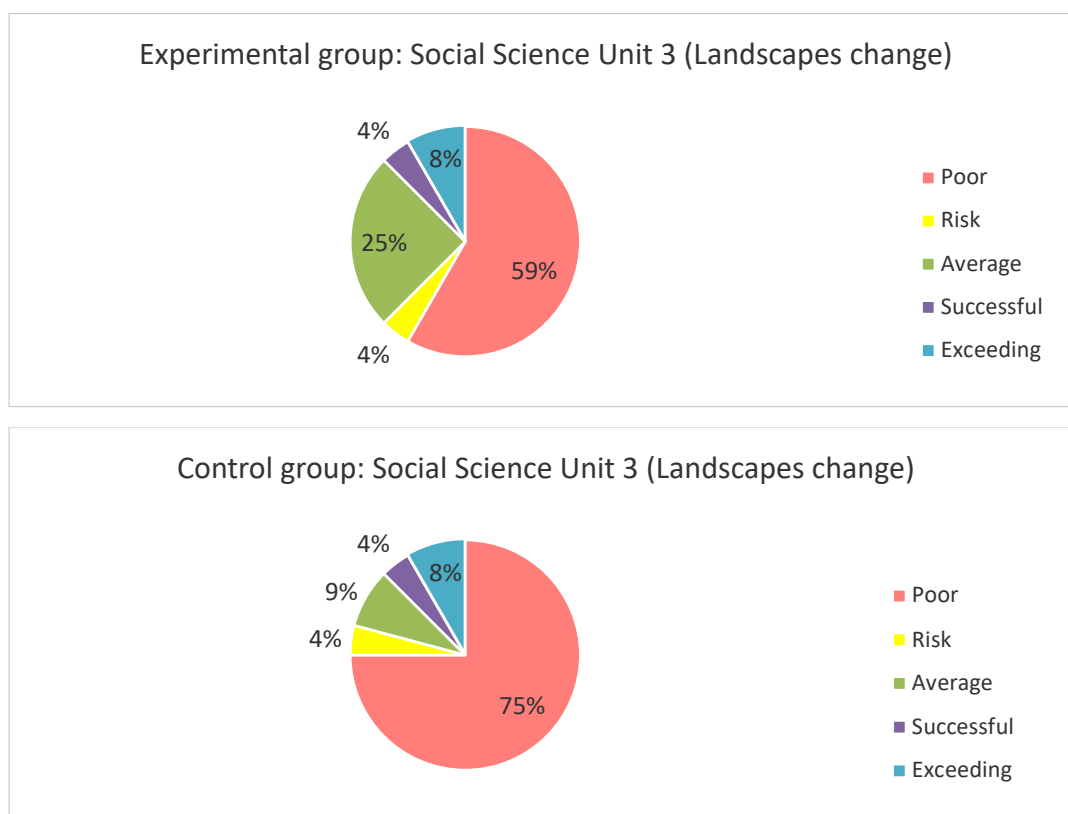
Even if results are notably improved from the first Natural Science unit in this term in both groups, it can be observed how the experimental group surpasses the control group in both units. What stands out is the high rate of tests in the top zones of successful and exceeding with 46% in the first unit and 70% in the second unit in the experimental group. In addition to this, the low rate of tests within the poor and risk zones with 33% in the first unit and 17% in the second unit is also a very positive outcome for the experimental group. Opposed to that, the control group, increases the rate of tests within the top zones from a 29% to a 51% and decreases the poor and risk zones from a 50% to a 37%. Even if there is a significant improvement, it can be argued that they are still far from the positive results in the experimental group.

⁶⁸A note of caution is due here since a Chinese student in the experimental group stopped coming to school around mid-February. She was unable to complete Natural Science unit 4 and Social Science Unit 4. Consequently, scores in the experimental group are weighted with 23 students instead of the usual 24.

It seems possible that the improvement of results from the first to the second unit of the term are due to students working at the beginning and middle of the term. The first Natural Science unit took place just after students had returned from Christmas break and, even though students soon started working at a good pace, it always takes a couple of weeks for them to get accustomed to routines. In addition to this, students in the experimental group had been taught a new spelling strategy at the beginning of the term. This new NLP spelling strategy proved to be successful during the first unit. Notwithstanding, it was even more effective after a few weeks of practice. Most likely, it can be argued that this was the reason for the experimental group getting better results in the spelling tests in both Natural Science units.

Furthermore, these results may be also explained by the fact that content words related to plants might have been additionally studied since there was a big project going on in class. In the unit about animals, albeit students had created their animal's book with characteristics of animals in the different groups, they did not have the chance to visit a farm, zoo or bring animals to class. Nevertheless, while studying the unit about plants, students in both groups had visited the school's orchard, had planted a little seed, and had used the specific content words several times before and after this activity in their research journals. In consequence, although experimental projects tend to be an important part of Science lessons, it was potentially further experimented in the unit about plants. Possibly, only the fact of having a hands-on activity in this unit might have struck a difference towards the motivation to learn the words related to the content at hand.

Let us now consider the results in Social Science. As previously noted, two more units were taught during the second term. The first unit name was "Landscapes change" so that the language of learning was related to landforms, scenery alteration and some words related to recycling that were part of the social competence part of the unit. The final spelling test in Social Science unit 3 took place in mid February after the first unit of Natural Science (unit 3) taught this term. The chart below presents the results of Social Science unit 3 in both groups.

Chart 27: Spelling test scores: Social Science Unit 3⁶⁹

As it can be seen, both groups present a high rate of tests in the poor zone. 75% of tests in the control group and 59% of tests in the experimental group do not pass the spelling test. Additionally, only 4% of tests in each group manage to have at least 5-6 correct words within the risk zone. In relation to results in the average range, the experimental group show better results with 25% of tests within this frame compared to a 9% of tests in the control group. With reference to results within the top zone, it can be observed how both groups exhibit the same results with 12% of tests in this range with 4% of successful and 8% of exceeding tests respectively.

In spite of the low rate of favourable tests, we can notice how the experimental group overshadows the results in the control group. They have the same results in the risk, successful and exceeding zones. However, 16% less tests are in the poor zone and average zone respectively. As a consequence, it can be highlighted that the experimental group obtained better results in this unit.

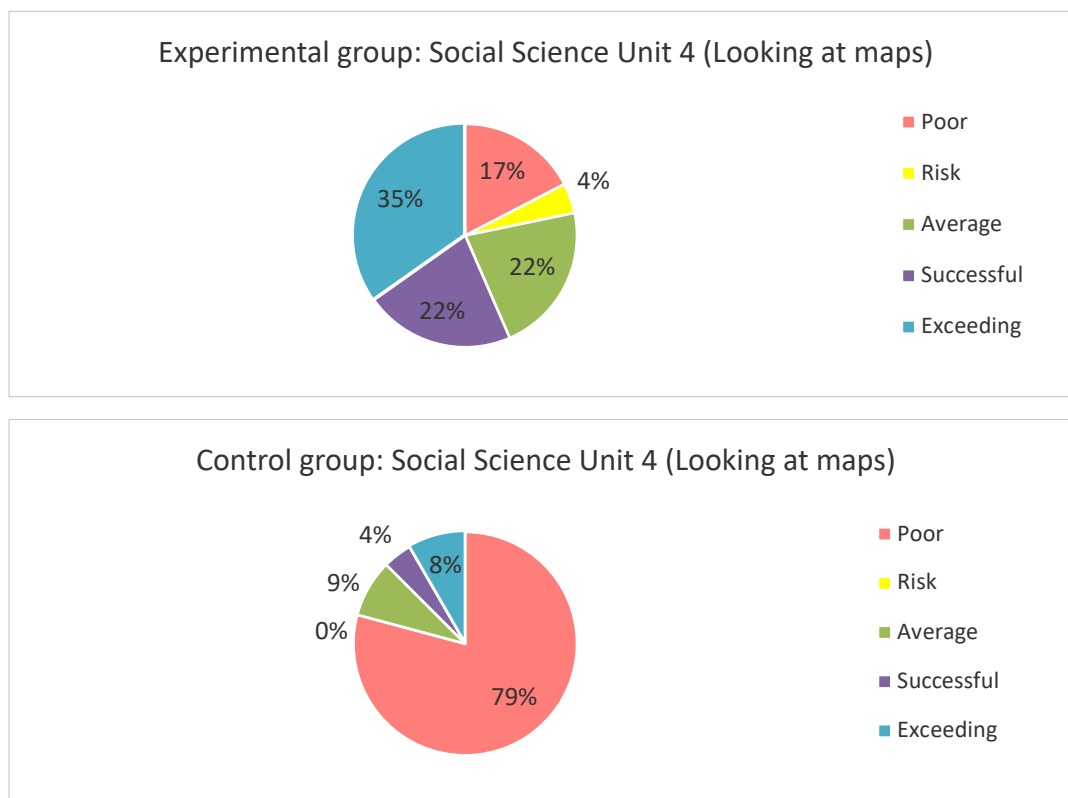
Having a look at previous results derived from Natural Science units, it can be noticed that the performance in Social Science tests decreases. In line with Murphy and Beggs (2003) study on children's perceptions of school Science, the results show that age

⁶⁹ Results in the experimental group must be interpreted with caution since one student did not take the spelling test this week (S8). His scores appear to be 0 points even if he never got to take the test.

and topics related to students' experience are a crucial factor in primary students' attitude to Science topics. Hence, poorer results in Social Science spelling tests may reflect the difference in students' motivation towards a particular topic such as landscapes in this unit.

Let us now consider the spelling tests results in Social Science unit 4, the last unit of this term and in this study. This unit was about "Looking at maps" and the language of learning was related to landscapes, oceans, countries and cardinal points. The final spelling test of this unit was taken the last day of face-to-face lessons; that is to say, the 11th of March of 2020. Due to COVID-19 lockdown in Madrid, this test was conducted a couple of days before it was planned in the first place. Notwithstanding, the results of these tests were not affected by this exceptional situation since it was already the second week of practice and students had the necessary time to study the content vocabulary in class. The following chart shows an overview of the results in this unit.

Chart 28: Spelling test scores: Social Science Unit 4⁷⁰



⁷⁰A note of caution is due here since a Chinese student in the experimental group stopped coming to school around mid-February, about a month before Covid-19 lockdown in Madrid. She was unable to complete Natural Science unit 4 and Social Science Unit 4. Thus, scores in the experimental group are weighted with 23 students instead of the usual 24.

It can be observed how the differences in both groups strike. Close to 80% of students in the control group fail to write most of the words dictated in the test. As a matter of fact, results from the first to the second Social Science unit conducted in this term are very similar in the control group. The most significant difference is that the 4% of tests within the risk zone in the first Social Science unit now belongs to tests within the poor zone with 79% of tests in this range. The rest of test performance stays the same from one unit to the other with 9% of tests in the average zone, 4% of tests in the successful zone and 8% of tests in the exceeding zone.

As for the experimental group, they present better results of spelling tests in this unit and improve results from one Social Science unit to another in this term. 17% of tests are in the poor zone. Even though that is an important rate, it leaves 42% of tests in other ranges when compared to the 59% of poor tests in the first Social Science unit. In addition, only 4% of tests remain in the risk zone. However, there are 22% of successful and 35% of exceeding tests, that makes up a total of 57% of tests in the top zone. Hence, more than half of students in the experimental group got results within the top zones in the spelling test. Bearing in mind that only 12% of tests were within the top zone in the first unit, this seems a considerable improvement. In the same vein, we can see that the progress of results in the experimental group is even higher when these results are compared to the top zone tests in the control group, with 12% in both Social Science units.

A possible explanation for the improvement of results in the experimental group is that this Social Science unit (Looking at maps) vocabulary was an extension to the vocabulary studied in the first Social Science unit this term (Landscapes change). Although different words were assessed in each unit, students might have been more acquainted with words such as beach, ocean, mountain, lake or forest. As a consequence, tests within the average and top zones in the experimental group were a lot better in the second Social Science unit.

However, this was not the case in the control group that got very similar results from the first to the second unit this term. These differences may be explained by the fact that students in the experimental group were using a NLP spelling strategy that seemed to help them perform best their content words spelling in a test. On the other hand, the discrepancy between groups could be attributed to students in the control group losing interest to spelling practice failing to copy most of the words required every day or simply doing it without interest or focus and more as a mechanical act.

One interesting finding was that the word *plain* was successfully spelled by a large number of students in both groups. It seems very likely that students did not mix it up with its homophone and more common word *plane* because one student in the experimental group interrupted by saying “Not the one that flies, right teacher?” (“*Pero no el que vuela, ¿verdad, teacher?*” note taken 11th of March 2020)⁷¹. Since I noted that this comment may have been an additional help for students in the experimental group, I made sure I gave the same help to the control group. There is, however, another possible explanation since the correct spelling of this word may have been the consequence of a thorough practice in class as it had already happened in the pilot study with the same words (see chapter 5, section 5.5).

This section has studied the results of spelling tests over the second term in Natural and Social Science units 3 and 4 and has noted that the use of NLP spelling strategies indicates a positive performance in the experimental group when compared to copying words in the control group. The following section will study the relationship between the beliefs students have towards these specific spelling strategies. Consequently, beliefs tests will be examined and triangulated to results in spelling tests to find out the possible connections among them.

7.1.2. Second term: Beliefs tests

This test was adapted from the attitudinal questionnaire of Nahari and Alfadda (2016) and contained seven statements that were presented in English and Spanish using a 5-point Likert scale for their answers (see chapter 4, section 4.4.3). As was mentioned in the previous chapter, the objective of the beliefs test was to evaluate student’s attitudes and opinions about the strategies used in each group (see chapter 6, section 6.2.2). The table below is a reminder of the statements presented on each questionnaire for each group.

⁷¹ Comments have been transcribed respecting the structure and intention of students as a means to keep the nature of their contributions.

Table 18: Set of statements on each questionnaire

CONTROL GROUP	EXPERIMENTAL GROUP
1. I think that copying words helps me to be a good speller in English.	1. I think this strategy helps me to be a good speller in English.
2. I believe that copying words is fun and interesting.	2. I believe that using this strategy is fun and interesting.
3. I believe that copying words helps me to concentrate well when ^[L] _[SEP] learning the spelling of words in English.	3. I believe that this strategy helps me to concentrate well when ^[L] _[SEP] learning the spelling of words in English
4. I think that copying words helps me to learn the spelling of difficult words in English.	4. I think this strategy helps me to learn the spelling of difficult words in English.
5. I think that copying words is simple and easy to use.	5. I think this strategy is simple and easy to use.
6. I believe that copying words motivates me to learn the spelling of words in English.	6. I believe that this strategy motivates me to learn the spelling of words in English.
7. I think that copying words to learn the spelling of words in English gives me more confidence with the language.	7. I think that using this strategy to learn the spelling of words in English gives me more confidence with the language.

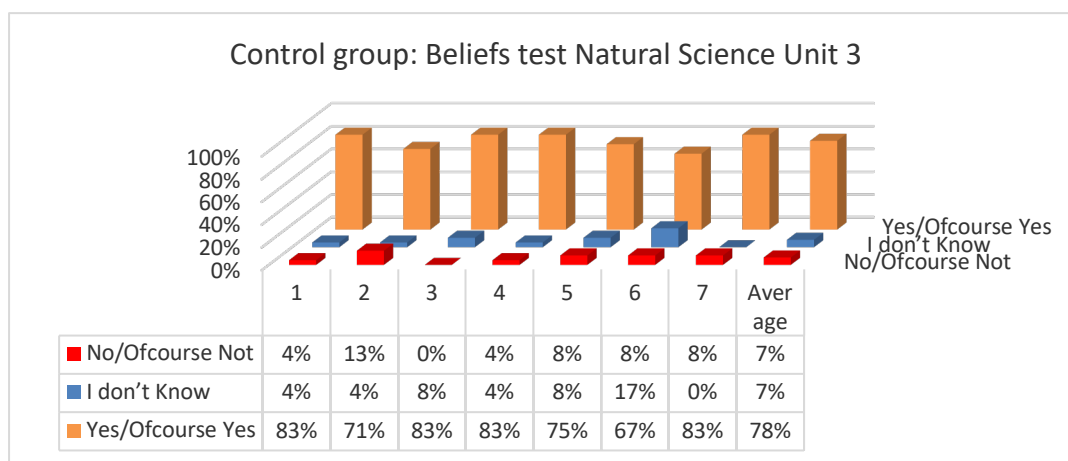
The questionnaire was designed to measure the percentage of participants who answered positively, uncertain and negatively to the statements given. The positive results in this test were triangulated with the average, successful and exceeding scores in the spelling tests. This was done with the purpose of finding out the relationships of successful spelling tests with positive beliefs towards the spelling strategies used. Lastly, a correlation analysis between the beliefs and spelling tests of each unit were provided using the Pearson correlation⁷². In order to provide correlations among tests, a +/-20% of difference in results between tests was considered tolerable (see chapter 6, section 6.2.2 and chapter 4, section 4.4.3 for more information about this test and how it was implemented).

⁷² As pointed out in chapter 6, we consider perfect correlation if the value is near +1. High degree of correlation if the value lies between +0,50 and +1. Moderate degree of correlation if the value lies between +0,30 and 0,49. Low degree of correlation when the value is below +- 0,29 and no correlation when the value is 0. Taken from: <https://www.statisticssolutions.com/pearsons-correlation-coefficient/>

7.1.3. Second term: Natural Science Beliefs tests

In this section, Natural Science (units 3 and 4) beliefs tests will be examined and triangulated with results of spelling tests in the control and experimental group. The following graph presents the answers given by students in the control group for the first Natural Science unit in the second term.

Graph 23: Control group beliefs test Natural Science Unit 3



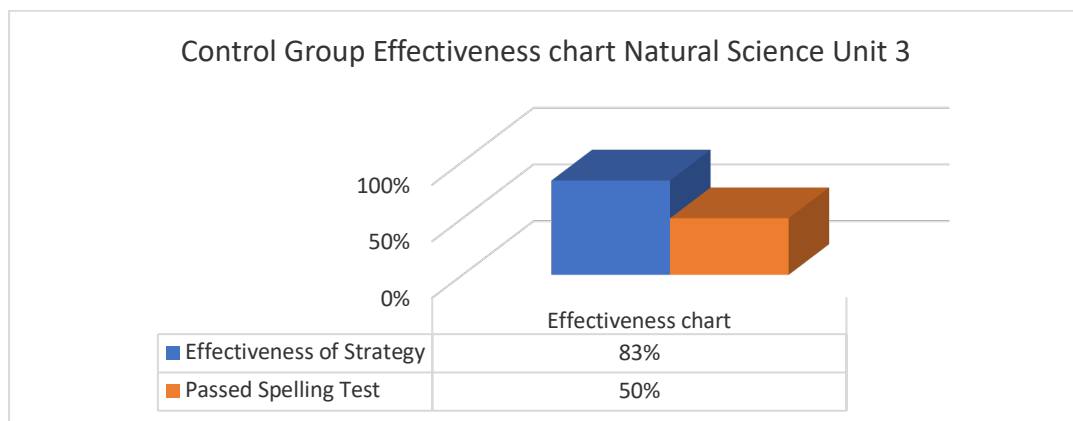
The statistics for students in the control group show that four statements had a very favourable score with 83% of positive answers. That is to say, most students believe that copying words helped them to become better spellers (statement 1), it helped them to concentrate (statement 3), it helped them to learn the spelling of difficult words (statement 4) and it gave them more confidence with the language (statement 7). 75% of students considered copying words as a simple and easy (statement 5) and 71% of students believed that copying words was fun and interesting (statement 2). However, 17% of students were negative or uncertain about copying words as a fun and interesting activity and 16% felt the same doubts towards the simplicity of copying words. Interestingly, the least positive answer was related to motivation (statement 6) since only 67% of students were certain about this whilst 25% were doubtful or negative about this.

Even though 78% of students in the control group answered positively to most statements, there was not a single statement that was 100% validated for students in the control group. As a matter of fact, statements that are closely related to motivation showed that around 20% of students do not believe this is a fun or simple activity or motivates them to learn the spelling of new words. Nonetheless, the large positive results suggest

that students in the control group validate copying words as an effective spelling strategy at the beginning of the second term.

Turning now to the percentage of students who validated copying words as effective, I calculated the average of students' answers on the beliefs (norm. to 10) and triangulated the result with the scores obtained in the spelling tests. In order to organise this data, only scores above 6 points in both tests were taken into consideration (i.e., average, successful and exceeding scores). The next chart indicates the results in the first Natural Science unit in the second term.

Chart 26: Control group effectiveness chart Natural Science Unit 3



As we can observe, the control group recorded more positive beliefs than actual performance in the spelling test. However, 33% of students who believed in the effectiveness of the strategy did not pass the spelling test. Even if half the group passed this spelling test, a large number of students were considering copying words as effective. Nevertheless, the high motivation and beliefs towards this strategy did not translate into similar results. Consequently, it seems that students were relying on this strategy to improve their spelling results when it really did not help achieve better scores.

In order to identify what particular students believed on the one hand, and to determine whether they were performing according to their beliefs on the other, the Pearson correlation was used. The results are presented in the next figure.

Figure 13: Control group Natural Science Unit 3 Pearson's correlation

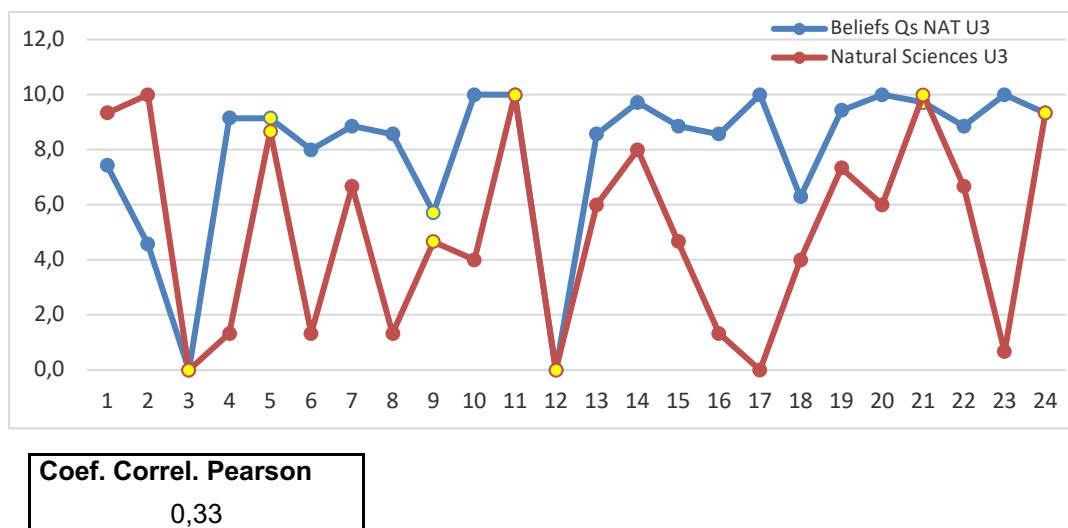


Figure 13 shows the correlation between beliefs and spelling tests. The correlation index is 0,33 which is a moderate correspondence in results. In this unit, there are 7 students⁷³ whose beliefs towards the strategy are in consonance with their performance in spelling tests (signalled in yellow). However, not all of them pass the spelling test. For instance, S3 and S12 show results at 0 points in both tests. The most striking result to emerge from the data is that both students were being tested for dyslexia at the time. Not only were they not performing well in spelling tests but also they were indicating that copying words was neither fun, simple or helping them cope with their learning difficulties.

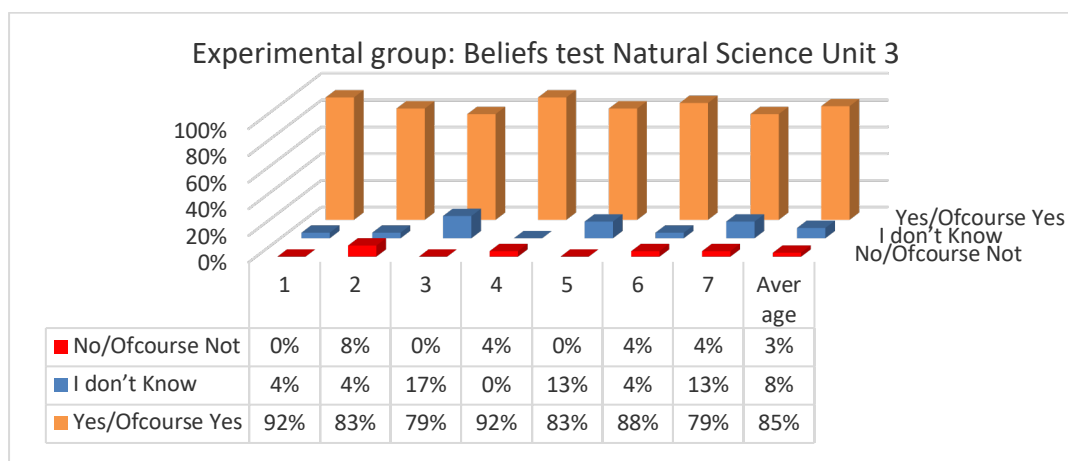
S9 noted moderately positive beliefs towards the strategy with an average close to 6 points. However, she did not pass the spelling test as it was within the poor zone. The fact that she was uncertain or negative to most statements, may indicate that she knew that in this occasion she was not doing the necessary work to pass the spelling test. Consequently, this does not necessarily mean that she was not validating the strategy but that she knew that she could do more from her side to be successful. Even though she had some troubles at home, she was a good student with fair results in all tests and subjects. This brings out the question of students answering the beliefs tests thinking about their performance as students rather than the strategy used itself.

⁷³ A +/- 20% difference between the results of both tests was considered acceptable.

The most positive results come from 3 students that have the exact same results in the beliefs and spelling tests. S11 and S24, both have exceeding scores in both tests. Nevertheless, there is a surprising outcome. S21 displays better results in the spelling test than in the beliefs test. This made me have a look at his specific answers in the beliefs tests. He answered with 5 points all statements except for the one about copying words helping him to concentrate best (statement 3). This seems to suggest that rather than being focused on learning the spellings he was just copying words as a mechanical act. Hence, copying words rather than a strategy to learn spelling was most likely perceived as a chore. Despite the moderate correlation index aforementioned, we could state that there is no tangible evidence that positive or negative beliefs towards copying words for spelling practice change spelling performance.

Concerning the experimental group, the same data was analysed although the beliefs test focused on the use of the NLP spelling strategy used this term. The following graph displays an overview of students' answers in Natural Science unit 3 in the experimental group.

Graph 24: Experimental group beliefs test Natural Science Unit 3

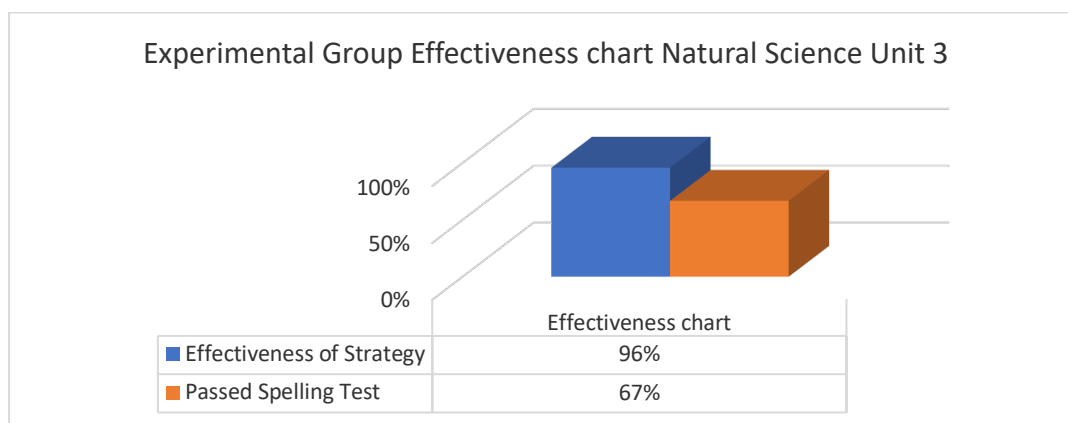


In this test, most students believed that the NLP spelling strategy helped them to become better spellers (statement 1) and that it would help them to learn the spelling of difficult words (statement 4) with 92% in both of them. This was followed by statement 6, in which 88% of students believed that this strategy motivated them to learn the spelling of words in English. At a very important rate, statement 5 also indicated that 83% of students felt this was an easy and simple strategy to use with 13% of students uncertain about the same statement. With the same 83%, students in the experimental group noted

that this strategy was fun and interesting (statement 2). However, a higher amount of uncertain (4%) and negative (8%) answers were recorded. The least successful statements were the ones related to concentration (statement 3) and confidence (statement 7) with 79% of positive answers. Most students that did not answer these statements positively were uncertain and only one was negative towards the NLP spelling strategy giving him more confidence with the language. All in all, 85% of students had positive attitudes towards the NLP spelling strategy used. Bearing in mind that this strategy was new to them and that they had only been practising for a couple of weeks in this term, we can conclude that these results were quite positive.

These percentage of students who validated the NLP spelling strategy (above 6 points) and the scores above 6 points in the spelling tests were crossed in an attempt to find out similar results. The following chart shows the breakdown of these results.

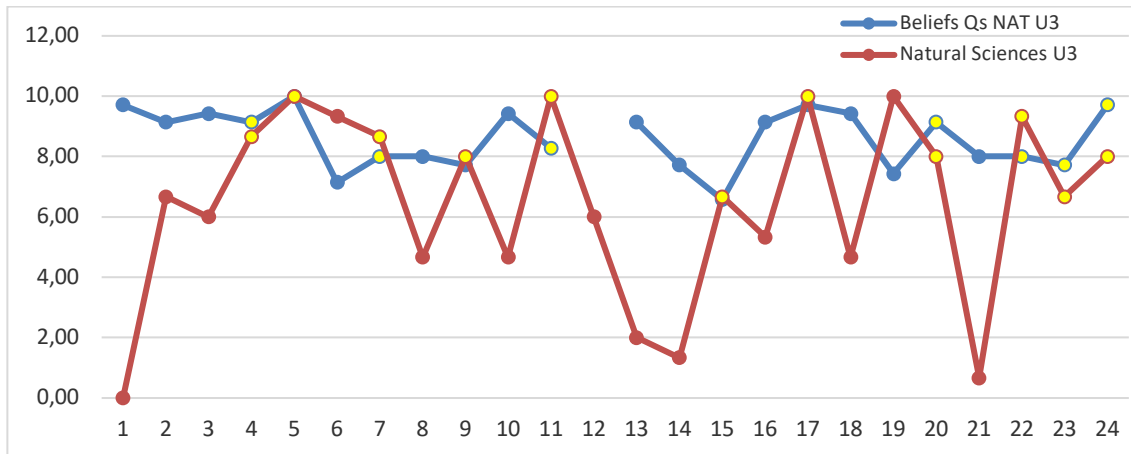
Chart 27: Experimental group effectiveness chart Natural Science Unit 3



As shown in the graph above, close to the totality of the experimental group noted that the NLP spelling strategy used was effective for them. In a similar vein, close to 70% of students also performed accordingly to these beliefs. In this unit, they had just learnt to use a new NLP spelling strategy, most students were likely to be motivated and were eager to believe that this would help them to succeed as spellers. Even though around 29% of students in the experimental group did not perform in accordance with the positive beliefs towards the strategy, this is a reasonable positive result. A possible explanation for this is the high rate of answers related to motivation in the beliefs test as well as the high percentage of positive answers in finding the strategy fun and easy to use.

The results in spelling tests were compared to the answers in the beliefs test to detect possible correlations between them. As it was already mentioned, the Pearson's correlation was also used to analyse these outcomes. These results are presented in the following figure.

Figure 14: Experimental group Natural Science Unit 3 Pearson's correlation⁷⁴



Coef. Correl. Pearson
0,09

The correlation index of 0,09 implies no correlation among tests. However, bearing in mind the acceptable correlation of +/-20% difference between the results in both tests, we can observe that 11 students (signalled in yellow above) were able to correspond beliefs and spelling performance. Having a closer look at results, we can observe how S11 and S23 scores in spelling tests are higher than their actual beliefs about the efficacy of the strategy. Also, S7, S9, S15 and S17 show slightly better scores in the spelling test than positive beliefs towards the NLP spelling strategy. Therefore, almost half of students that present an acceptable correlation got better scores in spelling tests than positive beliefs in the first Natural Science unit in the second term.

A striking result regarding beliefs and performance is the case of S1. She was being tested for dyslexia due to her reading and writing difficulties and had poor spelling performance in every spelling test. However, unlike students in the control group in the same circumstances, she indicated that the NLP spelling strategy was helping her to become a good speller, it was fun, simple or helped her with difficult words. Taking into

⁷⁴ S12 was absent the day before the spelling test and was unable to complete the beliefs test. Therefore, there is a cut in the beliefs line for this student.

account this student's personality, it seems that she wanted to perform well as well as to please the teacher with her answers. She was one of the most motivated students and one of the students with the most difficulties.

Similar to this is the case of S21 with poor results in the spelling tests and a score of 8 points in the average of the beliefs test. He was a struggling student with many problems in and out of school. Again, he noted that the NLP spelling strategy was helping him, albeit this did not translate into better results. Another possible explanation for this is that he was trying to answer tests positively as he may have thought that doing so meant to be a good student.

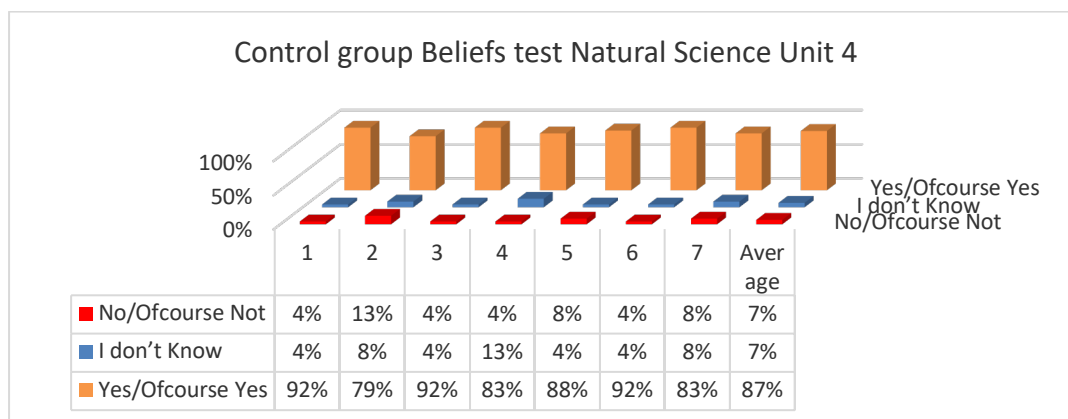
Added to the aforementioned students, there are many other cases in which beliefs were higher than performance in spelling tests⁷⁵. Thus, more than half of the group had more positive beliefs than scores in the spelling test. However, there are also students whose spelling tests scores are actually better than their beliefs (S6, S7, S9, S11, S15, S17, S19, S22). In this sense, I would highlight S6, S11 and S19 whose beliefs showed lower scores due to them answering no or uncertain to the NLP spelling strategy giving them more confidence with the language. In a similar vein, S22 was uncertain about the NLP spelling strategy being easy and simple to use which made her lower her average score in the beliefs test and have a better score in the spelling test.

All in all, it can be argued that the positive beliefs towards the NLP spelling strategy do not necessarily indicate a positive change in results in spelling tests. However, the fact that students with severe learning difficulties thought of the NLP spelling strategy positively, might be a signal of students enjoying their time in the bilingual class. The NLP spelling strategy was worked in pairs, with the teacher monitoring the activity rather than being the focus of attention and the task was treated as a game as opposed to a chore. This excitement and motivation towards a new strategy may have encouraged students in the experimental group to perform better even if later this did not turn into better results in spelling tests.

After reviewing the results of the Natural Science test 3 and triangulated results with the performance of spelling tests in the same unit, I will continue to examine the same data in Natural Science unit 4. The next graph presents the answers of the beliefs test in the control group for the second Natural Science unit in the second term.

⁷⁵ S1, S2, S3, S4, S8, S10, S13, S14, S16, S20, S21, S23, S24

Graph 25: Control group beliefs test Natural Science Unit 4



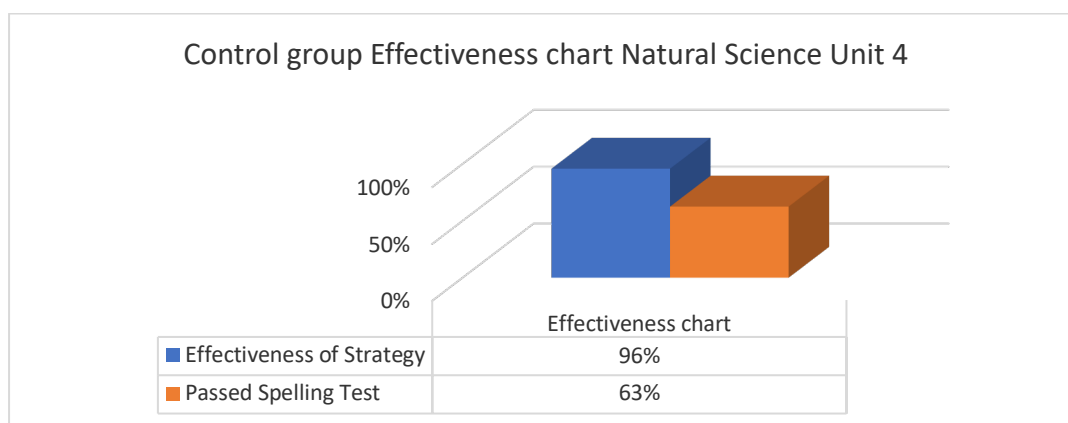
The graph above provides the summary of statistics for the students answers in the beliefs test presented a day before doing the Natural Science unit 4 test. The most successful statements were that students believed that copying words would make them better spellers (statement 1), it helped them to concentrate well (statement 3) and it motivated them to learn the spelling of words in English (statement 6), all three with 92% of positive answers. Statements 1 and 3 were also highly favourable in the first Natural Science unit this term with above 80% of positive answers. However, in the first unit, statement 6 represented below 70% of positive answers. Compared to the 92% in all three statements during this unit, it is a considerable change towards positive beliefs about the strategy.

The second most successful with 88% of positive answers was statement 5 in which students believed that copying words was a simple and easy to use strategy. A little less, above 75% of positive answers, were given to the same statement in the first Natural Science unit. 83% of students believed that copying words would help them to learn the spelling of difficult words in English (statement 4) although 13% was uncertain about the same aspect. The same 83% of students thought that learning spelling by copying gave them more confidence with the language (statement 7). In this case, they have the same percentage of positive answers when comparing the same answers in the first Natural Science unit. Finally, 79% of positive answers went to students believing that copying words was fun and interesting (statement 2), that compared the first Natural Science unit this term was almost the same result. Nevertheless, it is important to highlight that 13% of students, just the same as in the first unit, believed that copying words was neither fun nor interesting.

Ergo, students in the control group gave more positive answers in most statements during the second Natural Science unit in the second term. The same way, their spelling performance improved from the first to the second Natural Science unit this term. Therefore, in general terms, it could be concluded that students in the control group considered copying words as an effective strategy that would help them with spelling.

In an effort to measure students' validation of copying words as an effective strategy, the average of students' answers and spelling performance were weighted to average scores above 6 points. The next chart illustrates the relationship between beliefs and spelling tests in this unit.

Chart 28: Control group Effectiveness chart Natural Science Unit 4

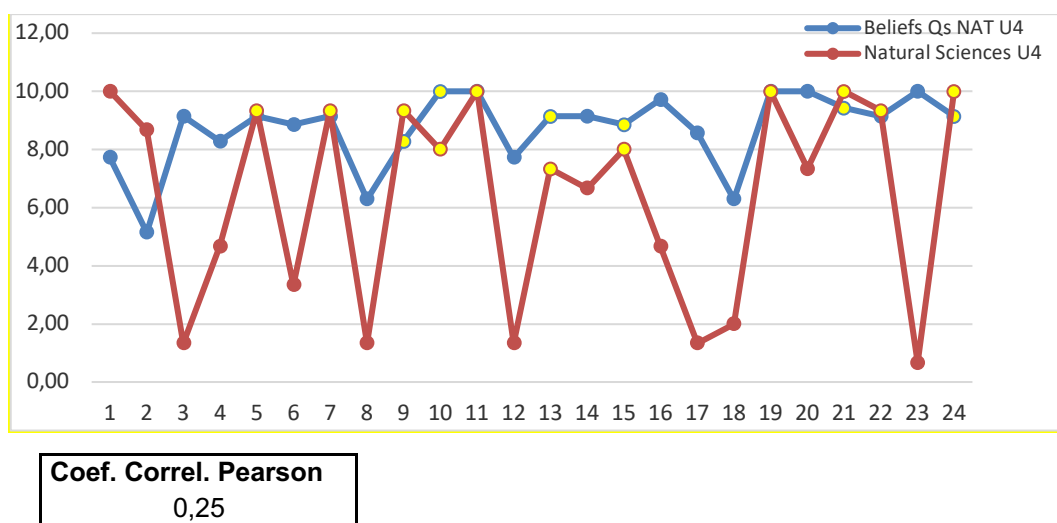


As shown in the chart above, the control group reported more positive beliefs than spelling tests above 6 points. 96% of beliefs tests validated copying words as efficient whilst 63% of spelling tests were successful. Comparing these results with the ones in the first Natural Science unit this term (83% beliefs, 50% spelling tests), it can be seen that positive beliefs towards the strategy grow in consonance with positive results in spelling tests. Therefore, students in the control group may have felt that either these words were easier (plants vocabulary) or that they had been worked more thoroughly through the Science project (see this chapter, section 7.1.1). This may have made them feel more confident and perform better in the spelling test the following day.

In this unit, whilst there is no significant evidence that positive beliefs about copying words as a spelling strategy help students enhance performance, there is a willingness to perform to a certain standard in spelling tests. Although positive beliefs do not necessarily translate into positive results in spelling tests, the fact that they want to perform well is a sign of motivation that is an undeniable significant point in itself.

Further analysis of this data is provided in the next figure presenting the Pearson's correlation of all students and tests in Natural Science unit 4 in the control group.

Figure 15: Control group Natural Science Unit 4 Pearson's Correlation



The Pearson's correlation index of 0,25 shows a low degree of correlation between tests in this unit. Despite this small correlation, when the +/-20% of tolerable difference between tests is applied, we can observe how there are 11 students that are more able to assess their beliefs according to their actual performance in the latter spelling test. Interestingly, five out of eleven were the same students that were able to assess performance in the first Natural Science unit this term. This coincidence had already happened in the first term so it could further support the idea of some students being more mature than others (see chapter 6, figure 7).

Closer inspection to this figure shows that 9 students⁷⁶ do not pass the spelling test. Nevertheless, they all have an average above 6 in their answers in the beliefs test. Consequently, they thought they would perform better than they actually did. Furthermore, it is apparent from this table that very few students have lower beliefs than spelling performance. In this vein, two cases rapidly stand out, S1 and S2. S1 was uncertain about copying words being fun or interesting or giving him more confidence with the language. However, the lowest beliefs score comes with S2. He did not believe that copying words would help him become a better speller, it was fun or interesting, simple or easy or it gave him more confidence with the language. The other statements were uncertain, and he only answered positively to copying words as an activity that

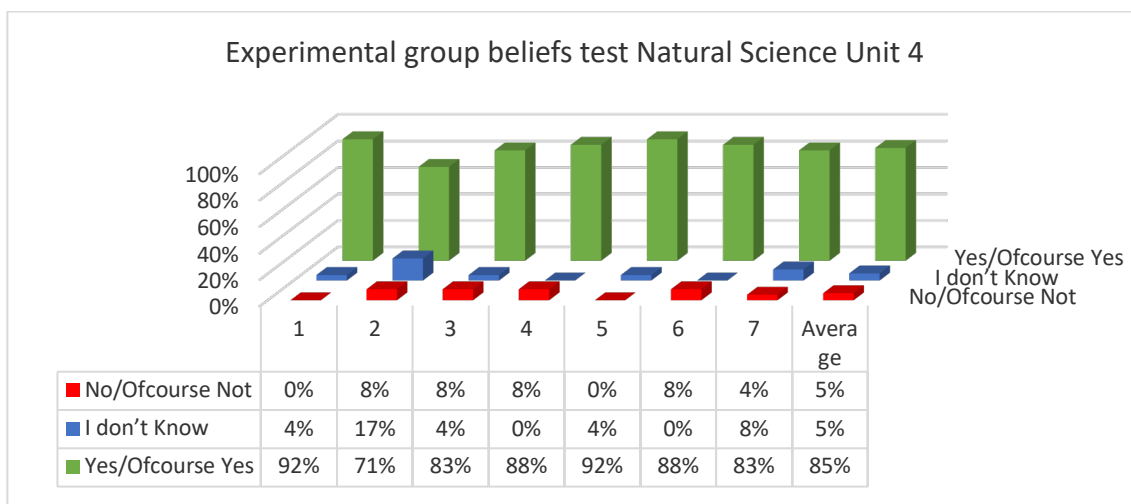
⁷⁶ S3, S4, S6, S8, S12, S16, S17, S18, S23

helped him concentrate best. In spite of this, he was a quite competent student that always got great results in all subjects. In my opinion, this was an activity that he did not enjoy and therefore, he was trying to make a point about this. Regardless, he always got very good scores in spelling tests. This brings out the question whether copying words was actually helping them or making some of them feel burnt out.

Four other students⁷⁷ also showed slightly lower scores in beliefs tests when compared to results in spelling tests. S22 and S24 gave four points out of five to most statements that lower the total average even if they had a good perception towards copying words. Nonetheless, S9 and S21 indicated that copying words was neither fun or interesting, helped her to concentrate or gave her more confidence. Perhaps, these results are a reflection of students in the control group losing interest for a more traditional approach to spelling practice.

Having analysed the results of Natural Science unit 4 in the control group, I will now move on to the discussion of the results for the same unit in the experimental group. In doing so, I will study students' answers to the statements in the beliefs test and the results of the spelling test after a six weeks of spelling practice with NLP. The following is the outline of students' responses.

Graph 26: Experimental group beliefs test Natural Science Unit 4⁷⁸



⁷⁷ S9, S21, S22, S24

⁷⁸ One student stopped coming to school around a month before Covid-19 lockdown and was unable to complete all tests for Natural and Social Science unit 4. Thus, these results are weighted with 23 students instead of the usual 24.

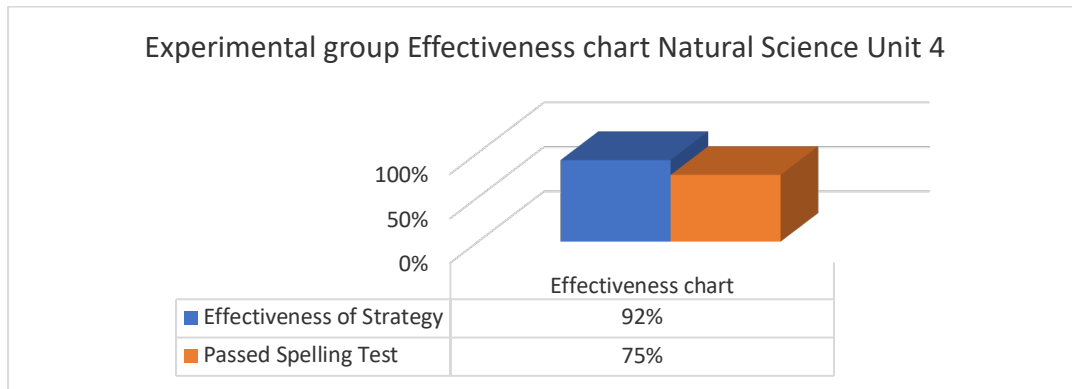
As illustrated in the graph above, 85% of students answered positively to this test. The most optimistic answers were given to statements 1 and 5. Consequently, a wide 92% of students noted that the NLP spelling strategy would help them become better spellers (statement 1) and that it was a simple and easy strategy to use (statement 5). When these answers are compared to the answers given in the first unit, we can see similar results in statement 1 and an increase of positive answers in statement 5. In the first unit of Natural Science this term, 13% of students were uncertain about the NLP spelling strategy being easy and simple to use that is considerably reduced to 4% in the second Natural Science unit this term after six weeks of practice. The second most favourable answers were given to statements 4 and 6. Hence, 88% of students thought that the NLP spelling strategy would help them to learn the spelling of difficult words and that NLP strategy helped them to stay motivated. Similar results were recorded in the first unit of Natural Science this term. However, students in the first unit were more receptive towards motivation's statement with 92%.

83% of positive answers were given to statements related to concentration (statement 3) and confidence (statement 7). These results show an improvement compared to the answers in the first Natural Science unit this term (79% statement 3 and 75% statement 7). Finally, 71%, the lowest positive answers percentage was given to statement 2 that was related to students thinking of the NLP spelling strategy as fun and interesting. In this sense, it is important to highlight that from the first to the second unit the percentage of students feeling uncertain about the NLP spelling strategy being fun or interesting increases from a 4% to a 17%. Looking into each student specific answers, I could find out that the student who gave the lowest score was a student struggling with the bilingual project in general (S15). As a matter of fact, she was a student that at the end of the year applied to change schools to avoid the bilingual project that her family felt as a lack rather than a perk. The uncertain students⁷⁹ were shy, timid, quiet or had had some problems working the strategy with their peers. Hence, answers are marked by all the factors surrounding the class environment and they are also a reflection about their personality.

On the whole, positive answers outnumber uncertain or negative answers about the NLP spelling strategy used this term. In this regard, the next chart displays the proportion of beliefs tests and spelling tests above an average of 6 points in Natural Science unit 4 in the experimental group.

⁷⁹ S7, S11, S13, S14, S21

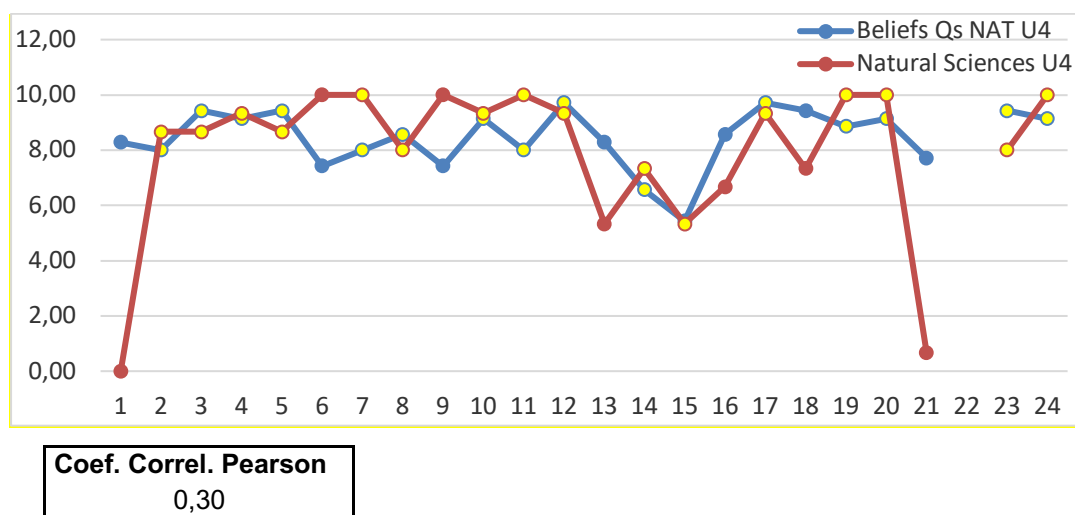
Chart 29: Experimental group Effectiveness chart Natural Science Unit 4



As shown above, 92% of students in the experimental group validate the NLP spelling strategy as a proficient way to improve their spellings. In addition to this, 75% of students, passed the spelling test above the average score. When looking at the big picture, we can see that in the first Natural Science unit this term the difference among beliefs and performance was close to 30%. However, there is only 17% difference among beliefs and performance in the second Natural Science unit. Even if this is a significant number, close to half the students that failed the spelling test indicating that the strategy was helping them in the first unit got it right during the second unit. This is therefore an important progress in students being more able to assess their actual performance in spelling tests.

In a bid to analyse individual tests and results, the Pearson correlation coefficient was used to identify the connection between beliefs and spelling tests in Natural Science unit 4. The following figure presents the correlations among these tests.

Figure 16: Experimental group Natural Science Unit 4 Pearson's Correlation⁸⁰



⁸⁰ S22 did not do any of the tests as she was absent the last month of school before Covid-19 lockdown in Madrid.

The results of the correlational analysis show that there is a moderate correlation index of 0,30. Given the +/-20% of acceptable difference between tests, 16 students (signalled in yellow) present a reasonable correlation in both tests. Until now, the standard finding was to observe that beliefs test overpassed spelling tests. That is to say, students usually tend to have more positive beliefs towards the spelling strategy than actual positive scores in the spelling tests. In this unit, still there is a significant number of students⁸¹ presenting higher positive beliefs than scores in their spelling tests. From these students, all presented correlation among tests except S1, S13 and S16.

Conversely, the figure above reveals that 11 students⁸² had better scores than positive beliefs towards the NLP spelling strategy. From these students, only S6 did not present correlation among both tests. The rest of students who got better scores in the spelling test when compared to the beliefs test have similar results in both tests. Consequently, almost half students were able to match spelling performance and beliefs. As I have already stated, results in spelling tests in this unit were quite favourable. Some of the factors that may have influenced were that the unit about plants had been mainly based on experiential learning and that this topic was related to students' interest at this age (see section 7.1.1, chart 26). Furthermore, one striking observation to emerge from the data comparison is the fact that once more, students who tend to match beliefs and scores in spelling tests are usually the same. In this particular example, around half of students⁸³ that present correlation among tests were the same to do so in the first Natural Science unit this term. In this regard, it seems a matter of students' maturity, development and a sense of responsibility (see chapter 6, figure 7 and this chapter figure 15).

On the other hand, there were two students that stand out due to their negative results in spelling tests. These same students were mentioned in the first Natural Science unit this term because of the same reasons. S1, was being tested for dyslexia at the time and even though she always kept her motivation to the highest levels, could not cope with spelling regardless the way it was being practised. As a matter of fact, sometimes she had trouble keeping up with pair work when practising the NLP spelling strategy and on some occasions when she did not know what to do or lost track of the activity, she copied words for spelling practice (note taken in the observation rubric 26th of February 2020). In spite of this, she always noted to enjoy the activity and was positive about most statements

⁸¹ S1, S3, S5, S8, S12, S13, S16, S17, S23

⁸² S2, S4, S6, S7, S9, S10, S11, S14, S19, S20 and S24

⁸³ S7, S11, S12, S15, S17, S20 and S23

asked in the beliefs tests. As already noted in this study, a possible explanation for this is that she really wanted to please the teacher and did what she thought she had to do to be a good student.

The other student with high positive beliefs and low spelling scores was student 21. He was a struggling student who had difficulties in all areas. Furthermore, he had big troubles at home and he could not count with her mother's help to study as she was an illiterate person. According to the notes taken in the observation rubric, he was working below expectations during the NLP spelling strategy practice in class (note taken in the observation rubric 26th of February 2020). Therefore, I believe that this student wanted to answer positively to the beliefs test so he could look good in front of others, as he was quite self-conscious about his learning abilities. In this case, he did what he thought he had to do to perform well in class. In line with Mirmán Flores and García Jiménez's (2015) study on the influence of the context and self-concept in learning English as a foreign language, the results show that there are some learning differences that can be partially explained with elements outside school. Consequently, it is normal that they get worse results than others with those chances if students are not provided with opportunities outside school to practice or learn the foreign language.

Nevertheless, taking into account the results in the first Natural Science unit this term (Unit 3, Animals) and the lack of correlation among the beliefs tests, the moderate correlation presented in this second unit of the term can be considered quite encouraging.

Having considered the results of the Natural Science units 3 and 4 in the second term, the following is a brief outline of the analysis done in this section.

7.1.4. Second term: Summary of Natural Science Beliefs tests

In the Natural Science units analysed this term, we could see how both groups of students had a positive attitude towards the spelling strategies used. In general terms, we could therefore translate those comments into motivation towards the tasks carried out in class with regard to spelling. In overall terms, the experimental group performed best in both Natural Science unit what has been discussed as more positive attitude towards spelling work.

After examining students average to all statements given in the beliefs tests, I calculated the average of students' results in both, the beliefs and spelling test. This way, I tried to throw light on the average of students who were positive towards the effectiveness of the strategy. The standard finding was to discover that positive beliefs towards the spelling strategies always outperformed the average of results in the spelling tests. Alike spelling tests, the experimental group showed a better relationship between both, spelling and beliefs tests.

When looking at students results individually, the Pearson's correlation was carried out in which a +/-20% of difference among tests was considered an acceptable correlation. The control group passes from a moderate correlation in the first unit to a low correlation in the second unit. The experimental group, on the other hand, goes from no correlation to a moderate correlation. Looking at specific students, we could also observe how some students had better results in the spelling tests than the beliefs tests in both groups. Mostly in the control group this finding was related to students feeling tired of copying words for spelling practice.

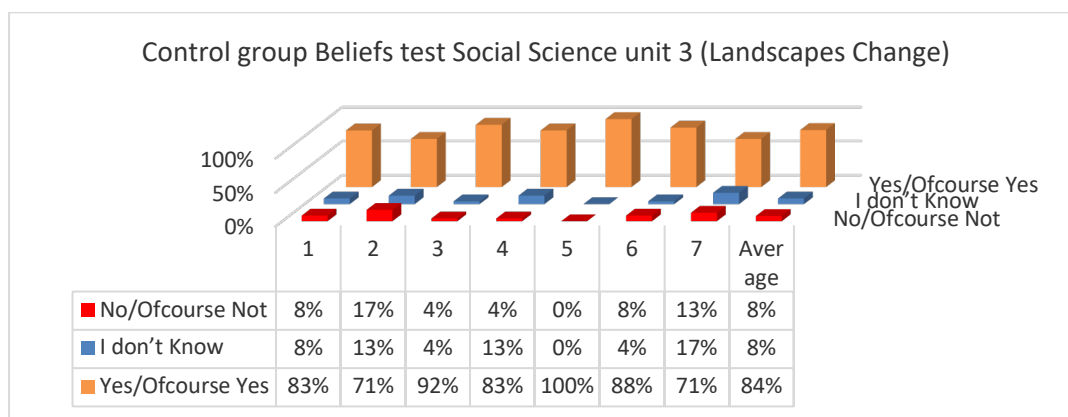
In a nutshell, it could be argued that scores in spelling tests do not necessarily improve when there are positive beliefs towards a particular spelling strategy, whether it is copying words or NLP spelling strategy. Nevertheless, the improvement in the correlation results from the first to the second unit in the experimental group it is a hopeful result. Generally, one of the most interesting finding is that at least half of the students that are able to assess their beliefs according to their actual performance test are usually the same. This result may be explained by the fact that those students are more mature and thus, more aware of their own learning.

The section that follows portrays the review of results of beliefs tests in units 3 and 4 in the second term of study. The same structure as the above mentioned will be pursued to provide cohesion to the study.

7.1.5. Second term: Social Science Beliefs test

This section will deal with the results of the beliefs tests of Social Science units 3 and 4. These results will be reviewed and triangulated with results of the spelling tests in both groups. The following graph represents the answers of the control group of the beliefs test for the first unit of Social Science this term (unit 3). This test was held in February 2020.

Graph 27: Control Group Beliefs test Social Science Unit 3



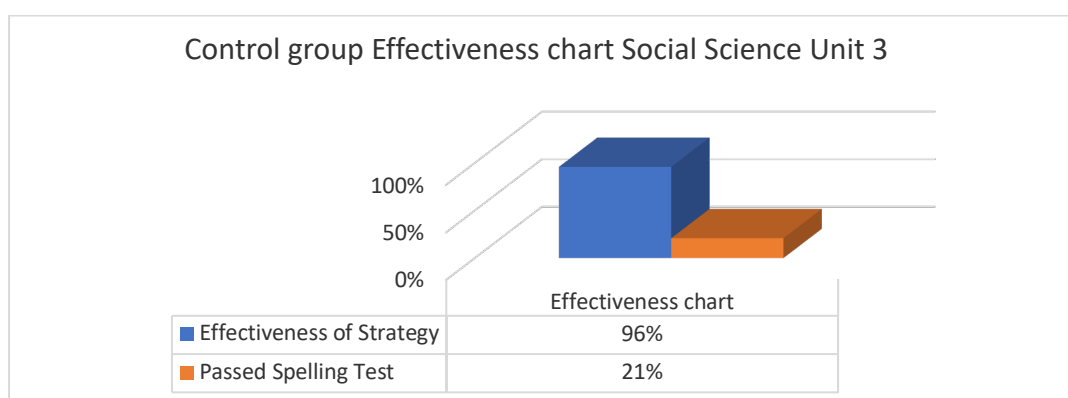
The graph above illustrates the percentage of positive, uncertain and negative answers in the beliefs tests done a day before the spelling test of Social Science unit 3. One interesting result is that 100% of students believed that copying words was simple and easy (statement 5). It is the first time that all students agree in one statement. In spite of the unanimity about the simplicity of copying words as a spelling strategy, 75% of students failed to pass the spelling test. In general terms, we can observe how even if they succeeded at this activity, they did not benefit from it when trying to recall spellings from memory.

The second most approved statement dealt with copying words helping students to concentrate with 92% of students answering positively to statement 3. In the third place, 88% of students thought that this strategy motivated them to learn spelling (statement 6) which is a good rate of students feeling inspired to continue learning how to write accurately in English. A similar percentage, 83% of students considered that coping words helped them to become better spellers (statement 1) and that this would help them to learn the spelling of difficult words (statement 4).

Finally, the least approved statements were the ones related to copying words being fun and interesting (statement 1) or giving them more confidence with the language (statement 7) with 71% of positive answers. Consequently, this means that around 30% of students were negative or uncertain about the same statements which is a considerable number. Students at this time had been copying words for about 4 months and probably were beginning to get tired of this daily activity. Therefore, they might have tried to make a point and call the attention in this strategy being boring and not helping them to give them self-assurance with the language. In spite of this, on the whole, 84% of students answered positively to most statements and thus, copying words was being supported as a useful spelling strategy.

The next segment compares the percentage of spelling tests above the average score and the same percentage of students validating copying words as an effective strategy. The following chart shows the connection between these two elements.

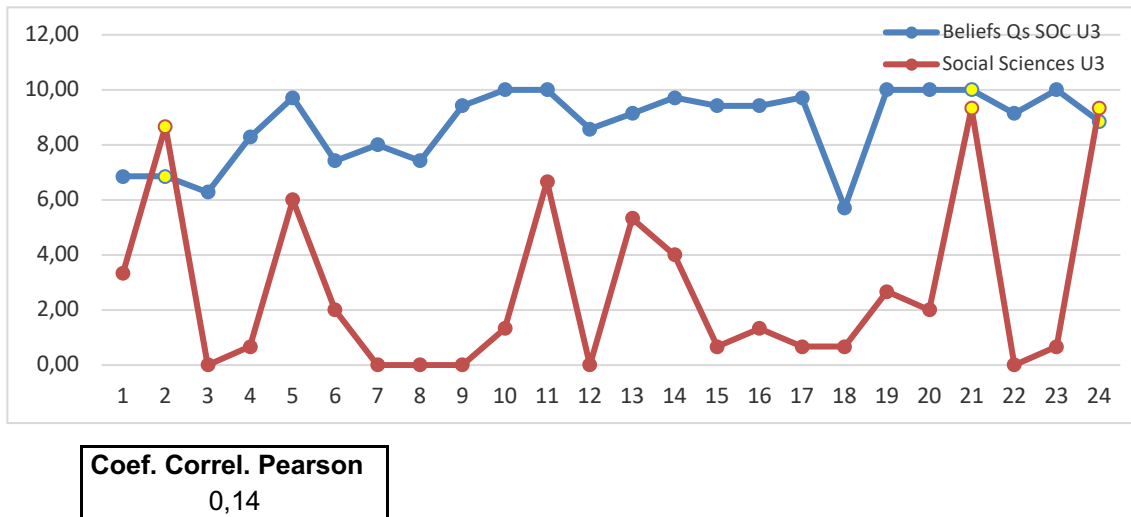
Chart 30: Control group Effectiveness chart Social Science Unit 3



A comparison of the beliefs and spelling tests results reveal that the difference among tests is great. 96% of students validate copying words as an effective strategy. However, only 21% of students pass the test to an average standard. Hence, a difference of 75% of students were wrong to match beliefs and spelling performance. The positive answers in considering copying words as simple and easy, or helping students to concentrate might have had an impact on good results in the beliefs test. However, spelling performance appeared to be unaffected by positive beliefs.

In order to explore individual results in both tests, I applied the Pearson correlation with the aim to identify potential connections between results. The next figure illustrates results in the control group for the first Social Science unit this term.

Figure 17: Control group Social Science Unit 3 Pearson's Correlation



As illustrated, the Pearson correlation index is 0,14 which is a low degree of correlation. It stands out that only three students (signalled in yellow) show fair correspondence between tests once the +/-20% of tolerable difference is applied. From these students, S21 and S24 had always been close to match beliefs and performance in all tests carried out so far in this term. Therefore, the fact that they may have been more mature than others to assess themselves remains in sight. Added to the 3 students aforementioned, S5 and S11, are the only ones passing the spelling test above the average score. In fact, they are regular students that tend to keep beliefs and performance in consonance.

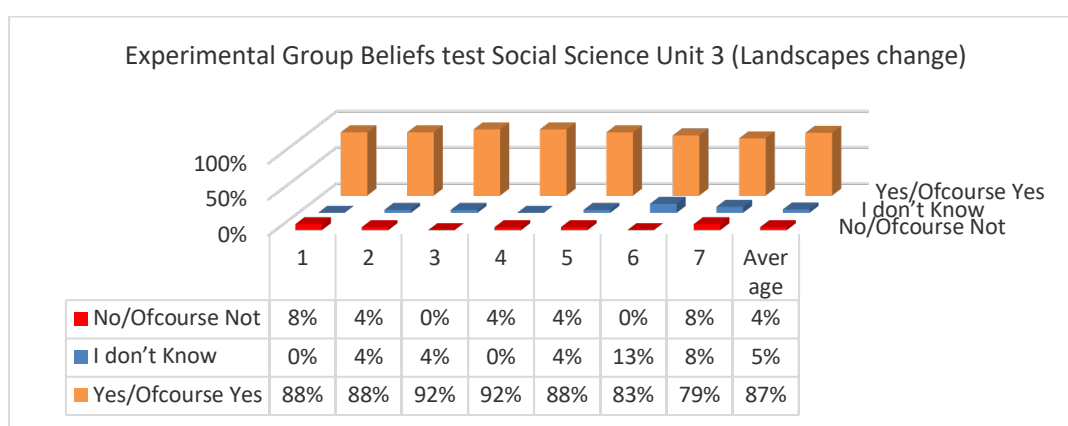
One interesting aspect is that S18 beliefs were just below the average score. He was an ASD student (Autism Spectrum Disorder) with no necessary curricular adaptation but who did all tests with the help of a specialised assistant. Despite this help, he always answered what he considered true or correct for himself. It is significant that he is the only student a little more hesitant towards copying words as an effective strategy and actually failing the test. Further examining his answers, he replied “no” to most statements. Thus, he was not feeling motivated, confident or thought that copying words would especially help him in the learning of difficult words. Nevertheless, he was positive about this strategy being simple, helping him to concentrate and was certain that it would help him to become a better speller. Hence, this could be an example of a student feeling burnt out

that enjoyed personal work and not having to interact with others, but not getting any positive result from this activity.

The rest of the group even if they all answered positively to the beliefs test, they did not perform accordingly. Ergo, most students failed to match their performance to what they said this strategy was doing for them.

In what follows, the results of Social Science unit 3 will be analysed for the experimental group. The forthcoming graph shows the answers of the beliefs test for this unit in this group.

Graph 28: Experimental Group Beliefs test Social Science Unit 3⁸⁴



According to students' opinions, the NLP spelling strategy helped to concentrate (statement 3) and helped with the spelling of difficult words (statement 4) to a 92% of students. A wide 88% thought that the NLP spelling strategy would help them become good spellers (statement 1), it was fun and interesting (statement 2) and simple and easy to use (statement 5). The least supported statements were the ones related to motivation (statement 6) with 83% of positive answers but 13% of doubtful students, and confidence (statement 7) with 79% of positive answers and 16% of doubtful and negative answers.

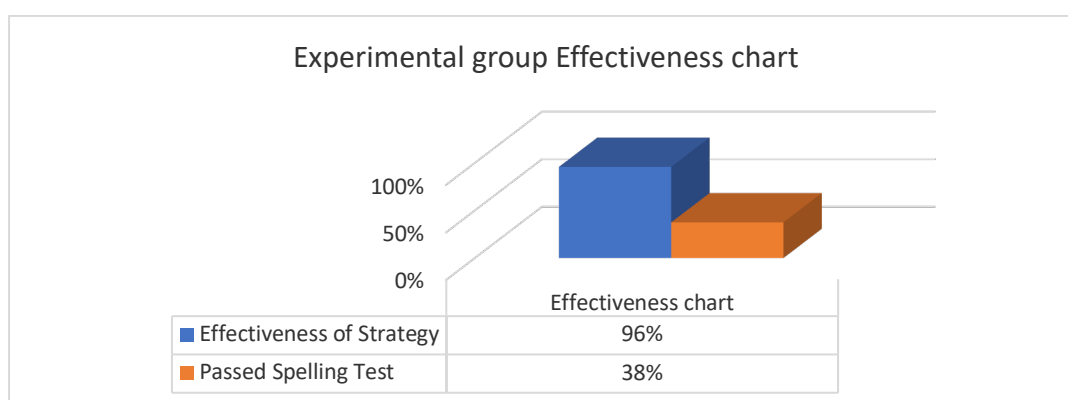
When these results are compared to the answers given by the control group in the same unit, it can be seen that the results seem quite similar. However, there are significant differences in statement 2 and statement 5. In this vein, around 17% more of the students in the experimental group enjoy the NLP spelling strategy more than copying words for the control group. However, a 100% of students in the control group believe that copying

⁸⁴ S8 was absent for a couple of days when the beliefs and spelling tests were conducted. Therefore, his answers are not in display in the graphs for this unit. These results therefore must be interpreted with caution.

words is simple and easy whilst 12% of students in the experimental group still have doubts about the simplicity of the NLP spelling strategy. This finding, whilst preliminary, suggests that students in the experimental group may have felt driven and motivated towards spelling work with NLP spelling strategies, even if this meant a challenge for some of them. All in all, 87% of students in the experimental group believe in the NLP spelling strategy as an enjoyable activity and a source to improve their spelling in English.

Turning now to the rate of students validating the NLP spelling strategy in the beliefs test compared to the students passing the spelling test, the chart below shows the contrast among tests.

Chart 31: Experimental group Effectiveness chart Social Science Unit 3



As it can be observed in the chart above, 96% of students believed in the efficiency of the NLP spelling strategy whilst only 38% of students passed the spelling test above the average score. Hence, 58% of students did not record connections between beliefs and spelling performance. When these results are compared to the same results in the control group, there is around 20% of improvement which, even if results are not very encouraging, it is a nice outcome.

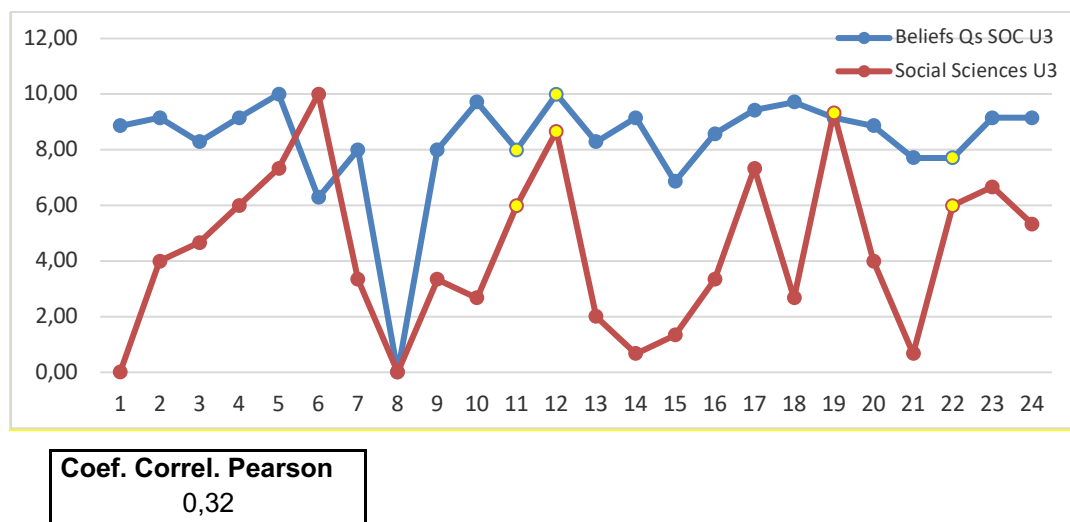
In order to understand these results, it is important to go back to the spelling tests in this unit. As it was seen in the previous section, the results in this Social Science unit were quite discouraging for both groups (see section 7.1.1). More than half the experimental group and more than 70% of the control group failed to pass this test. A possible explanation for these results was that *landscapes* as a topic was not appealing to students at this age (see chart 27).

Nevertheless, they supported the idea of learning spelling with them when students were surveyed about their feelings and opinions towards the spelling strategies used in class. Even more, in the case of the case of NLP spelling strategies as they seemed more

enjoyable to students. Nonetheless, these positive beliefs towards spelling practice were not turning into positive outcomes for any group.

With that in mind, a more detailed account of each student results in both tests are presented in the next figure.

Figure 18: Experimental group Social Science Unit 3 Pearson's Correlation⁸⁵



As shown in this figure, there was a moderate correlation index of 0,32 in the experimental group. It is the second time that the experimental group presents a moderate correlation among tests (also found in Natural Science unit 4, two weeks after this Social Science test was conducted) which is indeed a positive outcome. Furthermore, 4 students presented a fair correlation among tests (signalled in yellow)⁸⁶. Interestingly enough, these students were also close in beliefs and performance in all Natural Science tests conducted this term. Ergo, the possibility of these students being more mature than others and that this maturity helped them connect best beliefs and performance is still at stake.

One more interesting result is that S1 and S21 remain to fail the spelling test and assess their beliefs towards the NLP spelling strategy above the average score⁸⁷. Similar reasons to the ones given in Natural Science results in this term might be applied to this unit too (see section 7.1.3 figures 14 and 16).

⁸⁵ As it was already mentioned S8 was absent for a couple of days when the beliefs and spelling tests were conducted. Therefore, his score remains at 0 points for both tests even if he never complied with this work.

⁸⁶ S11, S12, S19 and S22

⁸⁷ S1 was a student that was being diagnosed with severe dyslexia at the time of the study. S21 was a student at social risk of social exclusion. Even if he was not specifically diagnosed of a learning difficulty, he was considered as an ADHD student. Furthermore, both students had learning support in Spanish language and Maths due to their literacy troubles.

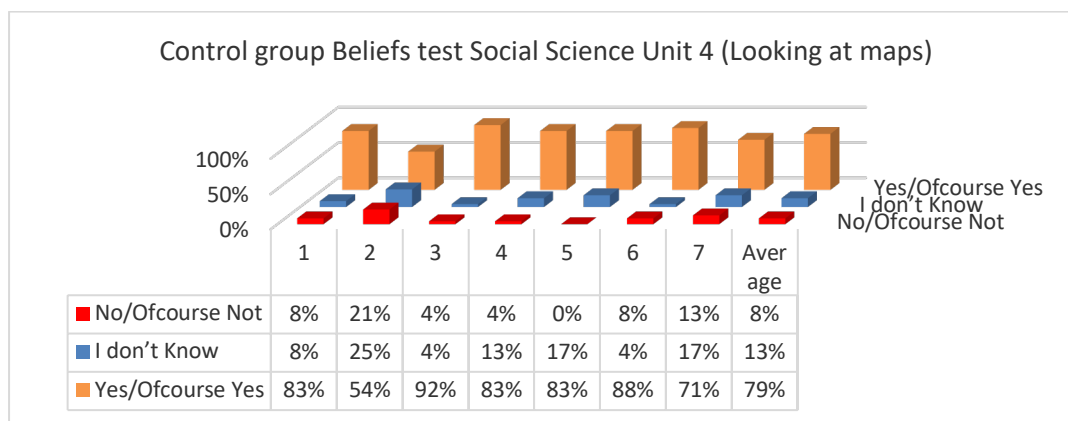
S6 was the only student whose beliefs were actually lower than spelling performance. He answered “no” to two important statements. He did not think that the NLP spelling strategy would help him become a good speller and thought that the strategy was neither fun nor interesting. In addition to this, he was uncertain that the NLP spelling strategy gave him more confidence with the language. The answers in this beliefs test made me look into the results of the same student for other beliefs tests taken this term. All other tests had positive answers in most statements except the one related to concentration (statement 3) and confidence with the language (statement 7) in two other questionnaires. Overall, he was always very positive about how the NLP spelling strategy made him feel towards his spelling work.

In the attempt to find a possible explanation for his change of mind, I examined class notes taken on the journal and observation rubrics to find some clues. Accordingly, I found the observation rubric for the small group he had been practising spellings with. Based on my notes, they were all working below expectations. One student of the three was absentminded (S2, who failed the spelling test) and S6 and S3 were not cooperating with each other (only S3 failed the spelling test). In addition to this, I noted how “they all take a while until they change to the second word” (note taken the 30th of January 2020). Consequently, they were not working together or were motivated towards the spelling practice with NLP this time. Thus, it is not surprising that S6 beliefs were also relatively lower than other times.

If they are engaged in the activity, having fun and participating, they feel that the strategy works even if their results in spelling tests are not in consonance and thus, respond positively to the beliefs test. On the other hand, as is the case here, when students feel that they have been paired with others who are not working well, feel unmotivated, tired or distracted, some students like S6 note in their beliefs that this strategy is not as useful. This brings out the question of whether beliefs have a connection to the activities carried out in class and the circumstances in which these happen.

After considering data and results from Social Science unit 3 in both groups, I will discuss the results from Social Science unit 4. The following graph displays the rate of answers given in the beliefs test in the control group for the second Social Science unit this term.

Graph 29: Control Group Beliefs test Social Science Unit 4



This graph reveals that the most approved statement was related to copying words helping students concentrate best with 92% (statement 3). 88% of positive answers were given to motivation (statement 6) which is still a very positive rate. 83% of positive answers were given to copying words helping them to become better spellers (statement 1), helping them to learn difficult words in English (statement 4) and copying words being simple and easy to use (statement 5). However, around 17% of students were uncertain or negative about copying words as a means to learn difficult words or being simple nor easy.

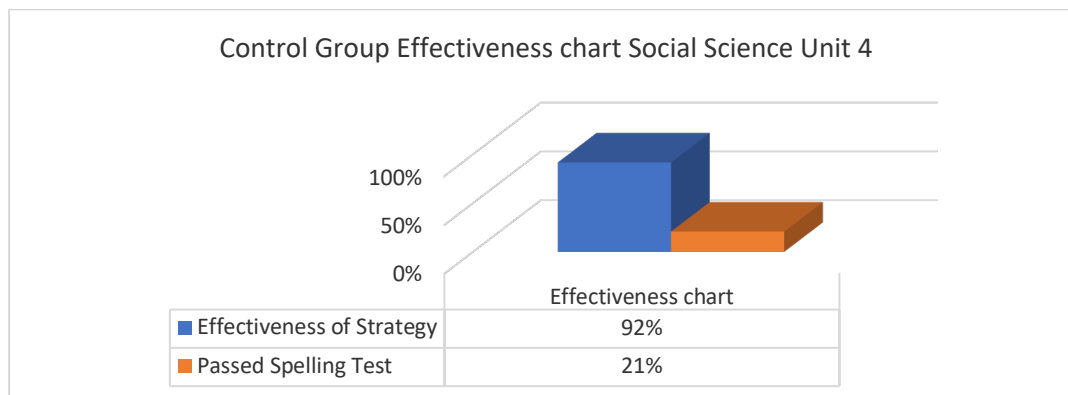
71% of students believed that copying words gave them more confidence with the language whereas around 30% of students are doubtful or negative about this aspect (statement 7). Surprisingly, only around half of students (54%) thought that copying words was fun or interesting whilst the other half of the group divide their answers among uncertain and negative. This is a rather significant outcome since it is the first time that almost half of the group notes that copying words might be a boring and dreary activity.

When these results are compared to the same test made in Social Science unit 3, we can see very similar results in several statements. As a matter of fact, five statements got the same results in both units (statements 1, 3, 4, 6 and 7). It seems possible that these results are due to students getting used to answer the same in all tests as a consequence of having done several of them.

Nevertheless, statements 2 and 5 results are rather unexpected. In the first Social Science unit this term 71% of students believed that copying words was fun and interesting whilst this rate decreases to a 54% in the second unit. In addition, the 100% of students who believed that copying words was simple and easy decreases to 83% that even though it is an important percentage of students makes another 17% of them uncertain about this. This decrease in positive answers in these statements could be attributed to students feeling burnt out from two complete terms copying Science vocabulary each day.

In the attempt to triangulate the efficacy of the strategy according to students' beliefs and the results obtained in the spelling test, the chart below illustrates the results of tests above average score in both tests.

Chart 32: Control group Effectiveness chart Social Science Unit 4

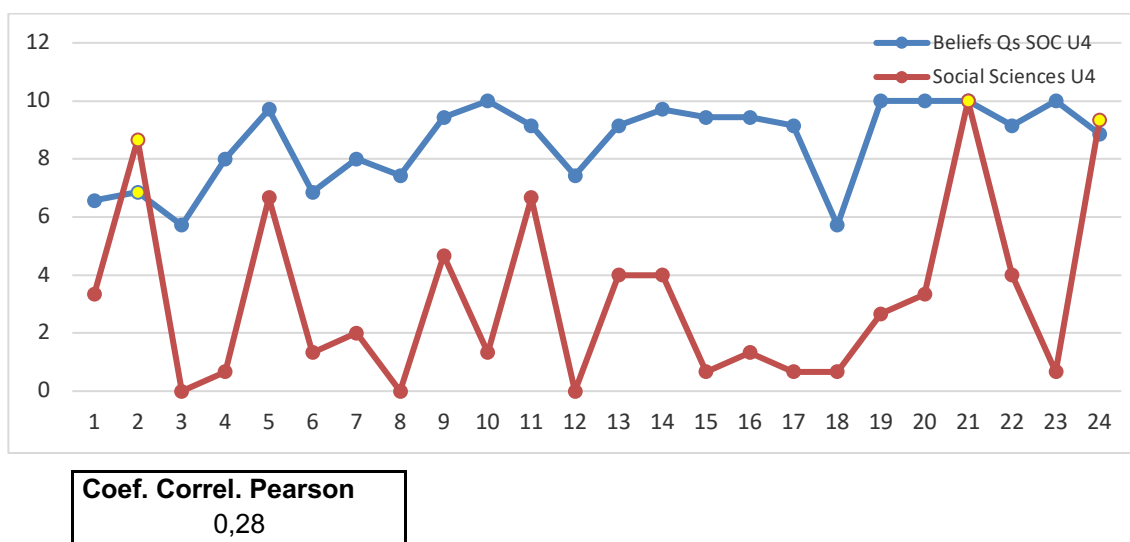


As it was already mentioned, results in the control group for both Social Science units were quite similar this term. However, from the 96% of students validating copying words as an effective strategy it decreased to a 92% in the second unit. On the other hand, the rate of passed spelling tests remained the same in both units with 21%. Hence, there is a difference of 71% of students not being able to assess themselves according to their actual performance in tests. Therefore, students in the control group were failing the spelling tests while they thought that copying words was a useful strategy.

Difference between beliefs and performance may have been influenced by students wanting to perform well in front of others. As a consequence, they might have believed that answering positively to most statements was what the teacher needed from them. On the other hand, answering positively to statements could show others that they did not have any problems with the foreign language and thus, were good students. In my experience, children at this age tend to be shy and self-conscious and try to hide their learning difficulties in front of others. In line with Peters, Klein and Shadwick's (1998) study on special education and learning difficulties these results may indicate that not only students try to hide their learning difficulties from their classmates but also, that they spend a lot of energy trying to do so. As a consequence, answering positively to most statements seemed like the mainstream and best thing to do. As a result, only those students who are confident enough about their learning may have given a different (and in this case negative) answer.

In an effort to find results of each student's beliefs and spelling tests, the Pearson correlation was calculated in order to seek for the relationship between their results. The following figure shows the control group performance in the second and last Social Science unit this term in both tests.

Figure 19: Control group Social Science Unit 4 Pearson's Correlation



There is a low degree of correlation of 0,28 that compared to the 0,16 obtained in the first Social Science unit is an improvement. As already mentioned, Social Science spelling tests result this term were very similar in both units (see section 7.1.1). Therefore, the worsening of results in the spelling tests from one unit to the other is not very significant. However, there is a slight worsening of results in the beliefs test which made possible that the correlation among tests was closer this time.

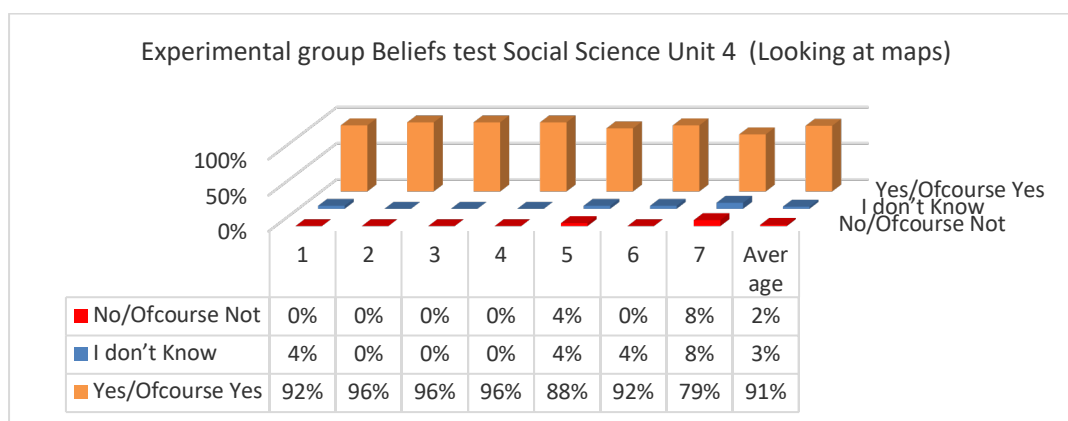
Having a deeper look to individual results in tests, we can see that 3 students (S2, S21 and S24) were matching beliefs and performance. Interestingly, S2, a very confident student who always had results above the average in all subjects notes lower beliefs than spelling performance. He answered “no” to copying words helping him to become a better speller and this activity being fun or interesting. At the same time, he was uncertain about copying words helping with the learning of difficult words or giving him more confidence with the language. However, he was positive about concentration, simplicity and motivation which made the average of his beliefs test slightly above the average score. A more in-depth analysis indicates that S2 beliefs had been lower than performance in all tests this term (see results in Natural and Social Science unit 3 and 4 for this student). Hence, this particular result further supports the idea of self-confident students giving an honest answer not influenced by others.

The other two students who were able to match beliefs and performance were S21 and S24. They were regular students that were usually assessing themselves and their beliefs close to their actual performance in all tests this term (see results in Natural and Social Science unit 3 and 4 for these students). This finding is consistent with some students being more mature to be able to give an accurate answer in the beliefs test.

Furthermore, there are other cases worth to mention in this figure. S18 (ASD, student) reported beliefs just below the average score. Given his individual characteristic, this could be another example of a student who is not interested in what others may think about him and thus, giving an honest opinion. Similarly, S3 (dyslexic student) noted her beliefs just below the average score and actually failing the test. At this time, she already knew that she had a specific learning difficulty as several parent-teacher meetings had been held. Although she answered positively to statements related to concentration, the learning of difficult words or copying words being simple, she answered negatively to all the rest of statements which lowered her average in this test. Interestingly, she failed to copy most words from the board even if she was seated in the front row. Hence, I helped her by copying the words in her notebook. Nevertheless, I still found some spelling mistakes in her work. A clear sign of her specific difficulty with the language.

One more interesting case is S12 (also dyslexic) who gave a very positive rate to all answers in the beliefs test, albeit she failed all words in the spelling test. This could be another example of a student trying to please the teacher or uncomfortable to make explicit her learning difficulties in front of others.

Following the analysis of Social Science unit 3 in the control group and having triangulated results of beliefs and spelling tests, I will now examine the equivalent data for the experimental group. The next graph evinces the experimental group beliefs test answers for the second unit of Social Science this term.

Graph 30: Experimental Group Beliefs test Social Science Unit 4⁸⁸

As can be seen from the graph above, most answers in the experimental group were higher than 90% of positive answers. 96% of positive feedback was given to the NLP spelling strategy being fun and interesting (statement 2), helping them to concentrate (statement 3) and helping them to learn the spelling of difficult words (statement 4). Bearing in mind that one student was absent to take this test, this makes 100% of students being positive about the NLP spelling strategy in three aspects. When these results are compared to the same answers in the control group, there are significant changes that must be outlined.

The biggest difference was for statement 2, with 100% of students in the experimental group feeling positive about the NLP spelling strategy being fun or interesting versus more than half of the control group being uncertain or negative about this aspect. Consequently, students in the experimental group felt driven and motivated to practice their spellings with NLP whilst the control group was perceiving this task as a chore or a burden to a high percentage.

Regarding the statement related to concentration (statement 3), we can observe how the difference between groups in concentration was minimal (92% in the control and 96% in the experimental). As for statement 4, concerning and the learning of difficult words, we can notice how the experimental group believed to a 100% that the NLP spelling strategy helped them to learn these difficult words whilst 17% of students in the control group felt unsure or negative about this. Similarly, when these results were compared to the same results in the first Social Science unit this term for the experimental group, with positive answers ranging from 88% to 92% in the same statements, it can be

⁸⁸ A student stopped coming to school a month before Madrid's lockdown due to COVID19. Thus, the average in this graph has been calculated with 23 students instead of the usual 24.

considered a decent progress. Overall, answers to these statements were indeed considerable improvements for the experimental group this term.

The second most favourable rate was 92% of affirmative answers given to the NLP spelling strategy helping them feel good spellers (statement 1) and motivation (statement 6). Only one student in each statement answered uncertain to these statements. Bearing in mind that in the first Social Science unit this term 8% of negative answers were given to the first statement and 13% of uncertain answers were given to motivation (statement 3) it can be considered a nice step forward. Also, it could be said that the experimental group was feeling a lot more motivated than the control group when comparing these two statements to the same results in the control group, with around 16% of students feeling doubtful or negative about the same statements. Consequently, answers in these statements significantly improved from the first to the second Social Science unit this term for the experimental group.

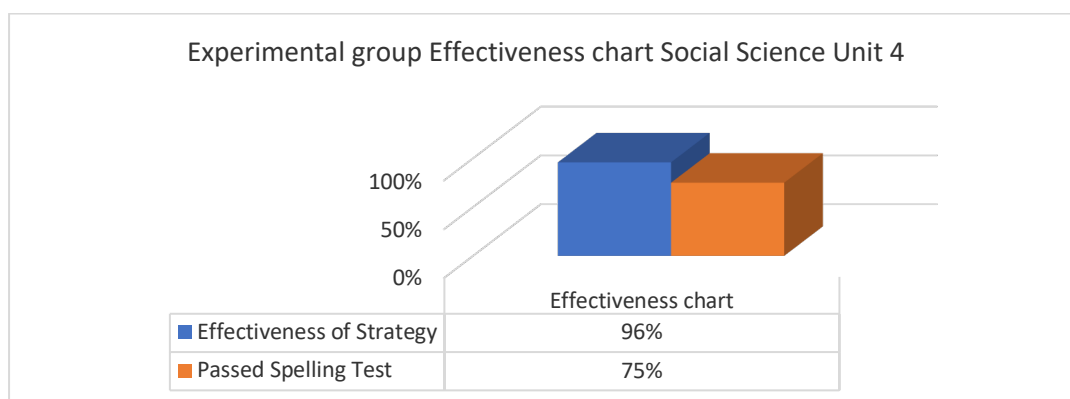
Just below 90% of students in the experimental group thought that the NLP spelling strategy was simple and easy to use (statement 5), which is the exact same rate they assigned to the same statement in the first Social Science unit this term. Therefore, 8% of students were uncertain or negative about the same aspect whilst 17% of students in the control group had granted an uncertain feedback in the same statement. Given that copying words seems like a straight-forward activity for most students in second grade, whereas the NLP spelling strategy is something students have to learn in advance to be able to practise spelling this can be considered a great advance.

Finally, 79% of students thought that the NLP spelling strategy gave them confidence with the language (statement 7). In addition, this was the same rate of positive answers for the same statement in the previous Social Science unit for this group. Although the control group gave a similar 71% of positive answers to this statement, the fact that around 30% of students in the control group versus a 16% in the experimental group was unsure or negative, makes this a positive rate for students in the experimental group.

Given that results in the experimental group improved from the first to the second Social Science unit this term and outshined the results in the control group, it can be argued that these was a rather positive outcome. Hence, the NLP spelling strategy was being approved and enjoyed by a large number of students in the experimental group.

Further analysis brought the triangulation of results in the beliefs and spelling tests in this unit for the experimental group. The following chart offers the proportion of students validating the efficacy of the NLP spelling strategy and the proportion of students who passed the spelling test above the average score for Social Science unit 4.

Chart 33: Experimental group Effectiveness chart Social Science Unit 4



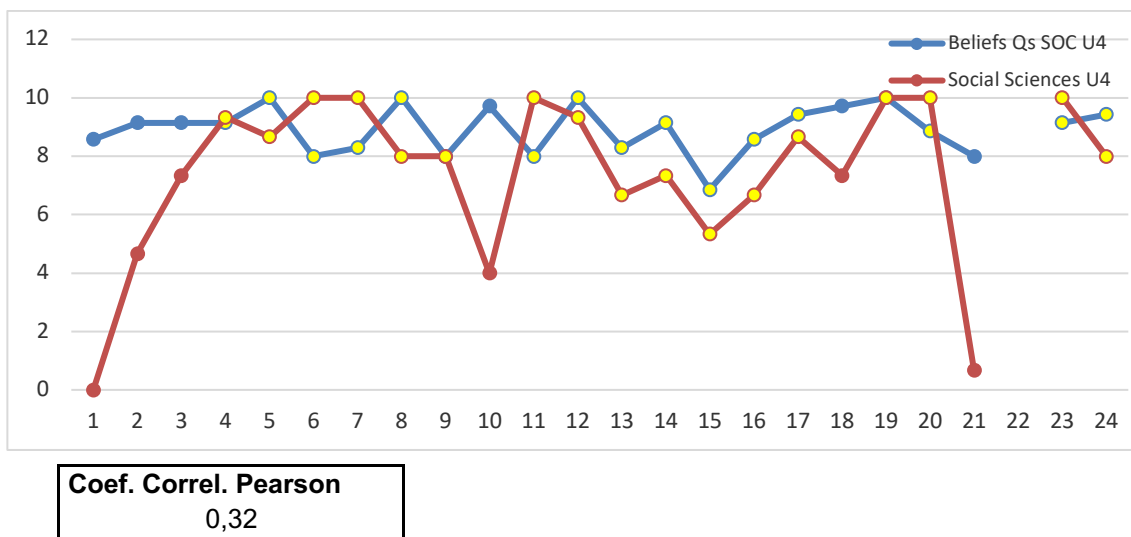
It is apparent from this chart that the gap between tests is short, which is a rather positive outcome. 96% of students in the experimental group believed in the NLP spelling strategy as an effective tool to learn Science vocabulary. At the same time, 75% of spelling tests were above the average score, with 57% of tests in the top performers range (see section 7.1.1, chart 28). Thus, only 21% of students were failing to match beliefs and performance in this unit. Although this may seem a high percentage, the control's group difference among tests was around 70% in the same unit. Furthermore, from the first to the second Social Science unit this term, the experimental group improved from a 58% to a 21% of difference in both tests. Thus, this can be considered as a great improvement in terms of students in the experimental group being able to assess themselves according to their actual performance in spelling tests.

Trying to find for possible explanations, I compared the two last Science units this term in the experimental group. Natural and Social Science unit 4, were conducted at the end of the second term, one after the other. Results in both, beliefs and spelling tests were quite similar. Hence, it seems that students in the experimental group were beginning to master the steps of the new NLP spelling strategy after the first month of practice. As a result, their spelling tests were getting higher scores.

Nevertheless, students' beliefs in all units were always above 90% regardless the results in spelling tests. These positive beliefs are likely to be related to motivation towards an activity carried out in pairs or small groups. In addition to this, the NLP spelling strategy required students to be in control of their own learning choosing words from a list to practice in no particular order. Furthermore, at the end of the term, 100% of students considered the NLP spelling strategy as fun and interesting. This may indicate that, even though it was challenging for some of them, this challenge made them overcome their difficulties and become successful spellers to a wide majority of students.

A detailed account of the correlation between tests for all students in the experimental group for Social Science unit 4 is described in the Pearson correlation coefficient applied in the following figure.

Figure 20: Experimental group Social Science Unit 4 Pearson's Correlation



This figure reveals that the experimental group shows a moderate degree of correlation index of 0,32. Overall, the experimental group maintained a similar degree of correlation in Natural Science unit 4 and both Social Science units. This is a significant result as it indicates the proximity between results and beliefs in most units for the experimental group this term.

Taking into account the +/-20% of tolerable difference between results, we can also observe how 17 students (signalled in yellow) succeeded to match beliefs to performance in spelling tests. In spite of the fact that S6, S7, S11, S20 and S23 showed a better result in the beliefs test, when examining their particular answers in the test, they all were answering positively with 4 or 5 points to each statement. Thus, they were

validating the NLP spelling strategy with the most points and achieving exceeding scores in the spelling tests.

From the students that do not present correlation, S1 and S21 results strike from all other students due to their negative scores in the spelling test⁸⁹. However, these are students that have maintained their scores to 0 in most spelling tests. As already mentioned in previous analysis, these students may have felt that answering the beliefs test with the highest scores was the right thing to do in those cases. Therefore, they failed to assess the strategy or their ability to perform spellings thanks to the NLP spelling strategy.

In general terms, all students validate the NLP spelling strategy with above 8 points, which is a very successful rate. Nevertheless, S15 beliefs were lower than the rest of the group's opinions. Interestingly, this student had already shown low results in the beliefs tests in Social Science unit 2 (see chapter 6, figure 12). As already mentioned, she was a student that loathed being taught in English to the point of having her parents thinking about changing schools for her. She claimed to have difficulties with spelling in particular and the foreign language in general. Furthermore, she was a very self-conscious student. However, she was not as hopeless as she thought she was with the foreign language. She kept her scores on average, did not fail any subject and passed almost all spelling tests. In this case, she answered positively to most statements except for two. She answered "no" to the NLP spelling strategy being simple and easy (statement 5) and the confidence this gave her with the language (statement 7). In my opinion, she was overwhelmed by this activity that was explained and carried out in English. Furthermore, she was asked to use English to work with her peers with some language support at hand. In general terms, it can be claimed that shy students sometimes have a really hard time in the foreign language class. Not only were they required to participate but also, they used a language out of their control zone which indeed is an additional challenge.

On the whole, only four students failed to pass the spelling test (S1, S2, S10 and S21) in this Social Science unit. This, and the fact that most students were able to bring beliefs and spelling performance together makes this a very positive outcome at the end of the second term.

⁸⁹ As already mentioned, S1 was a student that was being diagnosed with severe dyslexia at the time of the study. S21 was a student at social risk of social exclusion. Even if he was being diagnosed of a learning difficulty, he was considered as a ADHD student. Furthermore, both had learning support in Spanish language and Maths due to their literacy troubles.

7.1.6. Second term: Summary of Social Science Beliefs tests

Beliefs in the Social Science units examined this term were very positive regardless the spelling strategy used. Overall, students in both groups have a percentage greater than 90% in the beliefs tests, except the control group at the beginning of the term with 83% in the first Natural Science unit. The standard finding was to identify always higher positive beliefs than performance except in very few individual cases that have been addressed in particular. Thus, it continued the trend noted in the first term and the beliefs tests done before the Natural Science units this term.

One unanticipated finding was that at the end of the term, in Social Science unit 4, the control group changed his mind in a very specific statement. Almost half of the control group indicated to be uncertain or negative about copying words as a fun and interesting activity. It was discussed that this result might have been explained by the fact that students were getting tired of an activity that it was considered a chore or an everyday burden. Consequently, changing the trend of highly positive answers to one more related to their low performance in the spelling tests.

It could be observed how the difference between beliefs and performance was always shorter in the experimental group when results in the spelling tests were triangulated with beliefs. Hence, it is possible that students in the experimental group began to be able to assess their spelling ability in the right direction to performance. Furthermore, the experimental group had better results in spelling tests in all units which could be understood as a more positive attitude towards spelling and more effectiveness of the NLP spelling strategy.

When the Pearson correlation index was calculated, it could be observed how the experimental group showed a moderate correlation whilst the control group degree of correlation continued to be low in both Social Science units. Additionally, it could be noted how the number of students whose beliefs and performance were closer was always higher in the experimental group when having a look at some particular students.

In brief, it could be argued that beliefs and performance are not always related. The maturity of students and other circumstantial aspects related to their contexts and personalities may have an impact on what they believe or what they say they believe. In addition, the way a particular spelling strategy is worked (individually, in pairs or groups) also have an impact in students thinking whether it is effective or not depending on their personalities and what they enjoy doing. Furthermore, shy or self-conscious students may

answer differently to please others when they are compared to more self-assured students who seem to give a more honest opinion.

In spite of this, all students, regardless the group, tried to stay positive and motivated towards the spelling strategies and activities presented. However, right at the end of the study, the control group begins to change opinions in very specific statements that may indicate their hesitation towards copying words as an effective spelling strategy. Meanwhile, the experimental group answers in the beliefs test improve from the first to the second Social Science unit this term as a possible sign of enjoyment and motivation.

Having examined all spelling tests and beliefs in this term, the next section deals with learning styles and the role they have in the ability to produce spellings. Hence, I will re-examine the results in the Learning Channel Preference Checklist (LCPC) revised in the previous chapter (see section 6.2.7) and will triangulate students' results in spelling tests to find potential relationship between them.

7.1.7. Second term: Learning Channel Preference Checklist results

In this section, I will present the results in the Learning Channel Preference Checklist test (LCPC, henceforth) carried out at the end of the first term, in December 2019. This test was adapted from O'Brien's Learning Channel Preference Checklist (1990) (see chapter 4, section 4.4.2). As previously indicated, this test contained a set of 36 statements presented in three columns with 12 statements for visual, auditory and kinaesthetic representational systems or learning styles. Due to the optionality of the test, only 21 students in each group formed part in this section (see chapter 6, section 6.2.7).

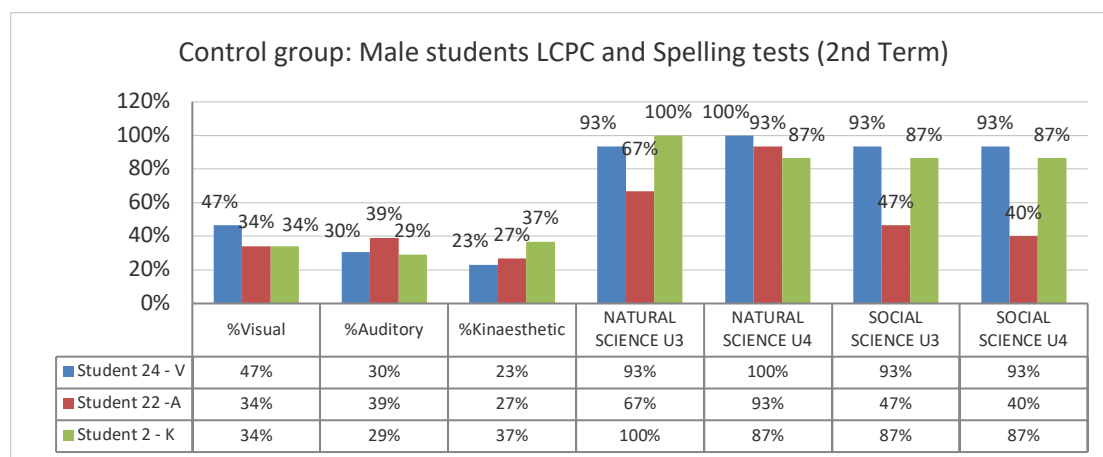
First, I studied both group's results in an attempt to find the most preferred channel of preference or learning style (see chapter 6, section 6.2.7.1). As discussed in the previous chapter, around 60% in both groups preferred visual learning. Auditory learners doubled in the experimental group with almost 40% of students, and kinaesthetic learners were around 14% in the control group and 5% in the experimental group. As a result, both groups' most preferred learning style was visual, with a similar proportion, followed by auditory and kinaesthetic learning styles (for further comments see chapter 6, chart 18).

Having analysed both groups as a whole, a small sample of 3 males and 3 females in each group were studied on the basis of the degree of each learning style. In further

detail, results obtained by these students in spelling tests were triangulated to each student with a particular learning style of preference during the first term in both groups (see chapter 6, charts 19 to 22).

In the following lines, the particular male and female cases in each group will be studied considering the results obtained in the LCPC and results of the spelling tests during the second term. With regard to students in the control group, the chart below presents LCPC and spelling tests results performed in the second term (Natural and Social Science units 3 and 4).

Chart 34: Male students LCPC results and Spelling tests results (control group, 2nd Term)



As illustrated in the chart above, S24 was the strongest visual learner, S22 was the strongest auditory and S2 was the strongest kinaesthetic (for further comments on these results see chapter 6, chart 19).

Seemingly, we can observe that the male student with the best scores in all tests this term was S24, the visual student, with 93% of success in 3 of the units and 100% in the second unit of Natural Science unit (third unit in the term). His results were followed by S2, the kinaesthetic student, with 100% of success at the beginning of the term and a stable 87% the rest of the term. Finally, the student with worse results was S22, the auditory student. He obtained 67% in the first Natural Science unit and a promising 93% of success in the second Natural Science unit this term. Nevertheless, he failed to pass the spelling tests of Social Science with 40% and 47% of success in both units this term. As a result, the best male speller in the control group was the visual, followed by the kinaesthetic and auditory respectively.

When comparing these results with the same results in the first term, we could observe that the kinaesthetic student was the best speller followed by the visual student and the student with the worst results was the auditory (see chapter 6, chart 19). In consequence, results were reversed this second term, albeit the auditory student remained to be the weakest of them all. As already noted in the previous chapter, S2 was the strongest student in terms of grades in CLIL subjects followed by S24, the visual student, and S22 the auditory student. Therefore, it was concluded that when it comes to spelling, students' capacities and abilities towards the foreign language was potentially a more remarkable asset than learning styles.

Differences between the visual and the kinaesthetic students this term may have been influenced by motivation. As it has been already been pointed out, S2 (kinaesthetic student) was feeling bored and unmotivated towards copying words for spelling practice (see results for Natural and Social Science unit 4 this term, figures 15 and 19). S2 was indicating an average of beliefs below 7 to 5 points at the end of the second term (Natural and Social Science unit 4), albeit obtaining a spelling test average close to 90%. Thus, his opinions about copying words for spelling practice were a lot lower than his actual results in the spelling tests what could be a clear sign of discouragement. For that reason, it is not surprising that he worsened scores in the spelling tests when they are compared to his own results in the first term or the results of the visual student this term.

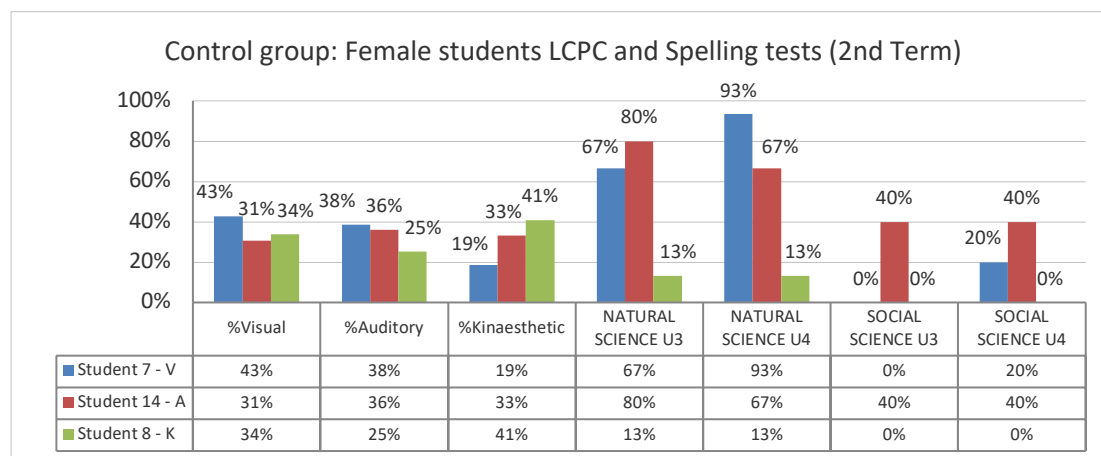
Concerning the visual student, he was able to roughly match spelling performance and beliefs in the first unit of the second term (Natural Science unit 3) and got better scores in the spelling tests than the actual scores in the beliefs tests the rest of the term. However, he was always keeping beliefs above 9 points of average, and thus, it can be considered that he was highly motivated towards the activity. Furthermore, when his results are compared to his results during the first term, it can be observed how they improve in all units.

As for results for the auditory student, he was the student with the worst results in spelling tests in both terms. By the same token, he was also the student with the lowest grades in this sample despite his fair grades in all CLIL subjects. Added to that, he always indicated high positive beliefs towards copying words for spelling practice regardless his results in spelling tests. Thus, it could be argued that auditory students get the worst results in a spelling dictation after copying words for spelling practice, even so their motivation towards an activity.

Motivation plays an important role when it comes to improving grades. Due to this, students can slightly raise scores that were already fair. However, auditory students seem to have difficulties to get good results in spelling tests after copying words for spelling practice even if they seem to be motivated towards this specific spelling strategy. As a consequence, it seems that the first argument of students with the best grades in CLIL subjects being more able or capable in the foreign language in general, and spelling in particular, is more feasible.

With respect to female students in the control group, it seems important to remember that the strongest auditory learners in this group were two dyslexic students and a third student that was pendant of pedagogical intervention. By virtue of this, the fourth female whose preference was auditory was selected (for further comments on this see chapter 6, section 6.2.7.1). The segmentation of results in LCPC tests and spelling tests in the second term for female students in the control group are shown in the following chart.

Chart 35: Female students LCPC results and Spelling tests results (control, 2nd Term)



As pictured in the chart above, S7 was the strongest visual learner, S14 was the strongest auditory and S8 was the strongest kinaesthetic. The most balanced student was S14, the auditory student, with all scores around 30% (for further comments on these results see chapter 6, chart 20).

The results of the female students in the control group are considerably lower than the male students in this group, with most spelling tests below the average score. It is difficult to choose the best student since all of them failed to pass the spelling tests in Social Science. However, when calculating the average of the four tests taken this term, the fact that S14, the auditory student, has not got any spelling test with 0 points makes

her the best student. She had good spelling results at the beginning of the term in the first Natural Science unit with 80% of success and in the middle of the term, also in Natural Science, with 67% of success. However, she failed to pass both Social Science units with 40% of success rate.

The second best performance comes with the visual student (S7) with 67% of success in the first Natural Science unit and a promising 93% of success in the second Natural Science unit this term. Nevertheless, she did not get any word correct in the first Social Science unit and only got 20% of success in the second Social Science unit this term. Finally, the worst performance comes from the kinaesthetic student (S8) that failed all tests with 13% of success in the Natural Science units and 0% in the Social Science units this term.

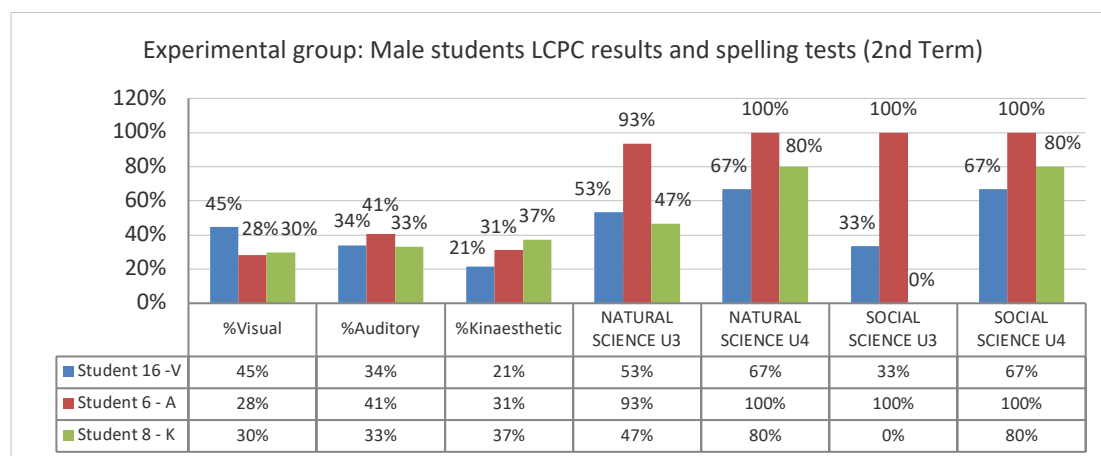
In an attempt to find more insights about their results, I analysed these students' answers in the beliefs tests this term. However, their beliefs were always above the average level regardless their results in spelling tests. S14, the auditory student, always had positive beliefs above 9 points in all units even if she did not pass any of the Social Science spelling tests. S7, the visual student, had higher positive beliefs in Natural Science to the point of matching beliefs and performance in the second Natural Science unit this term. However, her beliefs lower to a still high average of 7 points although her tests were below 20% of success. As for the kinaesthetic student (S8) with all spelling tests at 0 or close to 0, her beliefs were at an average of 7 points in all units. Thus, the visual and kinaesthetic students did have lower beliefs in Social Science. Nevertheless, their results in the beliefs tests were still far away from the reality of their performance in the spelling tests. As a consequence, it is a source of uncertainty whether students felt motivated to copy words for spelling practice or they simply answered to meet teacher's expectations.

The inconsistency in the results may have been influenced by the individualities in each student. When it comes to personalities, the visual student (S7) was very shy and self-conscious but a hard-working student. The kinaesthetic student (S8) was more confident but did not like English very much and had trouble keeping up with work. In fact, she failed to comply with spelling work often. Thus, her poor results in the spelling tests were not surprising at all. As for the auditory student (S14), she was very confident and enjoyed the foreign language lessons. Hence, it seems very likely that personalities played an important role in their grades and their spelling achievements.

This second term, the auditory student (S14) had the best scores in spelling tests, followed by the visual (S7) and kinaesthetic (S8) students respectively. When these results were compared to results obtained in the first term, they were very similar. Not only the auditory student did get the best scores but also, she was the student with the highest grades in CLIL subjects. Also, the second best female performer was the visual student and the student with the worst results was the kinaesthetic. Consequently, results in both terms show a similar pattern for all students examined in the control group.

Moving on to results in the experimental group, I will first analyse results of male students in this group followed to the same results in female students. The next chart illustrates the results of the LCPC tests and spelling tests for male students in the second term.

Chart 36: Male students LCPC results and Spelling tests results (experimental group)



This chart presents the summary of statistics of LCPC tests and spelling tests results in the second term for the experimental group. As indicated, S16 was the strongest visual student, S6 was the strongest auditory student and S8 was the strongest kinaesthetic student. As already mentioned in the previous chapter, S8 was the only kinaesthetic student in the experimental group as well as the most balanced student from the sample (see chapter 6, chart 21).

Closer inspection of the table shows that the auditory student (S6), got the best results in spelling tests. All the rest of the Natural and Social Science units have 100% of success with the exception of the first Natural Science unit this term with 93% of success. The second best speller was the visual student although his results were a lot lower than

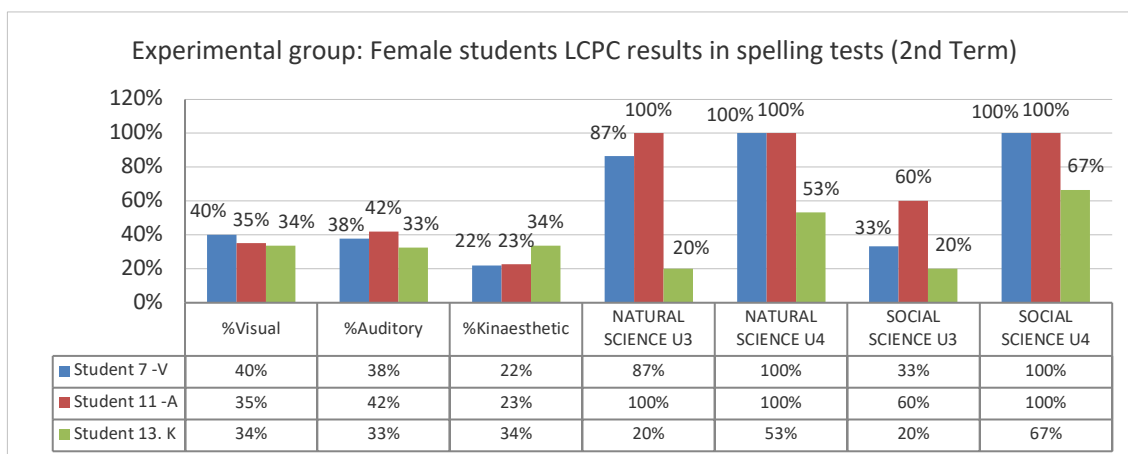
the auditory student in this group. His first Natural Science test was within the risk zone with 54% of success and his second Natural Science spelling test got a 67% of success. He failed to pass the first Social Science test with 33% of success but improved results in the last spelling test of the term with 67% of success in the second Social Science unit.

Finally, the worst performer was the kinaesthetic student (S8). It is important to bear in mind that he missed one spelling test in Social Science unit 3 and thus, his score is 0% even if he never got to do the test (see chapter 7, section 7.1.1 and section 7.1.2). Added to that, he failed the first Natural Science with 47% of success in unit. However, he significantly improved results in the second half of the term with 80% of success in the second Natural and Social Science units this term. In an effort to find possible explanations I checked his results in the beliefs tests this term. They all had high scores above 8 points. His answers were always around 4 points although once he was uncertain of the NLP spelling strategy giving him confidence with the language. He matched beliefs and performance in the second Natural Science unit this term and got close enough in the last Social Science unit this term when the $\pm 20\%$ of tolerance between scores was applied. Thus, he seemed motivated and was able to perform according to his beliefs at least half of the term.

When these results were compared to the results obtained in the first term, several similarities could be found. The best speller was the auditory followed by the visual and kinaesthetic student respectively. The auditory (S6) and the kinaesthetic student (S16) in this group got similar grades in foreign language subjects across the year. However, the student with the best grades in the foreign language subjects was the kinaesthetic (S8). The fact that S8 missed one spelling test and his score remained at 0 points, may seem a step back for this student. Nevertheless, even if he had obtained 100% of success in the spelling test he was unable to complete this term (Social Science unit 4), his results would not be as high as the auditory student this term (S6). Thus, the prior suggestion of the students with the best grades obtaining the best spelling results cannot be sustained in this case.

Concerning results of the females in the experimental group, the next chart depicts the results of the LCPC and spelling tests obtained in the second term.

Chart 37: Female students LCPC results and Spelling tests results (experimental group)



From the chart above it can be seen that S7 was the strongest visual learner, S11 was the strongest auditory learner and S13 was the strongest kinaesthetic learner since there were no female kinaesthetic students in this group (see chapter 6, chart 22 for further information about these results).

Regarding spelling tests, it can be observed the best speller was the auditory student (S11). She had 100% of success in all tests except from Social Science unit 3 that she passes with 60% of success. Bearing in mind that Social Science unit 3 was highly challenging for most students with over 60% of students failing this test (see this chapter, chart 27), it can be considered a positive score. The second best speller was the visual student (S7). She obtained 87% of success at the beginning of the term in the first Natural Science unit but failed the first Social Science unit with 33% of success. However, she significantly improved results to 100% of success in both Natural and Social Science unit 4 the second half of the term. Finally, the student with the worst spelling results was the kinaesthetic student (S13). She failed to pass both tests at the beginning of the term with only 20% of success in Natural and Social Science unit 3. Nevertheless, she improved results in the last two units this term with 53% of success in Natural Science unit 4 and 67% in Social Science unit 4.

Similarly, in the first term, the auditory student (S11) was the best speller followed by the visual (S7) and kinaesthetic student (S13). As suggested above, the student with the best grades in foreign language subjects was the student who obtained the best spelling results (S11). Similarly, the student with the worst grades was the student with the poorest spelling results (S13). This is a finding that tends to be constant in both terms, albeit in the males' case of the experimental group this cannot be sustained. Given that the sample

size was limited, it could be argued that the hypothesis of students who get the best grades in CLIL or foreign language subjects would need a further number of participants to be proven in this case.

In a bid to find relationships between beliefs and spelling scores the individual answers in the beliefs tests were analysed. The auditory student (S11) was also the student who always got beliefs and performance in consonance with no more than 2 points difference between them this second term. In fact, this finding goes in line with those found when analysing the beliefs tests in relation to performance. The more mature the students, the better alignment between beliefs and performance.

The visual learner (S7) also related beliefs and performance in all tests except from the first unit of Social Science that she had much higher beliefs than performance in the spelling test. As for the kinaesthetic student (S13) she kept an average of 8 points in the beliefs tests regardless her scores in spelling tests. Hence, the student with the best grades in foreign language subjects and more mature of them all was the student who got to assess herself accurately (S11, auditory). On the other hand, the student with most difficulties in spelling tests and foreign language subjects in general was the student who always answered positively the beliefs tests but only passed half of them this term (S13, kinaesthetic). This brings again the question of motivation and personalities playing part in results of spelling tests.

Concerning personalities, the auditory student (S11) was a mature student who always kept up with work. She was a hard-working and highly motivated student. Added to that, she said that English was her favourite subject at school (note taken in the first term, December 2019). S7, the visual student was very shy and it was really hard for her to participate in class as an active student. Nevertheless, she was also a hard working student that tried to cope with these difficulties by studying a lot and complying with all the tasks that were carried out. The kinaesthetic student, S13, was a very shy student and a little apathetic. She did have some difficulties with the foreign language, but she also had some uninterested vibe towards the tasks carried out in class. It is possible, therefore, that students that are more driven to effort and motivated towards a specific task or subject get better results than students who do not show the same qualities.

7.1.8. Second term: Summary of results in the Learning Channel Preference Checklist and spelling tests

In summary, male students in the control group obtained better results than female students within the same group. In the male students' case in the control group, the visual student got the best spelling scores in the second term. In the first term, results were similar, only that the kinaesthetic male was stronger than the visual student. As a consequence, answers in their beliefs tests were analysed in order to find possible explanations. Given that the male kinaesthetic student was the strongest of them all in CLIL subjects, it could be said that his lack of motivation towards copying words for spelling practice made him worsen results in the second term.

In the female's case in the control group, the auditory student got the best spelling scores. She was also the best spelling performer in the first term and also the student with the best CLIL grades of all three students examined in this section. She was followed by the visual student that even if she was a hard-working student, she was very shy and reserved what caused her to lay behind in the foreign language class. The student with worst results in both terms was the kinaesthetic student that worsened results from the first to the second term.

Regarding male students in the experimental group, the auditory student got the best spelling results followed by the visual and kinaesthetic students respectively. Results were very similar in the first term too. The student with the best foreign language subject's grades was the kinaesthetic student in both grades. Despite this, he was also the student with the worst spelling results both terms. In the first term it was argued that kinaesthetic students might have higher levels of proficiency in the EFL class. However, the limited sample in this study could not give a conclusion about this. In both terms, the kinaesthetic student had the best grades in foreign language subjects and the worst spelling scores. This inconsistency may be due to motivation. In an attempt to find this lack of motivation, his answers in the beliefs tests were studied in depth but there were no hints for this scarcity of motivation. Therefore, the hypothesis of students with the best grades having the best spelling scores could not be resolved.

Concerning female students in the experimental group, in general, they get better results than male students within the same group. As shown above, the best speller was the auditory student followed by the visual and kinaesthetic student respectively. Results in the first term were again very similar. In addition to this, the best speller was also the

student with the best grades in foreign language subjects. Given that this was a constant throughout the first term, it was argued that auditory and visual students have an advantage towards good spelling (see chapter 6, chart 21).

Considering that auditory and visual students, with the exception of male students in the control group, tend to get better scores this second term we can infer that they may have an advantage towards good spelling.

All things considered, several hypotheses were identified and could not be proven due to the limited sample of the study in both terms. In general, it seems that auditory and visual learners may have an advantage towards spelling. However, this is not the case in all the results analysed in both terms since the male kinaesthetic student in the control group had quite a good performance in spelling tests. Due to the inconsistency between the results throughout the two terms, it could be suggested that learning styles have little to do with spelling performance.

There are, however, other possible explanations for students to be good at spelling. In the first place, those students with better grades in CLIL subjects seem to perform best in spelling tests. Although there was one case that did not follow this sequence in the experimental group, the rest of the students analysed in both terms follow this trend. Hence, it could be said that their abilities and capabilities with the foreign language play an important role when it comes to spelling performance.

Second, their motivation towards the new language and the learning strategies used in class makes them like and dislike activities as well as improve or worsen results. Accordingly, strong students that tend to have fair and good grades in subjects taught in the foreign language may drop some scores in spelling tests. This could be proven in the kinaesthetic (male) student in the control group thanks to his honesty in the beliefs test. Notwithstanding, the same could not be proven for the kinaesthetic (male) student in the experimental group since his answers in the beliefs tests were always high in score. In any case, when students are driven to effort and motivated they seem to get better results than other students lacking from these qualities.

Finally, students' personalities seem to play their part so students can make the most of their inner abilities with the foreign language. That being said, shy and timid students appear to have more trouble with the language and also, try to hide what they really think in the beliefs tests so they answer what it looks good to answer and to be what they believe is a good student.

The next part of this chapter moves on to describing the experimental evidence of the qualitative analysis of peer and self-assessment questionnaires. These were done by students whilst the development of the spelling strategies carried out in class. Furthermore, additional notes and comments made by students, language assistants and myself will be outlined in a bid to find reasonable justification for the results obtained.

7.1.9. Second term: Other questionnaires: what students say about performance; self and peer assessment questionnaires, comments and letters to the teacher

In the next section, I will describe the principal findings of both self and peer assessment questionnaires. Furthermore, I will mention the most relevant comments done by students in the diverse handouts provided while carrying out the spelling activities in class, copying words for the control group and NLP spelling strategy in the experimental group. Added to that, I will analyse the notes taken by language assistants and myself in the observation rubric and research journal.

Peer and self-assessment were introduced to students on a regular basis. This was a space for students to reflect about their own learning with room to make comments about the activities presented in class, as well as their achievements or difficulties whilst performing them. In a similar fashion, students were presented with a handout named letters to the teacher where they had freedom to express themselves openly in any matter that concerned school life. Moreover, language assistants and myself took notes during the lessons in the observation rubrics and research journal. Due to the great number of comments and notes taken during the study, only the principal notes or findings will be considered.

In a bid to examine the most pertinent data, all outcomes gathered from these questionnaires will be examined as additional information to corroborate or invalidate ideas already presented in this study. Self and peer assessment will be outlined as quantitative data whilst considering qualitative information gathered from the “two stars and a wish” feedback included in this questionnaire. Furthermore, comments made by students in the “letters to the teacher” handout provided at the beginning of the term and voluntarily posted by students at other times in the term will be reviewed. Additionally, observations made by language assistants and myself will be also taken into account as qualitative data.

A note of caution is due here since the sudden close of schools the 11th of March 2020 due to COVID-19 lockdown in Madrid made impossible to gather this kind of information about Social Science unit 4, the last CLIL unit this term. As a result, I was unable to conduct the self and peer assessment for this unit or provide students with the “letters to the teacher” handout at the end of the term in favour of performing beliefs and spelling tests before lockdown. Thus, in the following lines I will delve into all handouts completed by students this second term.

7.1.9.1. Letters to the teacher

As already mentioned, this handout was provided at the beginning of the second term and was available to students so they could post their letter whenever they wanted to make use of this individual space to communicate with their teacher. Concerning the letters written by students at the beginning of the term in both groups, the control group only handed around 10 letters whilst the experimental group handed 15 letters. Therefore, students with most handwriting difficulties, learning issues or concentration problems were not able to complete the task even if they were being supported by teacher and language assistants.

Added to that, only five letters were provided by students in the mailbox designated for this purpose during the term. All these letters were about some problems with other classmates that helped the teacher to help them solve some issues. Furthermore, students could not submit their letters at the end of the term due to the unexpected close of schools in March 2020. Hence, only the letters submitted at the beginning of the second term, in January 2020, will be examined.

At the beginning of the second term, students still had some difficulties with handwriting, but in general, they had considerably improved. Bearing in mind that only a few letters were submitted this was not a surprise. Alike the first term, students took half a lesson to write three to five lines. Only specific cases from students diagnosed with dyslexia or other language or social difficulties were almost illegible or never got the time to finish their writings⁹⁰. As a matter of fact, most students in the control group could not comply with this task since they had not finished the task that was assigned before

⁹⁰ As a reminder, it is necessary to highlight that students were required to write in Spanish so they could express themselves freely and openly without a language barrier to communicate their feelings (see chapter 4, section 4.4.4)

(copying words). As for the experimental group, all students were provided with the “letters to the teacher” handout at the same time but not all of them submitted it at the end of the lesson. As a result, students were asked to write this letter as part of their homework which led to just a couple of letters in each group that were submitted the following day. Not only was it difficult for students to write but also taking the time to reflect about their own learning seemed a challenge for most of them. Taking all this into account, it could be said that all students that submitted letters seemed motivated towards spelling practice regardless the strategy used.

Contrary to the first term, students did focus on spelling and the strategies used for practicing spelling rather than the things that they liked or disliked about foreign language lessons. Hence, this could be a sign of students being more mature with a more reflective approach towards spelling learning after a term of spelling practice and self-assessment questionnaires. This finding goes in line with Spiller (2012) who argues that giving students the opportunity to assess themselves regularly, provides them with more responsibility and independence that promotes students’ reflection and learning ownership. As a result, students were more focused on what they were being asked and were more able to concentrate on spelling learning when they were asked to do so.

Concerning the comments made by students in the control group, students wrote about how they liked learning new words and how copying words helped them to improve their handwriting (“*Me gusta y descubro palabras nuevas. También me ayuda a mejorar la letra*” S1, control group, 14th January 2020. Other student proceeds: “*Me gusta el spelling porque aprendo palabras nuevas por ejemplo sight y también porque aprendo nuevo vocabulario*” / “I like spelling because I learn new words like sight and also because I learn new vocabulary” S21, 14th January 2020). Some students also implied that copying words helped them easily remember the new vocabulary. For instance, S20 wrote the following comment “*cuando escribo se me queda en la cabeza casi todo*” / “*When I write most stays in my head*” (S20, 14th January 2020). One girl in the control group added that she had learnt a lot of vocabulary and she knew how to write them thanks to copying words (“*esta manera me gusta mucho, gracias Eva porque ahora sé muchas palabras en inglés y las sé escribir*” S9, 14th January 2020).

Interestingly, a couple of students that were highly motivated towards spelling wrote that they liked English very much (“*El spelling me gusta mucho porque es super divertido porque hay muchas palabras en inglés y el inglés me gusta mucho*” / “I like spelling very much because is a lot of fun because there are a lot of words in English and

I like English very much” S11, 14th of January 2020). Therefore, when students feel motivated towards the foreign language it seems like a key that unlocks potential blocks in learning. If students are interested in the language this promotes motivation towards the activities carried out in the foreign language. Thus, the opportunity for learning enhances. In this light, S11 was a student that tended to match beliefs and performance quite frequently. This was seen as a sign of maturity compared to other students who always believed that they were doing great but failing the spelling tests. This brings out the question of whether students who show interest and motivation towards the foreign language are also more mature to see the benefits that would offer to speak fluently another language.

S2, a strong student who tended to show higher spelling scores than beliefs towards copying words for spelling practice wrote the following: “*más palabras, más difíciles. Eva, me gusta muchísimo el spelling, menos tiempo, más trabajo y exámenes difíciles*”/ “more words, more difficult. Eva I like spelling very much, less time, more work and more difficult exams” (S2, control group, 14th January 2020). From his comments at the beginning of the second term, I could gather that he felt strong and that he enjoyed the lessons although he thought that they were too easy for him. He was also the kinaesthetic student selected in the control group and thus, this gave the opportunity to revise his results in depth. At other times of the term, we have seen how this student felt less motivated towards spelling answering that copying words did not help him become a better speller or that it was not fun neither interesting in the beliefs test (see chapter 7, figure 15). Despite this, his scores were always high, and it was concluded that copying words for strong students lacked from challenge and thus made them feel burnt out. In fact, when his comments at the beginning of the second term (after the first term of spelling practice by copying words) were compared to his answers in the beliefs tests, we could see how from initial motivation he demoralized throughout the term. A possible explanation to this is the fatigue of a simple and mechanical activity for a more able student and the lack of challenge that this activity entailed.

One surprising comment was made by S15 who suggested that copying words helped him to relax, stay calmed and it made him feel good (“*Eva cuando hago el spelling me relajo, estoy tranquilo y en paz y me siento bien*” / “Eva when I do spelling I relax, I am quiet and at peace and I feel good” 14th January 2020). He was not a particularly good student, but he got fair grades in all foreign language subjects. However, he failed to pass most spelling tests done throughout the study. He felt good whilst practicing his spelling

but this was not turning into good spelling. As a matter of fact, he tended to lay back and copy some words, but he needed the teacher push to continue carrying on with the tasks carried out in class.

Turning now to the most meaningful comments in the experimental group, the majority of students in this group noted that working with the NLP spelling strategy was fun but challenging and made them feel better students. For instance, S18 wrote the following: “*Me gusta mucho y es muy divertida y es un poco complicado pero escribo mucho en inglés y me gusta*” / “I like it very much and it is a lot of fun and a little bit complicated but I write a lot in English and I like it”, 15th January 2020). In a similar vein, S11 wrote “*Es un poco difícil pero me ayuda mucho*” (“It’s a little difficult but it helps me a lot” 15th January 2020). Added to that, S6 commented “*El spelling me ayuda porque me divierte. Me divierte porque aprendo palabras en inglés*” (“Spelling helps because it amuses me. It amuses me because I’m learning words in English”, 15th January 2020). Consequently, students view about the NLP spelling strategy were very positive even if it was considered a challenging task, it was also seen as a fun activity, even a game, rather than a chore.

By the same token, S5 argued that it was difficult to practice with the NLP spelling strategy with this specific comment: “*Ha sido un poco difícil mirar a otro lado de la clase y cerrar los ojos y las palabras han sido un poco difícil*” (“It was a little bit difficult to look to the other side of the class and close my eyes and the words were a little bit difficult”, 15th January 2020). Along with that, S17 indicated that even if he had had some difficulties, he was enjoying the activity because he was learning while playing “*Si me gusta aunque a veces lo hago regular. Si me ha funcionado con las letras. Me divierto aprendiendo jugando*” (I like it even if sometimes I’m not always right. It worked with the letters. I have fun learning by playing”, 15th January 2020). Hence, even if it came with a few challenges, NLP seemed like a fun activity for students.

Interestingly, S23 wrote a very honest comment: “*Me ha gustado mucho pero me ayudaba de una trampilla porque veía la pizarra, lo siento teacher*” (“I like it a lot but I cheated for help because I could see the board, I’m sorry, teacher” 15th January 2020). That probably means that this student found difficult to see the word in his mind. Hence, when he was required to close his eyes to see a certain word in his mind, he could not resist but look at the words written on the board. Even if the NLP spelling strategy was designed to train the brain to create a mental picture of the word in our minds, this student stayed in the first stages of the strategy at the beginning of the term. However, his spelling

scores were always above the average scores and mostly between successful and exceeding scores. Furthermore, he was a good student with fair grades in all subjects. On this account, it can be observed that students felt free to write their true feelings in the letter because it was a private space for students to share opinions, beliefs and thoughts about how they worked in class with their teacher.

On another note, S12 suggested that practicing spelling with NLP had turned her into a better student “*El spelling me ha llenado de alegría, es lo que mejor me ha ayudado a estudiar y me ha transformado en la mejor estudiante*” (“spelling has filled me with joy, it is the best study help and it has turned me into the best student” 15th January 2020). As a matter of fact, revising her scores throughout the study, she started with a poor score in the first unit of Natural Science in the first term and increased the amount of well written words to successful and exceeding scores the rest of the study. Consequently, her comments in this letter were a clear example of the NLP spelling strategy making her feel a good speller and actually becoming one.

Other students realized that they were better spellers than they thought in the first place. For example, S3 and S4 wrote similar comments “*Esta estrategia me ha ayudado un poquito aunque estoy más bien de lo que pensaba*” (this strategy has helped me a little bit although I am better than I thought I was”, 15th January 2020). The fact that both students wrote a similar comment made me look for hints to find a reason. They shared the table and thus, they had probably been commenting on what to write together. Therefore, some students were able to reflect about their own learning with other peers before putting it in writing. This is an example of students being able to reflect about their own learning which leads to deeper learning.

Finally, I would like to highlight two comments written by students of diverse difficulties. S1 was diagnosed with severe dyslexia and wrote the following: “*El spelling es el mejor regalo. Me gusta hacer las palabras y las estoy mejorando mucho y me gustaría hacerlo todos los días porque me gusta*” (“Spelling is the best present. I like doing the words and I am improving a lot and I would like to do it everyday because I like it” 15th January 2020). Even if she enjoyed the activity, she was not able to pass any spelling test. As a matter of fact, she had not a single word correct in her spelling tests. However, she was very motivated to learn and enjoyed the activities carried out in class. As already mentioned, she was a student that was always looking for the teacher’s approval (see section 7.1.2, figures 14 and 16). She wanted to be a good student, but her learning difficulties would not help her to reach the desirable grades. Soon after these

comments she was eligible for learning support and could improve her skills in Spanish language. Support that their teachers believed was the beginning to improve her skills in the foreign language too. Due to COVID-19, the school closed a couple of months after this, and we could not see whether this support helped her become a better reader and writer.

On the whole, once more these letters proved to be a special place for students to reflect about their own learning. Despite the small number of letters submitted this term, some ideas could be gathered from students' writings. The first idea was that handwriting had considerably improved for some students. Other students did not have the time to submit the letter on the day it was required and failed to submit it the following day as it was an optional homework activity. This was either due to learning or handwriting difficulties as well as having trouble reflecting about their own learning.

On the one hand, some control group students felt that copying words was helping them to retain new words and felt motivated towards the activity. However, other students were claiming for more challenge that was not provided for the control group. On the other hand, students in the experimental group felt that the NLP spelling strategy was indeed a challenge. That is so, that some students chose to cheat with some steps until they felt prepared to take the next step of the strategy. In spite of this, the majority of students found the strategy fun and enjoyed the spelling activity. Some students in fact believed that practicing spelling with NLP was turning them into better spellers and students. Other students also took the time to assess themselves and realised that they were better spellers than they thought they were in the first place.

All in all, these letters were a space for students to reflect about their own learning in a safe place where they could express themselves openly and freely.

7.1.9.2. Observation rubrics and notes in the research journal

As already mentioned in the previous chapter, the research journal was a place for self-reflection about the implementation of the NLP spelling strategies and copying words for spelling practice in both groups of students. Once more, at the beginning of the second term I told students that I was writing a thesis dissertation and that all tests and questionnaires that we had been doing, and continue to be doing in the second term, would help me become a Doctor and hopefully work at university. Students felt very intrigued by this and we commented all that a student has to go through to become a university

teacher. They believed that teaching other teachers was a kind of superhero job what lead to a lot of laughs in class. They openly said that they wanted to help me achieve my dreams since I was there to help them reach theirs. Thanks to this comment I realised that when students get to know their teacher is easier for them to empathise with him/her and connect with activities. They also seemed motivated to help me achieve my goals and made them feel important that I was studying their achievements to help other children after them. It is important for learners to feel accountable and an important part of the lesson.

In the first week of the term, we went back to all procedures carried out in class (i.e., WALT and WILF posters, two stars and a wish feedback, pre and post spelling tests). After the second week of practice, I wrote on the journal that students were picking up the pace quite fast. This made me think that the time spent to go through and learn procedures during the first term was being paid off (note taken the 16th of January 2020). The same day I wrote that the experimental group believed that the NLP spelling strategy taught this term was easier and more fun than the previous one. This last note gave me a boost of energy since having students motivated was at the core of every lesson.

With respect to the notes taken in the first Social Science unit this term, there was an interesting note on pronunciation in the experimental group. Whilst we were doing the pre spelling test I dictated the word environment. One student asked me whether environment was written with a “b” or “v” by sounding out the pronunciation of both letters. I answered with a “v” sound and smiled. Again, the time spent in learning the sounds of the alphabet at the beginning of the school year was beginning to bear fruit (note taken the 29th of January 2020).

In addition to this and during this unit, I wrote several times that students were enjoying the strategy and helped each other in the experimental group. I also noted how most students seemed to spell words from memory and how they were starting to master the NLP spelling strategy learnt this term. However, I recorded how students in the control group took a lot of time to copy the words from the board. Some students needed additional help and required me or the language assistant to copy the words directly in their notebooks, so they did not lose focus when trying to copy words from the board. Some students in the control group were also chatty and tried to skip spelling work. (notes taken 3rd, 4th and 5th of February 2020). This is why students in the experimental group had better results in this unit since the attitude towards work was quite different to the one in the control group (to see results in the spelling tests for Social Science unit 3 see section 7.1.1, chart 27 in this chapter).

Regarding the notes taken during Natural Science unit 4, most of them had to do with students being focused and those who needed extra help to carry out the tasks in both groups. I also noted that students in the experimental group barely used English in class and that I had to make a change for this to happen. In order to do so, the following class, when sharing WALT and WILF posters I added that those students who were caught using English while practicing spelling could choose the words to practice the following day. As it had a very good welcome among students, I added that they could choose a song or activity to do at the end of the class several days (note taken 26th of February 2020). This seemed to help students trying to use English to communicate during the realization of tasks. However, I also noted how this was very difficult to apply in the control group since their spelling practice was individual work. Thus, I tried to offer the same opportunities for using English in other activities carried out in tasks (e.g., Plant project).

Unfortunately, Social Sciences unit 4 was carried out in a time of many changes in the school. We were informed that the school would close the 11th of March due to COVID 19 lockdown in Madrid. Therefore, I do not have relevant notes in this unit as I wanted to run all the possible tests to finish this study. I barely wrote the words to be studied and the pairs or small groups of work in the experimental group to practice the vocabulary in this unit in the research journal. I had to advance the final spelling test so at least I could have the most relevant results for this study before lockdown. Due to the lack of time, I could not perform the peer and self-assessment questionnaires in this unit and neither there was time for students to give feedback.

Concerning observation rubrics, they were handed to language assistants in the middle of the second term. That is to say for the spelling activities carried out during Social Science unit 3 (January/February 2020) and Natural Science Unit 4 (February 2020). As commented in the previous chapter, only data from the experimental group was recorded due to the nature of the spelling activities implemented (see chapter 6, section 6.2.8.2). The rubric contained seven statements with three comments to check exceeds, meets or below expectations and another column for comments (see appendix 9). I divided the group in pairs and one trio. I assigned some students to the language assistant and the rest of the group for myself to observe.

In Social Science unit 3, there were two moments of observation, one in the first week of practice and another one during the second week of practice. Alike in the first term, I noticed that the language assistant was stricter than I was assessing students. However, she was more benevolent than during the first term with more checks in the

meets expectations column. Perhaps this was due to the fact that she had the background of the first term and knew exactly what to look for and what was expected from students best this time. For her, most students exceeded expectations in “understands the strategy” and “listening and helping each other”. Only one pair of students did not understand the strategy and thus, they lost track and focus on the activity. I changed this pair the next session since they were both having troubles working with the strategy and I paired them with students that were very strong at using the NLP spelling strategy. For the rest of the students that I observed, all students that did not exceed expectations in these statements, met expectations which was an already very good outcome after three weeks of spelling practice with the new NLP spelling strategy. One more item that was always between meets and exceeds expectations was the “ability to spell words from memory” which was also a very positive result on account of the NLP spelling strategy.

Most of the checks in below expectations were given to “speak English most of the time during the task” statement. I tried to solve this by making clear the language they were required to use in the foreign language. Furthermore, I encouraged them to use the language by giving them the right to choose the words to practice from a bigger list or listen to a song at the end of the day. Most comments made by the language assistant and myself also referred to this. Whenever they had to explain something to their peers, they always did it in Spanish. However, the bright side about this was that students were willing to help each other and could explain to others how to proceed with the strategy. This, in some cases, resulted into other less able students not feeling the teachers’ pressure and learning with other classmates. I also noted that the trio was not working well together, and they were taking a lot of time to change from one word to the next. Given that we were two people monitoring the activity and that we only had half of the class to supervise, it was easier to identify who was having troubles working together or with the strategy. Thanks to this, I could make the necessary changes for the next session in order to try to solve some of the difficulties derived from the mechanics of the spelling task.

The notes during the second week of Social Science unit 3 vocabulary practice were similar. However, the changes in pairing students made all students except one pair exceed in “understands the strategy” statement. The pair that could not work it out this week was formed by two students with learning difficulties. They had been sat together since they were supposed to have some help from a student teacher. Nevertheless, he had to leave the class early and they ended up not working together and even doing their own thing at times. I noted that I caught S1 copying the words for spelling practice and her

partner S10 doodling in his notebook. I managed to change the girl to another group, but I was unable to help the boy since he would not want to move seats or collaborate with the teacher or other classmates (note taken the 6th of February 2020). I also noted that even when S1⁹¹ was lost and did not know what to do, instead of asking for help she was trying to copy the words since it was the only activity she could think off in order to stay on track with the class. Even if her results in spelling tests and foreign language subjects were always below the average scores, she always showed motivation and tried to stay focused (note taken 6th of February 2020). Admittedly, she was trying to cover with hard work all her difficulties which made me try to help her to my best of possibilities.

One statement that the majority of groups had in below expectations was again related to using the foreign language during the tasks. However, it could be noticed how around 4 pairs of students tried to use the language that they were required to use. Given that small changes had been recently adopted to enhance students using English in class this was an optimistic shift of results.

From all notes taken in this observation rubric, I could gather that students who have learning difficulties not only have to be paired with students that are more able but also, they have to be paired with students that enjoy helping others. On the one hand, they gain confidence and on the other they help others assimilate new learnings in depth. Furthermore, pairing two shy students was also a mistake. Even if they understood the strategy and one of them was stronger than the other with regard to learning, they would not cope with working with another student. Since they were both very shy, they avoid sharing ideas together and tried to work individually whenever they were not being observed. Consequently, a lot of factors intervened in the development of sessions. The different paces of work and personalities made me adapt the activities and make organizational changes along the way.

With regard to the observation rubric completed during the practice of the vocabulary of Natural Science unit 4, the first change was that I had two language assistants in this session, so they were in charge of filling this handout. I made sure that both assistants had the same number of students with special needs or disruptive students that could create trouble during the activity. Since I had extra help, I could sit next to students who needed additional help to put the NLP spelling strategy into practice. I also

⁹¹ This student was identified as dyslexic at the time. She was getting support from other teachers within her Spanish lessons.

tried to help to work as a team to those pairs or small groups that had difficulties working together. I noticed that one assistant was more rigid than the other and she assessed students with lower scores than the other. One of them was more used to working with young learners which made her more aware of the efforts students were doing to carry out the tasks. She was more often in my class and thus she knew all the small advances and improvements that students had done throughout the year. Thus, she was more positive in her comments about students' work.

Once more the statement about using English during the task was amongst the statements with most below expectations checks. I was still trying to improve this situation but certainly it was not an overnight situation. I noticed that wherever there was an uneasy, disruptive or special needs student there were checks below expectations in “understands the strategy” or the “listening and helping to each other” statement. It is not surprising that whenever these students were not having a good day or were not feeling like working the development of the lesson turned into a less positive environment. Due to the large number of students in this situation, I sometimes had to spend some time of the lesson trying to solve problems between them and I had to work with them as an active part of the group so they initiated the activity. In this lesson the assistants noted that some students were working slow, were arguing or simply they were not working together (notes taken the 26th of February 2020).

I also noted in my journal that it was an uneasy lesson and that students were being hard on each other. The fact that this lesson took place after the recess time and that it had been a rainy day may have had an impact on this. Students were tired and had not had the time to burn their energy outside. Furthermore, there had been some problems during recess in class. We had started the lesson later because we had taken some time of the lesson to help them solve these arguments. Clearly, this had an effect in the development of the next session. As a consequence, I arranged another day to practice the spelling this week so we could focus on improving spelling rather than helping them to work cooperatively.

The next session developed without major problems and students were able to practice the last words assigned to this unit (note taken the 27th of February 2020). Students also took the beliefs questionnaire this day and seemed to have enjoyed the activities. The following day the final spelling test took place and results were quite encouraging (see section 7.1.1, chart 26). Thus, even if I had noticed problems in working together, they had learnt most spellings. Therefore, the fact that we were regularly working on spelling

and using the key words in different contexts such as the plants project, that we were carrying out in Science and Arts time, was helping students retain these words in their memory. As a result, they significantly improved results in the tests even if there were difficult days in which nothing seems to work according to plan.

On the whole, most students were able to follow the steps of the new NLP spelling strategy. However, most students failed to use English as a means to communicate during the development of tasks. In addition, sometimes personal problems or characters made students do not profit from the time devoted to spelling. However, I tried to implement some new motivation for students to use English which seemed to start producing results in the most able students. The fact that these students were paired with less able students also helped them to try to utter some words in the foreign language. Even if there were records of an unfruitful spelling day, reality was that students in the experimental group were used to practice their spellings every week. Hence, even if they did not work properly one day this was not because they did not know what to do but other reasons that blocked their learning that particular day. Prove to that were the positive results in the spelling tests of Natural Science unit 4 (see section 7.1.1, chart 26).

7.1.9.3. Self and Peer Assessment questionnaires

During this term, I will analyse self and peer assessment questionnaires that were handed in the middle of the second term. As commented in previous chapters, students knew all goals and expectations in every lesson thanks to the WALT and WILF posters so they could learn to assess themselves properly at the end of a lesson or a unit (see chapter 4, sections 4.4.5 and 4.4.6). As a consequence, students would be more engaged in the activities and keener to participate in learning.

As already commented, these questionnaires contained 5 can do statements following a 5-point Likert scale of 5 points from the most positive to the most negative answer. Additionally, at the end of the questionnaire, students had a few lines for a “two stars and a wish” feedback (see chapter 4, section 4.4.6). The goal of this space to give informative feedback was to form a wider idea of the learning experiences students were undergoing. This feedback was required after every unit this term except for the last Social Science unit of the term that had to conclude all of a sudden before the close of schools due to COVID-19. As a consequence, the beliefs and spelling test had to be conducted before it was planned leaving no extra time for other questionnaires Therefore, two stars

and a wish feedback comments will be considered for all units this term except for Social Science unit 4.

After a week of spelling practice of Natural Science unit 3 vocabulary, students wrote the two stars and a wish feedback on the peer evaluation rubric in the experimental group. Most students gave themselves a star for being able to stay focus in task. However, most of them also argued that they needed to improve using English to communicate with classmates. Some of them also highlighted how they helped each other when there were doubts about the strategy's next step or a particular word. Others emphasize that they needed to improve their handwriting which has to do with all the notes taken in the research journal for this matter and commented in the previous section (see section 7.1.9.2). As I am not a believer of calligraphy, I gave them lined paper and a few hints to keep the letters in between lines. I noted that they liked the attention given by the teacher (note taken the 20th of January). Even if the lined paper did not work all the time, I could notice several improvements in many students.

The control group gave themselves a star for being quiet and focused when copying the words from the board. They also commented on the need to improve their handwriting for what I did the same exercise with the control group and the lined paper. One student (S11) wrote that he practised the words at home as well. This made me look into his spelling scores and I could see how his thorough practice had very good results with all tests between successful and exceeding scores. In addition, this student was always very close to match beliefs and spelling performance. Thus, he was quite devoted to the activity and really thought that copying words was helping him to improve his English. An example is that he wrote: "*Practico spelling todos los días de la semana en casa y en el cole. El spelling me ayuda a escribir bien las palabras y mejorar a escribir las palabras en inglés*" ("I practice spelling every day of the week at home and at school. Spelling helps me to write words properly and improves ability to write words in English" note taken 21st of January 2020). Other student (S13) goes on to add that he is very good at copying words and it makes him feel well (note taken the 21st of January 2020). This is an example of students feeling well and motivated towards this activity. Around 10 students noted that they got help at home and that they practiced the spelling with their parents. Consequently, I had a look at these students' grades and most of them passed the spelling test above the average score. This brings out the question of whether parents support in bilingual schools is necessary to success and achieve full competency in a foreign language.

As far as Peer and self-assessment questionnaires are concerned, the units that were conducted in the middle of the term (Social Science unit 3 and Natural Science unit 4) will be examined in depth. As noted in the previous chapter, the table below is a gentle reminder of the statements presented on each questionnaire for both groups.

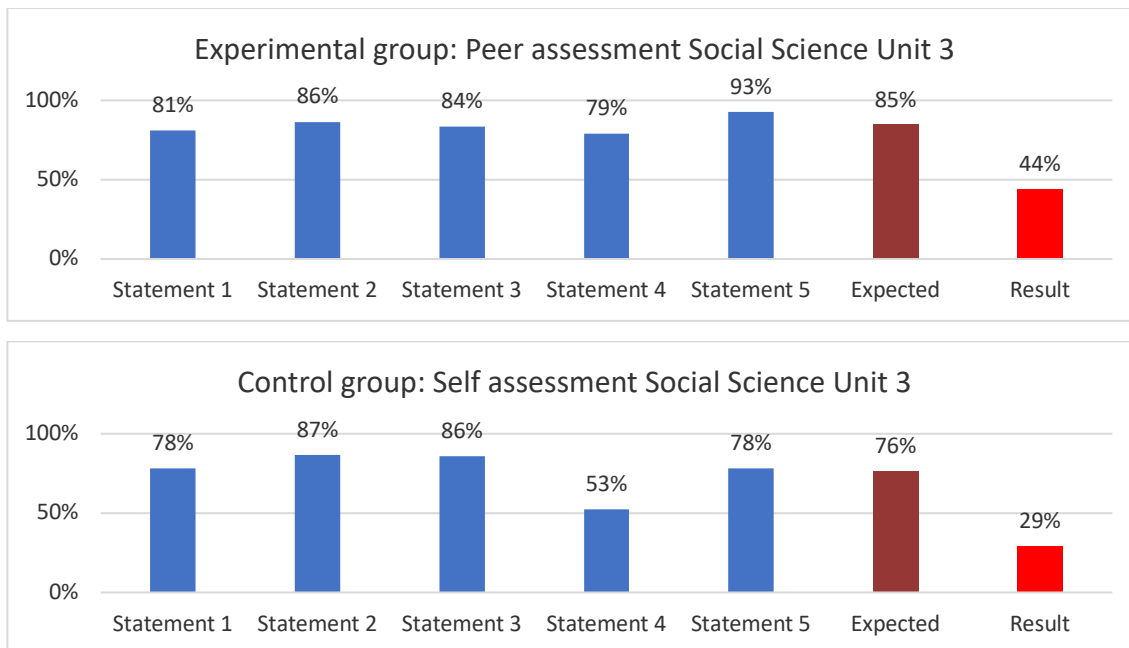
Table 19: Set of statements on self and peer assessment questionnaires:

	EXPERIMENTAL GROUP		CONTROL GROUP	
	SELF ASSESSMENT QUESTIONNAIRE	PEER ASSESSMENT QUESTIONNAIRE	SELF ASSESSMENT QUESTIONNAIRE	PEER ASSESSMENT QUESTIONNAIRE
STATEMENTS	1. From the list I practised, I can correctly spell...	1. From the list we practised, we can correctly spell...	1. From the list I practised, I can correctly spell...	1. From the list I practised, I can correctly spell...
	2. I can use the visual spelling strategy to spell words from Natural and Social Sciences in English	2. We can use the visual spelling strategy to spell words from Natural and Social Sciences in English	2. I can copy correctly words from Natural and Social Sciences in English	2. We can copy correctly words from Natural and Social Sciences in English
	3. I can stay focused and on task	3. We can stay focused and on task	3. I can stay focused and on task	3. We can stay focused and on task
	4. When I work with a partner I can speak English during the activity	4. When we work together we can speak English during the activity	4. When I work with a partner I can speak English during the activity	4. When we work together we can speak English during the activity
	5. I can write in English words that I could not write before	5. We can write in English words that I could not write before	5. I can write in English words that I could not write before	5. We can write in English words that I could not write before

In the interest of calculating the effectiveness of self and peer assessment, I studied the average of positive answers per statement. Doing that, I could have the breakdown of statements that were more significant to students. Added to that, the average group's result on the spelling tests were compared to the average responses of the students in the whole questionnaire. This allowed me to extract a comparative of the expected performance by students and their actual performance in spelling tests in the middle of the second term (see chapter 6 section 6.2.8.3).

The following chart illustrates the comparison between answers in the self and peer assessment questionnaires in both groups after practicing spelling with NLP in the experimental group and copying in the control group during Social Science unit 3.

Chart 38: Peer and self-assessment questionnaires Social Science Unit 3



In agreement with the above results, the students' expected result was above 80% in the experimental group and below the same rate in the control group. However, these results do not go in line with the results in the spelling tests where the average success rate is at a poor 29% in the control group and a 44% success rate in the experimental group. This is not surprising since, as previously commented, Social Science unit 3 was one of the less successful with regard to spelling. A possible explanation found for this was the lack of motivation towards this particular Science's topic (see section 7.1.1, chart 27). Therefore, students' attitudes towards spelling activities were a lot more positive than their results in spelling tests in the middle of the term.

With reference to the answers to the statements presented in the peer and self-assessment questionnaire, as it can be seen in the chart, there were no significant changes in the first three statements. Therefore, around 80% of students in both groups thought that they could spell a large number of words in the list given (statement 1). Close to 90% reported that they could use the NLP spelling strategy in the experimental group and could copy words correctly in the control group (statement 2). In addition, around 85% of students in both groups felt that they could stay focused and on tasks during the spelling activities (statement 3).

However, significant changes come with the fourth and fifth statement. Just below 80% of students in the experimental group reported that could use English during the activity whilst the percentage of students in the control group does is just above 50% for the same statement. This result may be explained by the fact that students in the

experimental group were required to work in pairs or small groups to practice spelling. Nonetheless, students in the control group were asked to do individual work to copy words for spelling practice. Thus, students in the control group did not have to communicate with others while they were practising their spellings. Even so, students in the control group, to a large extent, decided to answer positively to using English when they worked together.

This gave me an important insight. Students were not yet able to think about activities in a separate way but thought about them as a whole. In other words, if before or after complimenting this questionnaire they had been required to work with a classmate or small group, and English to communicate was requested in the task, they would answer positively to this statement. Even if the self or peer assessment was only referring to spelling activities, students were answering according to their abilities unless statements were specific to spelling (i.e., From the list we practised I can correctly spell...).

Concerning the fifth statement, students in the experimental group reported to a 93% that they could write in English words that they could not write before. Even if the control group had a high success rate in this statement, this did not reach 80%. Thus, around 15% more of students in the experimental group were feeling that they could write in English. Taking into account the poor result in the spelling tests, this finding is quite interesting. As mentioned in a previous section, over 75% of spelling tests in the control group and 59% in the experimental group were poor (see section 7.1.1, chart 27). Students in both groups had the same success rate in risk, successful and exceeding scores in spelling tests. However, average spelling tests were 25% in the experimental group and 9% in the control group. Thus, it was concluded that, even if the results were not significantly good, the experimental group got better results in this unit. Consequently, bearing in mind the results of the peer and self-assessment, we can observe how not only were students in the experimental group more positive about writing new words in English but also, they expected better results in the spelling test. Even if results were not as brilliant as expected from students' answers in this questionnaire, they were best in the experimental group.

Furthermore, two stars and a wish feedback in this unit was also very positive for students in the experimental group. All comments were very similar by positive feedback as well as wishes to continue improving. Interestingly, some students decided to write their comments in English. Even if they mixed the languages in some comments, I believe this is an encouraging change. For instance, a group of 3 students that had been assigned to work together wrote: "We can write in English we could not write before" (note taken

the 5th of February 2020). Other pair wrote: “we help each other” (note taken the 5th of February 2020). Even if they were almost copying some of the statements that they had to answer in the peer assessment questionnaire they were copying without spelling mistakes that was already a big change.

With regard to wishes, some students in the experimental group mentioned that they would like to be able to speak more English during the activities carried out in class or improve their handwriting. In view of this, I was taking action to help them improve these issues as their teacher.

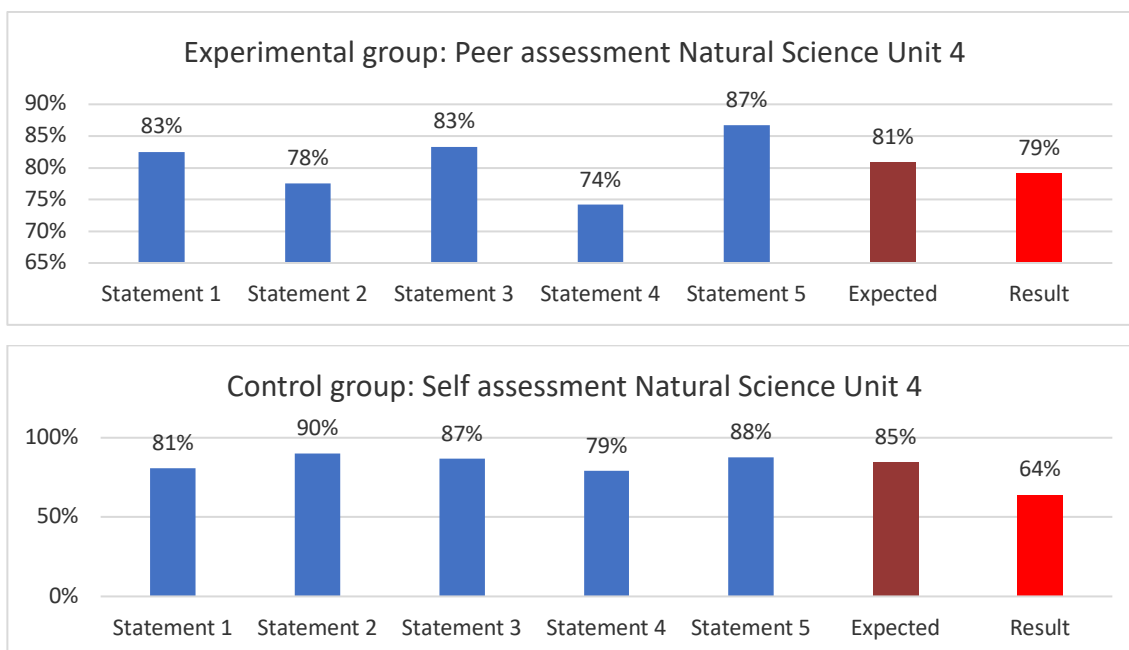
As for the comments made in the control group, the most interesting aspect is that most students did not take the time to write any comment about the spelling work. Only those students that worked faster or had less difficulties were the ones to write some comments. Alike in the first term, I noticed that students with learning difficulties failed to write any feedback due to the trouble that writing was for them. I had to engage in conversations for them to give me any feedback about the activities carried out in class. Even if I tried to use English, this conversation always ended in Spanish since they did not understand well what I was asking them about. Even if they did not give me any specific feedback about the activities, I thought that it was a good exercise for them to feel accountable. Most of the times they wanted to go unnoticed and even if it sometimes it made them feel nervous, I believe that at the end of the day it also made them feel acknowledged (note taken 6th of February 2020).

Interestingly, not a single student wrote their comments in English. As for the comments they made, they mostly reported that they were able to concentrate while copying words from the board. Added to that, some students mentioned how simple copying words was for them. One student reported that it bored him to copy words every day (“me aburro de hacer el spelling todos los días” S2, note taken 5th of February 2020). It is not surprising that this student’s beliefs towards copying words as a spelling strategy were also low (see section 7.1.5, figure 17). As a result, he also decreased his scores in spelling tests, albeit he was a quite strong student⁹².

⁹² S2 was studied in several occasions throughout this study. His results in the beliefs tests were widely commented in this chapter (see section 7.5.5, figure 17). Furthermore, he was selected as the kinaesthetic student in LCPC questionnaire sections (see chapter 6, section 6.2.7 and chapter 7, section 7.1.7).

As far as the peer and self-assessment questionnaire for Natural Science unit 4, due to the nature of the spelling activities, once more the experimental group filled the peer assessment questionnaire whilst the control group filled the self-assessment questionnaire. The next chart depicts the comparison of results in both groups.

Chart 39: Peer and Self- assessment questionnaires Natural Science unit 4



As can be seen from the chart above, there were important and relevant changes in this unit. What is striking about these results is that the experimental group's expected performance, with 81% of success rate, almost matched the actual average in their spelling tests of 79% success rate. This is a very positive finding since students were able to assess their efforts towards spelling practice and were able to perform in a similar way in spelling tests. On the other hand, the control group, even if it improved results from the previous unit, still had 85% of expected success in the spelling tests when only 64% of tests were actually successful. On that account, students in the experimental group were more capable of making an estimation of their spelling learnings and perform in consequence in spelling tests, whilst around 40% of students in the control group could not.

A closer examination of results shows the distribution of positive answers in these questionnaires. The first statement had very similar results. Just above 80% in both groups recorded that they were able to correctly spell a fair number of the words given. Concerning the second statement, 90% of students in the control group reported that they could copy words from Natural and Social Science in English. Ergo, the large majority of

students in this group did not find any difficulty implied. Nevertheless, around 40% of students were below the average score in the spelling tests (see section 7.1.1, chart 26). Consequently, their expectations in the self-assessment were a lot higher than what they were able to produce in tests. That is to say, copying words might have been easy for them but it was not helping them to achieve better spelling results.

The experimental group, on the other hand, was less certain and close to 80% of students were positive about being able to use the NLP spelling strategy to spell Science words (statement 2). Given that the complication of using the NLP spelling strategy at ease required more steps to follow and remember, and possibly more concentration, this is not a surprising finding. As a matter of fact, only 8% of students in the experimental group did not pass the spelling test in this unit even if not all students thought they could cope with the NLP spelling strategy (see section 7.1.1, chart 26). Therefore, comparison of the findings in the peer assessment questionnaires is in line with the earlier results provided in the spelling tests for the experimental group.

Regarding the third statement, 87% of students in the control group and 83% of students in the experimental group noted that they could stay focused and on task during the spelling practice. In this light, it is not surprising that the experimental group shows more uncertainty due to the nature of the spelling activities in this group. The NLP spelling strategy's practice required them to talk to others which probably made them be chattier with others making them lose track at times.

With reference to the use of English during the spelling activities (statement 4), 74% in the experimental group and 79% in the control group reported that they were able to use the foreign language in class. Once more, the control group was not required to use English since they had to work individually to copy the words required. Hence, they were probably referring to the other activities carried out in the CLIL classroom. Even if the experimental group assessed themselves quite positively, this finding is contrary to the notes taken in the research journal and observation rubrics that were commented above. The fact that they tried to use it for a couple of minutes might have made them answer positively to this statement since they were often being reminded to use the class language that had been introduced at the beginning of the lesson.

Finally, the results of the last statement concerning their confidence with the language, around 88% of students in both groups were certain about their ability to write words in English that they could not write before. Both groups of students improved their results from the second Science unit this term (Social Science unit 3) to the third Science

unit this term (Natural Science unit 4) (see section 7.1.1). Therefore, students' answers to this statement confirm that they believed that their abilities with spelling had been improved throughout the term. This may be a relevant finding since positive beliefs towards spelling may be a source of motivation towards the foreign language learning and CLIL lessons regardless their actual scores in spelling tests.

As far as the two stars and a wish feedback in Natural Science unit 4 is concerned, students with learning difficulties, in both groups, failed to write any comments. This was because they had less time than the rest of students to finish their spelling task and could not dedicate any spare time to write their feedback. One more time, comments were very similar. In both groups, many students noted that they needed to improve their handwriting as the most common wish. Added to that, some students in both groups also talked about the need to be more focused when they were doing the spelling activities.

In the control group, some students gave themselves stars because they thought that their handwriting was improving. They also praised themselves for being able to be quiet whilst copying the words from the board. Also, one student gave herself a star for being able to work on their own and without any help. However, she wished for more teamwork ("*Puedo hacer la tarea sola. Lo que quiero es trabajar más en equipo*", S4, feedback given on the 26th of February 2020). Albeit most of them seemed happy to have some quiet time to do the spelling work, it also seemed that some of them were missing working with others. S2, once more asked for more challenges when he was required to make a wish for the next lessons. He wrote: "*quiero más palabras y más veces*" ("I want more words and more times", S2 feedback given on the 26th of February 2020). As already commented, this student was losing interest for the activity and worsening his results in the beliefs and spelling tests. He was leaving a trail very easy to follow about his dissatisfaction with the spelling activities.

As a consequence, I tried to pair this student with other student that had learning difficulties. I wanted to make S2 feel important whilst another student would benefit from having things explained by a classmate. Nonetheless, this pair did not work. S2 was supposed to help this other classmate but got frustrated very easily when the other student showed her difficulties. In fact, I decided to separate them in the middle of the activity as I could see how the girl with difficulties was having a hard time with him (note taken 25th of February 2020). Next, he was asked to observe how other student helped another student in class. After a couple of observations, he was paired with another student a

couple of days after the first incident. I could observe how he had definitely improved the way he approached a mate with difficulties (note taken 28th of February 2020).

Sometimes students have very different personalities and no matter how you try to help them that they have their own ideas and times. Learning to be flexible and adapt to situations was also something that I had to teach these students. This time I was not teaching spelling, but certainly, these are skills that will help them for life. One of the challenges that working with young learners has is the fact that they are still learning to cope with very intense feelings such as frustration, anger or even happiness sometimes. They are learning how to manage them and how to make use of them in a society. Thus, activities that are related to helping others were at the core of every lesson. Even if the control group did the spelling individually we always worked out some pair work when the fast finishers were ready.

The experimental group also mentioned the need to improve their handwriting or their scores in spelling tests. Their wishes range from speaking English during the task and from being faster to being able to concentrate best during the task (S9 and S17, feedback given the 26th of February 2020). Most of students in the experimental group gave many stars to being able to work in a team. After the control group incidents, I noted that it was a very good idea to get students used to working with others (note taken 28th of February 2020). Some students gave themselves stars for being able to help others (S22 and S12, experimental group feedback given the 26th of February 2020). In all cases, students reported to enjoy the activities and pleasure in working with others. It is possible, therefore, that students in the experimental group that were required to work with others were developing a sense of community and fellowship more intense than the control group. According to these data, we can infer that team or pair work help young learners to create a sense of fraternity with others that helped them be more flexible and to adapt to others and different situations.

In summary, all the questionnaires provided in this term were a powerful tool. The letters to the teacher offered a safe space for students to share thoughts that they were not able to share verbally. Peer and self-assessment as well as the observation rubrics and the notes taken in the research journal proved to be effective since they were an instrument for reflection, for both, students and teacher. On the one hand, it helped me take some actions to improve the development of the activities carried out in class. On the other hand, it helped students be more aware of their strengths and weaknesses and thus, to feel more accountable and in charge of their own learning.

Having discussed what students said about their performance and having compared that to my notes and results in spelling tests in the first and second terms, the final section of this chapter briefly addresses some comments and notes about students with dyslexia. Dyslexia is characterised by a difficulty in reading and writing. This study investigates one of the most important issues when writing, spelling. Bearing in mind that there were three dyslexic students in these groups (2 in the control group and 1 in the experimental group) it seemed of paramount importance to make a brief mention about their performance in spelling tests.

7.2. Taking a closer look into dyslexia

Dyslexia is characterised by a difficulty in reading and writing (Shaywitz, 1998; Benmarrakchi, et al., 2017; Tsampalas et al., 2017; Martínez-García et al. 2020, among others). According to Tsampalas et.al., (2017), three major components are distinguished in students with dyslexia: problems with reading and writing, spelling mistakes and insufficient speech. As explained earlier in this study, spelling is a subskill of reading and writing (see chapter 1, sections 1.4.1 and 1.4.4). Consequently, it seemed of paramount importance to take the time to analyse whether the use of these particular spelling strategies (i.e., copying words in the control group and NLP spelling strategies in the experimental group) were fostering spelling skills in students with dyslexia in my class.

Due to the fact that I counted with 3 dyslexic students in the examined groups (2 in the control group and 1 in the experimental group), I decided to briefly investigate them in order to find out how they performed in spelling tests. My students were diagnosed with dyslexia the same year this study was carried out⁹³. When this investigation started, I did not know whether they had dyslexia or any other learning difficulty. Nevertheless, Shaywitz (1998) claims that dyslexia affect to 80% of people with a learning handicap. Furthermore, Benmarrakchi et al., (2017) argue that dyslexia is a disorder that implies a

⁹³ Their difficulties were noticed around the middle of the first term. Steps were taken for these students to be diagnosed by the school psychologist. I filled out questionnaires and documents for the school and pediatrician. I held several parents' meetings and had meetings with the deputy head and school's psychologist. As a result, two of these students were diagnosed at the end of the first term (both of them in the control group) and the third student was finally diagnosed in the second term (in the experimental group). Once they were diagnosed, they were provided with additional help: one session per week with the hearing and language teacher (*maestro de audición y lenguaje*) and individual methodological adaptations in every lesson. These adaptations included things such as change of the colours in the handouts provided or granting more time in tests. However, due to COVID 19 the school lessons were cancelled in mid-March and we only had time to provide students with these aids for some weeks at the beginning of the second term.

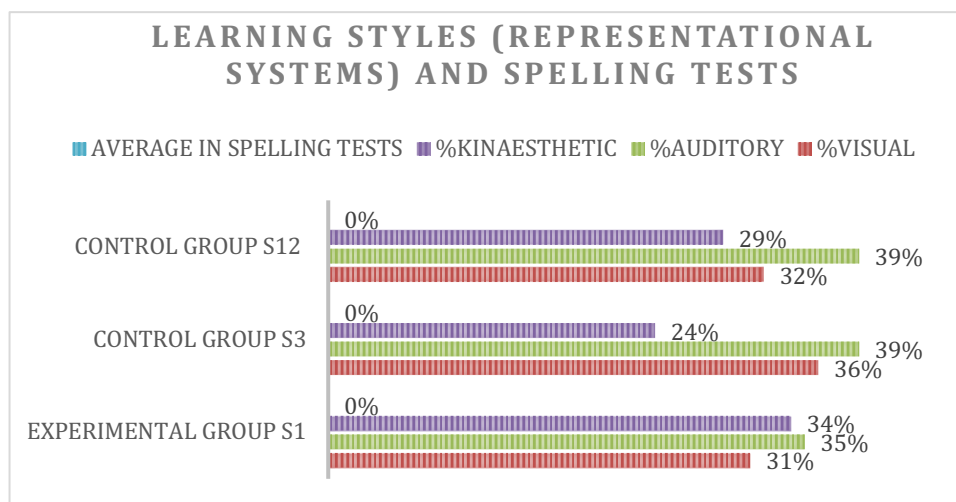
difficulty with reading and writing regardless mainstream instruction, appropriate intelligence and sociocultural possibilities. The challenge is that dyslexic students are supposed to reach the same objectives as the other students in class (Tops. et. al., 2013). Thus, they need extra support that is not always available or sufficient at school and specially in the bilingual class. As a consequence, they are usually lagged behind with none or little support. According to Peer (2014) this may be due to the fact that dyslexia researchers have been devoted to monolingual children and bilingualism research has been dedicated to students without special needs.

In order to address this lack of research about dyslexia in the bilingual class, the following is an analysis of the most relevant features of these students in my class. Not only will I examine their spelling tests but also the learning preferences checklist questionnaire and the beliefs test since these were the most relevant questionnaires addressed to the research questions.

The first thing these students had in common was that all three had a lot of difficulties when writing in any language. As commented in the previous section, they had strong difficulties when writing their comments in the questionnaires provided even if these were required in Spanish (see chapter 6, section 6.2.8.3 and chapter 7, section 7.1.8.1). In line with this, Martínez-García et.al. (2020) claim that students with dyslexia have handwriting difficulties since they demand more time to retrieve the alphabet order. Consequently, they are also slower when it comes to writing and spelling. In this particular case, these three students had illegible handwriting and tried to skip all writing tasks quite frequently. This was probably a consequence for having solid difficulties with written language. Hence, they had to be encouraged to write their comments which ended with the teacher trying to elicit some ideas from them verbally in L1 most of the times. At first, they could have been identified as lazy or idle students that did not want to take part of the activities proposed in class. However, as I took the time to really check the quality of what they did in class, especially when it came to handwriting, I realised that there was something else going on.

Regarding the learning styles or representational systems, the next graph illustrates the breakdown of these three students' learning styles and their results of the spelling tests throughout the study.

Graph 31: Dyslexia: Learning styles and Spelling tests

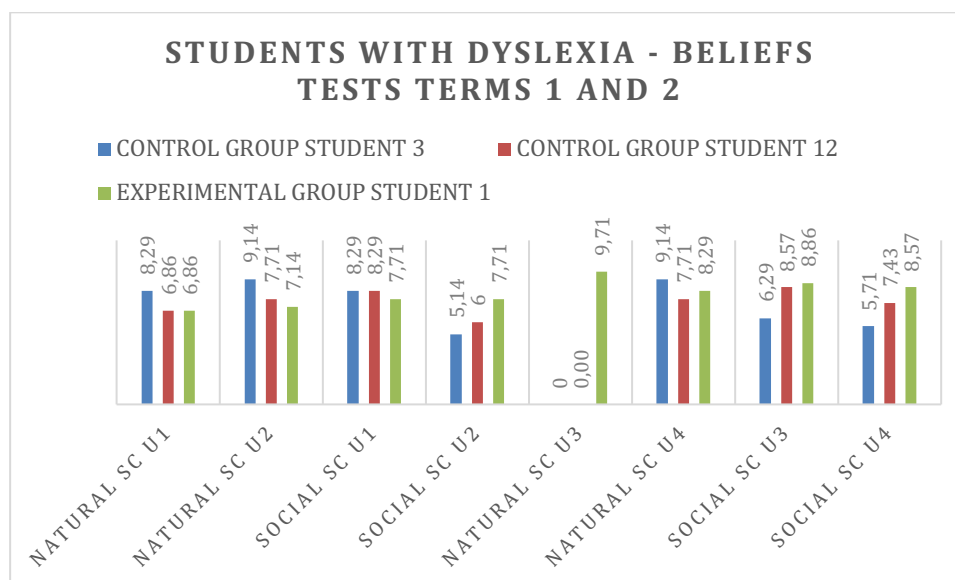


As it can be seen from the graph above, students with dyslexia were mainly auditory in my class. Both students in the control group had 39% auditory preference followed by more than 30% visual preference and around 25% kinaesthetic preference. Similarly in the experimental group, the student with dyslexia was also mainly auditory with 35% of preference although this time she was more kinaesthetic than visual with a short difference of 3%. Thus, the student in the experimental group could be considered a balanced student with regard to learning styles. These findings are not in line with Benmarrakchi, et.al., (2017) that revealed that students with dyslexia tend to have firm predilections for a particular learning style. As already noted, they discovered that dyslexic students were usually visual, albeit in my study all three dyslexic students were auditory (see chapter 6, section 6.2.7.1). These findings may be somewhat limited by the number of students considered. However, at least in these groups of students, neither they were visual learners nor had a strong preference for a particular learning style.

With regard to results in spelling tests, results are self-explanatory. They did not have a single test (pre-test/final test) with a score better than 0. They never got a right word in any of the tests during the study. Therefore, these results were clear indicators of the major difficulties these students had, no matter what spelling strategy I was using to reinforce spelling on each group, not a single student diagnosed with dyslexia passed a spelling test. As a matter of fact, during the first term, the results in these tests were also an indicator for me to take action and have them checked by the school psychologist. Consequently, getting the help these students needed to learn how to read and write was a more important priority than their results in this study.

In order to have a bigger picture about these students' personalities, I also analysed their answers on the beliefs tests⁹⁴ they completed before taking the spelling test. Pursuant to that, I gathered the average results of each beliefs' test in the following graph below.

Graph 32: Students with Dyslexia – Beliefs Tests Terms 1 and 2



As it can be seen from the graph above, all students showed a high level of positive beliefs towards the spelling strategies used in class with the exception of Natural Science unit 3 for S3 and S12 in the control group that did not take this test. As observed, S3 in the control group was one of the most positive students in terms of beliefs although by the end of the study she shows more uncertainty about copying words for spelling practice. She had an average of 8 to 9 points in all units' beliefs tests except the last unit of the first term. In this unit, (Social Science Unit 2) she evaluated her beliefs towards copying words as a spelling strategy below 6 points. Given that this student had serious difficulties to follow the class, it seems to me she was answering what she thought it was good or nice to be answered. She probably was not being honest with her beliefs of what she thought she could do in terms of spelling. After she had her diagnosis from the school's psychologist and paediatrician, she was more aware of her difficulties and wanted to answer the beliefs test statements with more accuracy. As a result, she passed from a very high average in her answers to a more moderate by the end of the second term, albeit she still had quite high expectations about the spelling practice.

⁹⁴ Statements to the students' beliefs tests were already examined chapter 6 (see section 6.2.2) and chapter 7 (section 7.1.2). The handout can be found in the appendix (see appendix 4).

In relation to student 12 in the control group, her level of positive beliefs towards copying words as a spelling strategy was also quite high. Her average of answers in the beliefs tests during both terms ranged from 6 to 8 points with the exception of the beliefs test of Natural Science unit 3 that she could not perform. However, this student also failed every spelling test during both terms. Even if she was a bit more moderate than her partner in the control group, she was still a lot more positive about how copying words would help her to become a better speller.

Finally, regarding the dyslexic student in the experimental group, she also had a high level of positive beliefs towards the NLP spelling strategy. Her average answers in the beliefs tests throughout the term were around 7 points in the first term and even higher in the second term with an average around 8-9 points. Despite this, she failed to pass every spelling test during the term.

In my opinion, these students wanted the teacher to be happy with them. Therefore, they wanted to keep a low profile answering what they thought it was good or right to answer. They wanted to make up their difficulties in these beliefs tests as they probably thought that doing or trying to do what they were required they would be able to comply with spelling work. However, the reality was quite different. Her results were not matching their expectations. Whenever they were required to write or reflect about their performance, they either tried to skip the work or wrote very simple feedback as the already mentioned note “*Quiero que me ayudes / I want you to help me*” (S4, control group 5th November 2019) (see chapter 6, section 6.2.8.1).

All of them had serious difficulties to follow the class in English, to comply with work in any lesson and obviously with spelling in both languages. Shaywitz (1998) argued that dyslexia is not usually diagnosed until the age of 9, around third grade. Hence, the early diagnosis of their difficulties might have been the silver lining to this situation. Given that I was devoted to find out ways to help students achieve key content vocabulary in the bilingual class, I was more aware and conscious about the difficulties of learning how to read and write in the foreign language. Consequently, I may have been prompted to notice reading and writing difficulties at an early stage. With respect to copying words or the NLP spelling strategy for spelling practice, I can point out that they did not make any difference to their writing performance in the bilingual class.

7.3. Summary of the chapter

This chapter began by providing relevant data to analyse the results of the second term. In agreement with this, scores of the spelling tests in every unit were examined (see section 7.1). The results for Natural and Social Science units 3 and 4 were studied and it was noted that the experimental group obtained better scores in spelling tests and thus, a more positive performance than the experimental group. After that, spelling tests they were cross checked with the results of the beliefs tests (see from section 7.1.2 to section 7.1.6). Along this section, the different results about students' expectations towards the efficacy of the spelling strategies were analysed. In general, spelling expectations were a lot higher than the actual results in the spelling tests. Nevertheless, some particular cases were also examined since their disconformity with the spelling strategy applied in each situation gave important insights such as the lack of motivation and the consequent decrease of spelling scores.

This chapter continued reviewing the results of the Learning Channel Preference Checklist results (LCPC) and indicating that there does not seem to be a relationship between learning styles and spelling performance due to the inconsistency between the results in the two terms studied (see section 7.1.7). In successive sections, other questionnaires such as letters to the teacher (see section 7.1.8.1), notes in the observation rubrics and research journal (see section 7.1.8.2) were considered as qualitative data highlighting the most important notes with regard to spelling. Finally, self and peer assessment questionnaires were reviewed in order to further corroborate other findings that had been previously commented in other chapters or sections (see section 7.1.8.3). To conclude this chapter, dyslexia has been identified as an important difficulty in reading and writing, especially in the foreign language (see section 7.2). This has served to analyse whether the use of these particular spelling strategies was helpful for students with this learning difficulty.

In the chapter that follows, the conclusions derived from the analysis of results in this dissertation will be presented. I will restate the thesis statement and I will review the most important key points of this study. In this fashion, I will go back to the research questions by trying to answer each and one of them. I will also explain this study's implications and notes for future research.

CHAPTER 8. CONCLUSIONS AND IMPLICATIONS FOR FURTHER RESEARCH

Having examined all the results for both the pilot and the main study of this dissertation, this section will outline the main conclusions drawn from the findings that have been illustrated throughout the study. In so doing, I will attempt to answer the research questions that guided this study.

As previously stated, the present study was designed to determine the impact of the implementation of NLP spelling strategies for the sample of 2nd grade students in a bilingual school in the *Comunidad de Madrid*. More precisely, the purpose was to analyse the effect that NLP spelling strategies in CLIL settings have regarding the improvement of spelling in the foreign language. In this light, the results of the experimental group that used NLP spelling strategies were compared to the results of the control group that followed a more traditional approach to spelling by copying words from a list. The study was undertaken in two phases: a pilot study of five weeks in 2016 and a main study of six months in the 2019/2020 academic year.

In what follows, the research questions of the present study will be answered based on the results provided in this study.

8.1. Research question analysis

Question 1: Is the use of the NLP spelling strategy an effective teaching practice to raise spelling awareness and performance? Can the use of the NLP spelling strategy improve students' spelling ability in content-subject classes? Is the NLP spelling strategy useful to memorize the spelling of content words? If so, will the use of NLP strategies in the classroom increase motivation towards written skills?

The first finding to emerge from data was that key content vocabulary was indeed a challenge for students in CLIL contexts. The low scores in every pre spelling test made a statement about the much-needed spelling instruction. As a means to define the NLP spelling strategy effectiveness in CLIL contexts, the control group copied words for spelling practice, which was designated as a traditional approach, and the experimental group practised spelling with two NLP spelling strategies (one each term).

Given that the data collection took place at the beginning of a school year, the time for students to get adapted to new classroom routines and the foreign language was being

reflected in the results with around 75% of students in the experimental group and 67% of students in the control group failing the first Natural Science test. Despite this, the control group counted with 25% of tests within the top performers zone and, thus, they were considered to start from a better place than the experimental group. These findings support the idea that learning the first NLP spelling strategy in the foreign language was an additional challenge for the experimental group that may have permeated initial results.

Data obtained during the first Social Science unit, after a month of students getting used to spelling practice with the strategies applied in each group, has shown that 83% of spelling tests within the experimental group against 62% in the control group were within average, successful and exceeding zones. Thus, there was around 20% more of students in the experimental group obtaining higher scores in spelling tests. Data obtained from the second Natural Science unit has revealed that spelling tests within the successful and exceeding zones considerably improved in the experimental group with 42% of tests within this frame. Meanwhile, the control group displayed 13% within the successful zone and presented 17% more of failed spelling tests. As a result, around 40% of students in the experimental group were getting better and higher spelling scores with NLP spelling strategies.

At the end of the first term, in Social Science unit 2, spelling tests scores decreased considerably with around 60% of students in the experimental group and 75% of students in the control group failing the tests. It was then concluded that weariness that students may have felt at the end of the term and Christmas celebrations in the school may have had an impact on students' spelling performance. Nevertheless, the experimental group doubles the number of tests with average, successful and exceeding scores with 41% against 21% of tests within the same zones in the control group.

Good results in spelling tests within the second term in the experimental group remained increasing in the first Natural Science unit with 63% of students in the experimental group with scores from average to exceeding in contrast with 50% obtained in the control group within the same zones. However, the results in the first Social Science unit in the second term considerably dropped in both groups with 59% and 75% of students failing the test. Despite this, the experimental group showed 37% of tests within average, successful and exceeding zones whilst only 21% of tests in the control group were in the same zone.

With reference to the last two content-subject units in the study, Natural Science unit 4 was the most successful of all units. 48% in the experimental group and 38% in the control group obtained exceeding results. Added to that, results within successful and exceeding zones were larger in the experimental group with 35% against 25% in the control group. Furthermore, 37% of students in the control group failed the spelling test whilst only 8% of students in the experimental group failing the spelling test; therefore, the experimental group obtained much better results in spelling tests. The fact that students found enjoyment in the activities presented in this unit (i.e., plants project) as well as the use of key content words in other contexts rather than tests may have played an important role in spelling results.

As for the last Social Science unit in the study, the experimental group presented 79% of tests within average to exceeding performance zones whilst only 21% of the control group achieved the same results. In addition, 79% of students in the control group failed the spelling test that significantly differs from the 17% of students in the experimental group not being able to write at least half of the words dictated. In this case, experimental group's results in spelling tests surpassed the control group in every unit with the exception of the first Natural Science unit in this study.

This study has highlighted that several factors had an effect on students' spelling performance. In line with this, motivation, emotional factors together with the time of the study emerge as predictors of spelling performance. On the one hand, students' motivation towards a particular Science topic played an important role with some topics being more successful than others. Conforming to this, in terms of spelling performance, Natural Science unit 4 devoted to the study of plants was the most successful unit in both groups. This unit was carried out in the middle of the school year when students were used to classroom routines and spelling strategies applied. In this unit, students were also required to take care of their own plant and record its growth regularly using most of the key content words practised in the unit in a research journal. Motivation towards this activity and thorough practice of key content words in other contexts such as a class project has shown that exceeding scores considerably improved in both groups with 48% in the experimental group and 38% in the control group. Furthermore, the use of NLP spelling strategies made students in the experimental group more successful with only 8% of failed tests that contrast the 38% of failed tests in the control group in the same unit.

On the other hand, Social Science units in this study, in general terms, showed a worsening of results. Accordingly, 59% of students in the control group and 75% of

students in the experimental group failed Social Science units 2 and 3. The time of the study close to Christmas celebrations and the end of the first term was identified as a possible reason for the drop of results in Social Science 2 (i.e., wind and rain). The difficulty of specific weather measurement instruments words (i.e., rain gauge, weather forecast, etc.) and specific words related to landscapes (i.e., livestock, bridge, valley, etc.) was highlighted as another possible explanation for the drop in results. The evidence from this study has suggested that being tired or overly challenged might have made students not as interested in these topics.

Consequently, this study has shown that, in all groups, spelling performance improves when students were motivated towards a Science topic and content vocabulary was more common to them. Even when the results were not as positive, NLP spelling strategies always helped students in the experimental group perform best. In this vein, better results in the experimental group makes it possible to argue that NLP spelling strategies and the way they were presented to students made an influence on motivation towards written skills.

This study has also revealed that students' encouragement towards the particular spelling strategies implemented in each group had an influence in the results. Beliefs and peer and self-assessment questionnaires revealed that students in the control group lost interest in copying words for spelling practice. In contrast, the same questionnaires in the experimental group pointed out that pair and group spelling practice was perceived as a more enjoyable activity. The fact that students were encouraged and driven towards spelling practice may have also had an influence on positive performance and motivation towards written skills.

In this sense, students' opinions in the different questionnaires provided, notes taken in the research journal as well as observations made by language assistants highlighted how giving opportunities to use the foreign language in a relaxed situation (i.e., working with a partner, giving them a sense of autonomy) increased motivation towards the learning of the language. It could be concluded that the type of tasks presented and grouping selection were a possible trigger for motivation.

This finding goes in line with Anderman and Dawson (2011) study in motivation in learning that argued that teachers approach to learning sway motivation. In this regard, this study has contributed to the existing literature by providing a complete review of the spelling activities carried out in class as well as all the classroom techniques and routines followed that surrounded the teaching of spelling. Throughout the learning process, goals

and expectations were shared at the beginning of the lesson. In addition, students were provided with plenty of opportunities for students to share opinions and feedback in all questionnaires. As a result, all these elements emerged as a tool for students to develop a sense of learning responsibility and control.

In the same vein, the pilot study has drawn attention to the fact that sharing goals and expectations and giving opportunities for self and peer assessment had a positive effect on students learning to accurately assess themselves. The findings in the main study go on to add that using English as the vehicle to learn contents and the use of these classroom techniques had paramount importance to make students connected to learning.

Furthermore, the teacher's approach to the different spelling activities carried out in class (i.e., as a learning participant and facilitator Vs. a leader who gives words to copy and checks its spelling) may have also inspired motivation and better performance in the experimental group. Overall, this strengthens the idea that practising spelling in pairs and small groups influenced motivation and thus improved the results in spelling tests.

Another factor that had an effect on spelling performance was related to the individual and social circumstances and other emotional factors. A growing body of studies has illustrated how emotional factors, beliefs and identity issues influence learning (Krashen, 1982, 1983, 1985, 1989; Ornstein and Sobel's, 1987; Caine and Caine, 1990; Dilts, 1997; Ni, 2012 among others). Deep analysis of the beliefs, peer assessment questionnaires and comments provided by students in this study has provided a major understanding into students' individual circumstances in the groups investigated. Notwithstanding the relatively limited sample, this work offers valuable insights into the specific individual characteristics of students. In alignment with this, students' personalities (i.e., shy, self-conscious, confident, etc), social circumstances (i.e., illiterate parents or family issues) as well as learning difficulties (i.e., dyslexia, ADHD or ASD) were identified as factors that influence spelling performance.

Given that students in the experimental group performed best in spelling tests, the present study has claimed that NLP spelling strategies and the way they were presented to students had an influence on motivation towards written skills and thus, learning. As a result, it can be concluded that the first hypotheses about use of the NLP spelling strategies in the learning of lexical fields within content-subject classes enhancing spelling awareness and performance whilst helping students to become better spellers in a motivational and meaningful environment can be supported.

More specifically, both the pilot and the main study have revealed that the implementation of NLP spelling strategies in the experimental group has shown that students' ability in content-subject classes tends to improve. These results are in line with the previous studies in the literature (Benson and Carey, 2006; Carey et. al. 2010 and 2011) that pointed out that NLP spelling strategies had positive implications in improving spelling skills as well as making students more confident. Literature review analysis has shown that there is a lack of research of NLP in ELT (Harris, 2001; Farahani, 2018). In consequence, it was fair to assume that research in the use of NLP spelling strategies in the foreign language was scarce and inexistent in CLIL contexts. Therefore, the present study provides the first comprehensive assessment of the NLP spelling strategies in CLIL contexts. This study has then contributed to the scarcity literature by showing that NLP spelling strategies provide an improvement in content-subjects spelling accuracy and were useful to memorize the spelling of key content words in the groups investigated.

Question 2: Do positive beliefs about spelling work bring about any change in the spelling performance? Do students who believe the NLP spelling strategy is effective perform best in spelling tests? Do students who believe that copying words is effective perform best in spelling tests? Will the use of peer and self-evaluation questionnaires make a difference regarding students' self-concept and beliefs?

The beliefs test during the pilot study presented a question that aimed to find out how students were feeling about their spelling progress (i.e., How do you feel about spelling this week?). In this test, students could choose from brilliant, good or need to improve answers that, although in a broad manner, could give an account about what students believed about spelling. Data obtained from these tests pointed to the fact that motivation and self-confidence, in general terms, were factors that may have driven students in the experimental group perform best in spelling tests. Added to that, getting students used to assess themselves regularly in the beliefs and peer and self-assessment questionnaires had a positive influence in students since they were more able to assess themselves according to their performance (see chapter 5, section 5.6.1).

Having obtained a general perspective, a new beliefs questionnaire adapted from the attitudinal questionnaire of Nahari and Alfaddha's (2016) study on visualization of spelling was applied in the main study with young learners. This was done with the purpose of finding out what students believed about the spelling strategies used or whether

they believed that particular spelling strategy was effective to them. In doing so, beliefs tests were presented to students a day before the spelling tests. This way I could infer what students believed towards the spelling strategies used before they knew the number of words they were able to correctly perform in spelling tests.

In an attempt to gain knowledge about the efficacy of the spelling strategies used in each group, students' answers in the beliefs tests were triangulated to their results in spelling tests in three manners. Having analysed the results of the beliefs tests isolated in a first phase, these results were compared to spelling tests. With the purpose of analysing specific individuals who could give more insight to the study, the Pearson's correlation index was calculated after that.

This study has identified that positive beliefs towards the spelling strategies used usually exceeded the average of results in spelling tests in both groups (see results for all Science units, chapter 6 sections 6.2.3 to 6.2.6 and chapter 7 sections 7.1.3 to 7.1.6). High rates of positive responses to most statements in the beliefs tests has revealed that, in general terms, beliefs were high regardless the results obtained in spelling tests. Thus, positive beliefs towards a particular spelling strategy have shown that they do not necessarily mean an improvement in spelling performance.

Examination on students answers in the beliefs tests has allowed to suggest that, from first term, the control group began to show evidence of a loss of motivation towards copying words for spelling practice. From the first Social Science unit in the first term, 17% of students did not find copying words neither fun nor interesting (see section 6.2.5). This rate remained to increase during the first term for the control group with 21% of negative or uncertain answers in Natural Science unit 2 (see section 6.2.3) and 26% in the last Social Science unit in the first term (see section 6.2.5). This rate of negative and uncertain answers remained increasing during the second term with 30% and 46% of negative or uncertain answers in the two last Science units in the second statement in the beliefs test (i.e., "I believe copying words is fun and interesting") (see section 7.1.5). By the end of the study, almost half of the control group had lost interest towards copying words for spelling practice.

Notwithstanding, the first triangulation between positive beliefs and performance has revealed that students in the control group were validating copying words as effective to a large extent. As shown in Chapter 6 (sections 6.2.3 and 6.2.5), The initial 83% of students validating the strategy increased to 96% towards the end of the study. As a result, they were validating copying words as an effective spelling strategy predominantly.

With regard to spelling performance in the control group, this study has noticed that around 50% of students were able to match beliefs and performance in three units (see section 6.2.5 and section 7.1.5). However, during most of the study 21% of students were roughly matching beliefs towards the efficacy of copying words for spelling practice and spelling performance in spelling tests (see section 6.2.3 and section 6.2.5). Even though they were assessing copying words as an effective strategy to learn the spelling of key content words, most students were failing to assess spelling strategy beliefs and spelling performance.

Owing to results in the effectiveness charts in every unit, it could be concluded that copying words gave students in the control group confidence as they knew exactly what was expected from them. Thus, they might have believed that being able to copy the words would be enough for them to be ready to perform well in spelling tests. In the end, the fact that students were completing the task without spelling mistakes or even having presented in good handwriting may have driven students in the control group to believe that copying words was effective to help them become better spellers.

Data obtained from students' answers in the beliefs tests in the experimental group has evidenced that more than 80% of students were validating the NLP spelling strategies used in all units (see chapter 6 sections 6.2.3 to 6.2.6 and chapter 7 sections 7.1.3 to 7.1.6). Furthermore, towards the end of the study these results increased with 90% of students validating the strategy (see section 7.1.5). These high beliefs were understood as positive attitudes towards the NLP spelling strategies implemented. Nevertheless, 21% of students were negative or uncertain about the NLP spelling strategy being fun or interesting at the beginning of the study (see section 6.2.3). Furthermore, during most units in the first term, some students believed that NLP spelling strategies were neither simple nor easy. In the first Natural Science unit 13% of answers were negative and 4% of answers were uncertain to this statement (i.e., "I think this strategy is simple and easy") (see section 6.2.3). In the middle of the term, in the second Natural Science unit, these answers were reversed with 13% of uncertain and 4% of negative answers (see section 6.2.3). Furthermore, 21% was uncertain about the NLP spelling strategy being simple or easy in Social Science unit 1 with no negative answers (section 6.2.5). This evidenced the additional challenge that implied having to learn a completely new strategy in the foreign language to meet within CLIL lesson standards for students in the experimental group.

At the beginning of the second term, a new spelling strategy was introduced to students in the experimental group and 13% of students showed uncertainty about the new strategy being simple or easy in Natural Science unit 3 (see section 7.1.3). During the second term, the results to this statement improved with no negative answers in Natural Science units 3 and 4 (see section 7.1.3) and only 4% of negative answers in Social Science units 3 and 4 (see section 7.1.5). Thus, even though the introduction of a new NLP spelling strategy in the second term was perceived as a challenge to students, towards the end of the study there are signs for students' confidence in its use.

Analysis on the beliefs about the efficacy of the NLP spelling strategy and the triangulation with results in spelling tests allowed to find out that students in the experimental group were closer to match beliefs and performance than the control group. The spelling tests results for Natural Science unit 2 and Social Science unit 1 in the first term revealed that around 55% of students were able to roughly match beliefs and spelling performance (see section 6.2.3 and 6.2.5). These positive results increase in the second term from Natural Science unit 3 with more than 65% of students being able to match beliefs and performance (see section 7.1.3) and 75% of students in Natural Science unit 4 (see section 7.1.3) and Social Science unit 3 (see section 7.1.5). Despite this, 38% of students were unable to match beliefs and performance in Social Science unit 3 that was also the most challenging unit in terms of spelling performance for both groups.

Therefore, even though students in the experimental group were more able to assess the efficacy of the NLP spelling strategy, when these results were triangulated to spelling performance, high positive beliefs were always above 90% in this group. All things considered, the slight trend of improvement in spelling tests together with the shorter difference between beliefs and spelling performance in the experimental group was understood as a more positive attitude towards the NLP spelling strategy than the control group towards copying words. The control group lost motivation whilst worsening results in spelling tests. On the contrary, the results in the experimental group has revealed that working in pairs may have had an influence in the positive results in spelling tests since they were having a more playful learning experience.

Pearson correlation analysis has allowed to point out that there was no significant correlation between beliefs and spelling performance during most of the study. Beliefs were positive in spite of the results in spelling tests. As extensively commented in chapters 6 and 7, Pearson's correlation index was low or moderate in most units for both groups. The control group results showed that they were able to have a moderate correlation index

at the end of the first term in Social Science unit 2 and at the beginning of the second term in Natural Science unit 3. However, results of the rest of the units in the study showed a low correlation index.

Pearson's correlation index analysis in the experimental group has revealed that all Social Science units showed a moderate correlation index in this study. Nevertheless, a low correlation index was noted in Natural Science units 1 and 2 in the first term and Natural Science unit 3. Despite this and by the end of the study, students in the experimental group showed an improvement of results from no or low index of correlation to moderate correlations consistently in the three last Science units in the second term. In consequence, these results in the experimental group were considered as an initial step towards students learning to match spelling and performance.

The relevance of Pearson's correlation analysis has been clearly supported since this analysis has given the opportunity to research students' individual answers in the beliefs tests with very important insights. As reflected in the analysis of the correlation between spelling and performance in both terms, almost in every unit, the same students remained to narrow the difference between beliefs and performance in both groups investigated. As a result, the evidence in this study suggests that students with a higher maturity degree were more able to assess effectively the spelling strategies used in the beliefs test.

In a similar vein, students who had major difficulties in spelling tests but indicated high beliefs were found to be the same across the study. In many cases, these students were identified as students with special needs or with specific social difficulties. Consistent with Peters, Klein and Shadwick's (1998) study on special education it was pointed out that the positive answers in the beliefs tests could be affected by students trying to hide their difficulties by answering what seemed the mainstream and best thing to do. In line with this, the contribution of this study has been to confirm that students who showed more difficulties with the foreign language and spelling tend to answer positively in the beliefs tests to mask their disadvantages.

Furthermore, Pearson's Correlation analysis has evidenced that some students' beliefs towards the efficacy of the strategies were lower than actual performance in spelling tests. These individual cases were illustrated to bring light about the possible explanations for students drop in results in the beliefs test. With reference to this, it was concluded that these students in the control group were losing motivation towards copying

words for spelling practice. However, it also raised uncertainty about the authenticity of results since students may have answered whether they enjoyed the activity itself.

As for the experimental group, the drop of results in the beliefs tests were due to some students finding the NLP spelling strategy difficult to learn. Nevertheless, lower scores in the beliefs tests and positive spelling performance in spelling tests was suggested as source of uncertainty since more able spellers in both groups continued to do so regardless the spelling practice they were doing.

As a consequence, this study has raised important questions about the nature of students' answers in the beliefs test. High positive beliefs towards the spelling strategy used in each group remained almost intact throughout the study in both groups. When crossing data from the beliefs and spelling tests, it was initially suggested that the difference between high positive beliefs and low spelling performance could be reflecting students being motivated and driven towards new ways of working. However, in general terms, these positive beliefs did not always translate into more positive results in spelling tests.

Owing to Pearson's correlation analysis, individual responses in the beliefs test, together with an overview of the students' characteristics and personalities, evidenced that some students would answer what they thought they had to answer to be considered a good student. In line with this, it was identified that positive answers in the beliefs tests usually came from students who enjoyed and felt motivated towards spelling practice. However, answers in the beliefs tests were also influenced by students' personalities. For example, some shy or self-conscious students were identified as students who tend to answer positively in the beliefs test because they wanted to look good in front of the teacher and classmates or simply, because they did not want to cause any trouble or wanted to hide their difficulties. In contrast, other confident students were more certain to challenge some of the statements presented in the beliefs tests dealing with the enjoyment of the spelling activities (i.e.: I believe that copying words/this strategy was fun and interesting).

In line with this, evidence in this study further supports Hinton et. al. (2008) idea of students' personalities and individual circumstances having an impact on learning. Beliefs and spelling results in this study has argued that those students who were more confident and outspoken were more able to confront and challenge some of the statements in the beliefs test by giving a more honest opinion not influenced by others. On the

contrary, quiet and shy students were also identified as inclined to please their teacher by answering positively in the beliefs test.

In terms of the relationship between positive beliefs and spelling performance, this study has highlighted some important elements. On the one hand, maturity and students' personalities as well as the context in which students live and learn sway what students believe or say they believe. One more element that had an effect on students' answers in the beliefs tests were the way spelling was practised. Copying words for the control group seemed tedious for some students whilst the NLP spelling strategy, although challenging, was perceived as a more likeable activity. The fact that copying words was an individual activity whilst the practice of the NLP spelling strategy was done in pairs may have affected motivation. Therefore, motivation was an element that may have influenced different responses in the beliefs tests.

In sum, considering that positive beliefs were always higher than performance in all groups with the exception to some individual cases mentioned above, the hypothesis of obtaining better results in spelling tests when students have positive beliefs towards the spelling strategies used cannot be supported. It is unfortunate that this study could not conclude that positive beliefs did not bring change in spelling performance. However, the way spelling strategies were presented had important motivation and learning implications.

With reference to the last question, this study is uncertain about peer and self-assessment questionnaires making a difference in students self-concept and beliefs. As reflected in chapters 6 and 7, most statements in these questionnaires were highly rated in both groups and all units. Alike in the beliefs tests, positive answers were always higher than scores in spelling tests.

In the first peer and self-assessment questionnaire, 80% of students in both groups assessed themselves positively in Natural Science unit 1. In spite of this, only 29% of students in the experimental group and 37% of students in the control group were performing well in spelling tests. In the next unit examined, Social Science unit 1, 83% in the experimental group and 62% of the control group were positively assessing themselves. Nevertheless, the difference between the peer and self-assessment and spelling performance was almost 20% shorter in the experimental group and 3% shorter in the control group. The fact that students in both groups were closer to assess themselves according to their actual performance was considered as a positive outcome at the end of the first term.

In the second term, in Social Science unit 3, 85% in the experimental group and 76% in the control group assess themselves positively. Despite this, results in spelling tests drop with only 44% of students in the experimental and 29% of students in the control performing according to their answers in the peer and self-assessment questionnaires. As for results for Natural Science unit 4, 81% of students in the experimental group and 85% in the control group assessed themselves positively. The experimental group almost matched their assessment to their spelling performance with 79% of successful tests whilst the difference in the control group was over 20% larger with 64% of successful spelling tests. As a result, towards the end of the study, there was evidence on students in the experimental group being more accurate in assessing their efforts to comply with the spelling strategies put into practice.

It was particularly interesting to find out that students in the control group gave themselves positive feedback for speaking English during the spelling activities when they were required to do individual work. As a result, it was suggested that students tend to evaluate themselves as a whole. In doing so, if they had been required to speak English in any other activity before the peer and self- assessment questionnaire, they would give themselves praise for that when asked about it (i.e., when I work with a partner I can speak English during the activity). Similarly, if they were copying words and using English whilst seeking for help during spelling practice they gave themselves positive feedback for that.

One more important aspect in the peer and self-assessment questionnaires was that students had the opportunity to give further comments and feedback in a two stars and a wish section. Qualitative data taken from students' comments showed that students in both groups considered good handwriting as a very positive feature in spelling. In the experimental group, being able to work with others was widely commented as something positive they had achieved during the practice of the NLP spelling strategy. In line with this, it was suggested that students who had the opportunity to work with others developed a sense of fellowship that helped them to adapt to the different learning situations.

With regard to students comments in their need to improve area, speak English during the tasks was always pointed out as something to develop. In reference to this, comments gathered in the observation rubrics and research journal has confirmed that students were mainly using Spanish to communicate in the experimental group. In order to help students use the foreign language to communicate, lots of language support was

given (i.e.: It's my/your turn, snap your fingers, can you help me? etc.). In spite of this, speak English was always highlighted as something they could improve.

In line with Maggi (2012) involving students in assessment has evidenced to be beneficial and motivational to students. Despite its exploratory nature, this study offers some insight about peer and self- assessment questionnaires as an effective tool for the teacher to address problems and make possible adaptations as well as for students to reflect about their performance. Although it cannot be confirmed that the use of these questionnaires bring about changes in self-concept and beliefs, students were active participants and responsible of their own learning. Considering their young age, this was a rather difficult questionnaire to complete. Some students may still struggle to make such deep reflections about their own learning. However, some students were able to highlight their strengths and weaknesses. Consequently, by having students involved in their own assessment from a young age may help students develop the necessary skills to become more aware of themselves as learners.

Question 3: Do learning styles affect the ability to produce accurate spellings? If so, do visual learners perform best in spelling tests? Will the use of NLP spelling strategies make a difference in auditory and kinaesthetic spellers?

This study has purported to examine the relationship between learning styles in specific students and spelling performance whilst analysing the effectiveness of the spelling strategies implemented in each group (i.e., copying words/NLP spelling strategies). With the purpose of finding out the representational system of preference in the groups of students investigated, the Learning Channel Preference Checklist adapted and translated from O'Brien (1990) was presented to students at the end of the first term. This questionnaire included 36 statements divided in three columns for each group of learners (V-A-K) in which students have to answer using a 5-point Likert scale⁹⁵.

In an effort to give the necessary time for young students to reflect about their own learning, they took the questionnaire home for 3 weeks so that they could complete it with the help of their families. Due to the optionality of the test, not all students participated. Nevertheless, a sample of 21 students in each group took part in this part of the study.

⁹⁵ Always, Frequently, Sometimes, Rarely, Never

In the belief that being able to see the word in our mind is essential for academic achievement (Grinder, 1991:93) and given that best spellers are people who visualise the words (Revell and Norman, 1997), it was assumed that visual learners would be more prone to perform well in spelling tests. With that in mind and in order to find the relationship between learning styles and spelling performance, 3 male and 3 female students in each group (the strongest visual, auditory and kinaesthetic student) were investigated.

A note of caution is due here since it was particularly difficult to find female auditory students in the control group that were not subject of a specific difficulty. All female students in the control group whose highest scores were given to the auditory learning style in the LCPC questionnaire were identified as dyslexic students. As a result, I excluded these students from this part of the study as their scores in spelling tests could be a consequence of their difficulties. However, I decided to devote one more section to investigating these students' specific results in spelling tests with the strategies applied in each group at the end of the analysis of this study (see chapter 7, section 7.2). Hence, the fifth student with the highest score given to auditory learning style in the LCPC questionnaire was selected for this part of the study.

The findings in this study suggest that more than half students in both groups, 62% in the control group and 57% in the experimental group, showed a preference for visual learning styles. 38% in the experimental group and 24% in the control group were identified as auditory learners and only 14% in the control and 5% in the experimental group were recognized as kinaesthetic learners. Consistent with Afshar and Bayat's (2018) and Chetty et. al. (2019), this study has found that the most preferred learning style was visual followed by auditory and kinaesthetic (see section 6.2.7.1.).

Results in the first term indicated that the best male speller in the control group was kinaesthetic student with 100% success in 3 science units and 92% in Social Science unit 1 (S2). The second-best male speller in the control group was visual (S24) followed by the auditory student (S22) both with fair results in all tests above 58%. Female students' results in spelling tests were worse than male students in the control group. The auditory female student in the control group was the best speller but she did not pass most units in the first term and only had one test with 67% of success in the in Social Science unit 1 (S14). The visual (S7) student failed all spelling tests and kinaesthetic (S8) female student only passed Social Science unit 1 with 58% of success (see chapter 6, section 6.2.7.1).

In an attempt to find possible explanations about the relationship between spelling performance and learning styles in the control group, students with the highest spelling scores in the sample were further investigated (S2, kinaesthetic male and S14, auditory female) students. They were identified as the strongest CLIL students and a higher level of foreign language skills from this sample. In addition, they presented around 30% of preference in all learning styles which was considered as balanced students. Consequently, in terms of spelling performance, students abilities in the foreign language seemed to outweigh learning styles (see chapter 6, section 6.2.7.1).

With regard to results in the experimental group, both male and female auditory students, were the strongest spellers in the first term. The male auditory student (S6) obtained more than 70% in Social Science unit 1 and more than 90% of success in the rest of Science units. This student was also identified as highly motivated towards the use of NLP spelling strategy in the analysis of peer and self-assessment questionnaires in the first term (See chapter 6, section 6.2.8.3) and letters to the teacher in the second term (see chapter 7, section 7.1.9.1). However, he also highlighted difficulties with the NLP spelling strategy in his answers in the beliefs tests making his beliefs lower than actual spelling performance in the second term (see chapter 7, section 7.1.5). His good results were followed by the visual student (S16) with only Social Science 1 above 50% of success in the spelling test and the kinaesthetic student (S8) with all units below 50% of success. The kinaesthetic student (S8) was considered as the strongest student in CLIL subjects. Nevertheless, his good results in CLIL subjects were not a positive influence on spelling. The fact that he had missed some classes and tests may have had an effect on this student's motivation towards spelling practice through NLP (see chapter 7, section 7.1.7).

As for the female sample in the experimental group, the auditory student (S11) obtained above 90% of success in Natural Science unit 2 and Social Science unit 1, 67% in Social Science unit 2 and did not pass the first spelling test. She was also identified as the strongest CLIL student from this sample. Her results were followed by the visual student (S7) with similar results and the kinaesthetic student (S13) whose spelling tests did not reach 35% of success (see chapter 6, section 6.2.7.1). As a result, it could be suggested that, although good spelling results tend to rely on academic abilities of students, motivation also influenced students' spelling performance.

With reference to results in the second term, the best male speller in the control group was the visual learner (S24) with 93% of success in all units and 100% of success in Natural Science unit 3. His good results were followed by the kinaesthetic student (S2)

with all spelling tests above 87% of success. Finally, the auditory student (S22) passed Natural Science units but failed Social Science units with less than 40% of success (see chapter 7, section 7.1.7).

The male kinaesthetic student in the control group (S2) was the best speller in the first term. However, his spelling scores dropped 1 point from the first to the second term. He was also identified as a student with lower beliefs than actual performance in spelling tests during Pearson's correlation analysis where specific answers in his beliefs tests were investigated. Lack of motivation did the kinaesthetic student drop to second place in favour of the visual student in the second term. As a result, it was evidenced the lack of interest in copying words for spelling practice for some students in the control group had an impact on spelling performance (see section 6.2.2 and section 7.1.2).

Alike in the first term, the difference between male and female students scores in spelling tests in the control group was large with most spelling tests below the average score in the female sample during the second term. Similarly, the female auditory student (S14) was once more identified as the strongest speller in this group with 80% of success in Natural Science unit 3, 67% in Natural Science unit 4 and 40% of success in all Social Science units. She was followed by the visual student (S7) who had fair results in Natural Science units but did not reach more than 20% of success in Social Science units. The female kinaesthetic student (S8) in the control group did not pass any of the spelling tests with very low results below 13% in the second term (see chapter 7, section 7.1.7). Given that kinaesthetic students drop spelling performance from the first to the second term, it can be suggested that kinaesthetic students do not benefit from copying words for spelling practice.

In order to find possible reasons for the much lower success rate in spelling tests for female students in the control group, individual answers in the beliefs were further investigated. Despite their low scores in spelling tests, their answers in the beliefs tests were always highly positive. As a consequence, it was highlighted how other factors such as students' personalities may have played a role in their grades and spelling success. The auditory student being the most successful of all three was also the most confident and motivated towards the foreign language in this sample. The visual student was shy and self-conscious but work driven. As for the kinaesthetic student, although she was more confident, she did not enjoy learning English and failed to finish her spelling work regularly.

In consequence, it was argued that personalities played a role in spelling success. This study has suggested that shy and self-conscious students may try to hide their difficulties or answered what they thought they had to answer to be a good student in the beliefs test. In addition, confident students with difficulties in the foreign language showed positive beliefs towards copying words for spelling practice in the beliefs test but not performing correspondingly. Nevertheless, more mature students who are motivated tend to success in spelling being able to roughly match beliefs accordingly (see chapter 7, section 7.1.7).

As for results in the experimental group in the second term, the auditory male and female students were the best spellers with 100% of spelling success in most units. The visual student, in both male (S16) and female sample (S7), were the second-best spellers with better results in the female sample with 100% of success in Natural and Social Science unit 4. Finally, the spellers with the lesser spelling success were the kinaesthetic students. In the male sample (S8) he obtained results below 40% at the beginning of the term and 80% towards the end in Natural and Social Science unit 4. Similarly in the female sample (S13), she failed to pass spelling tests at the beginning of the term improving towards the end with 53% and 67% of success in Natural and Social Science tests respectively (see chapter 7, section 7.1.7).

In a bid to find other possible reasons that may have promote or hinder spelling performance in the experimental group, female students answers in the beliefs tests were also examined. The auditory student (S11) and visual student (S7) roughly matched beliefs and spelling performance whilst the kinaesthetic student (S13) had high beliefs towards copying words for spelling practice but poor results in spelling tests. The auditory student (S11) was a more mature student with better skills in the foreign language. Hence, these factors may have made her perform well and be able to bring beliefs and spelling performance together. The visual student (S7) was very shy student that overcame her difficulties with the language with hard work. The kinaesthetic student (S13) was not only shy but also tended to approach tasks with indifference. In line with this, students abilities with the foreign language in CLIL subjects and personalities were highlighted as elements that take part in spelling performance.

After analysing learning styles and results of specific students in each group, the objective was twofold: to find out if visual students had an inner advantage for spelling success; and to observe whether auditory and kinaesthetic students in the experimental group would benefit from a visual spelling strategy. This way it could be investigated the relationship between learning styles and spelling performance and how they affect the ability to produce spelling.

In general, it seems that visual spellers do not perform best in spelling tests. With the exception of male students in the control group (kinaesthetic first term and visual second term), the trend of auditory students obtaining the best results in spelling tests followed by the visual and kinaesthetic student was consistent throughout the study. Provided that most auditory students in both groups usually got the best results, it can be said that auditory learners perform best in spelling tests regardless the strategy used. In the light of the results, it could be noted how, both male and female auditory learners in the experimental group obtained better results in tests when compared with auditory learners in the control group. Therefore, it can be suggested that the NLP spelling strategy helped them perform best in spelling tests.

Nevertheless, a note of caution is due here since the strongest auditory student in the control group was not completely auditory. Consequently, it could be concluded that even though visual learning styles were the most preferred among students in both groups, they were not the best spelling performers. Therefore, auditory learners specially in the experimental group, benefited from a visual spelling strategy which translated into better results in spelling test.

As for kinaesthetic students, the hypothesis of kinaesthetic learners having a higher degree of EFL proficiency (Derakhshan and Shakki, 2018) was initially highlighted as a possible reason for good spelling performance. However, only once in this study a kinaesthetic student performed best in spelling tests. Hence, due to the limited sample, this hypothesis could not be supported. Kinaesthetic students in the experimental group, although being the students with the lowest scores of the three learning styles, improve 2 points in spelling performance from the first to the second term. Given that students in the experimental group were practising spelling in pairs in a more “hands on” activity, motivation towards the NLP spelling strategy may have played a role in spelling performance for kinaesthetic learners towards the end of the study.

Although the current study is based on a small sample of participants, the findings provided insights into the nature of good spelling performance. Whilst this study did not

confirm the relationship between learning styles and spelling performance, it did partially substantiate that, when spelling is practised, auditory learners tend to perform best in disregard of the strategy used (i.e., copying words / NLP spelling strategy).

However, exceptions in the male students in the control group sample made it necessary to explore some other possible explanations for spelling success. This study has shown that students who tend to get the best spelling results also have higher grades in CLIL subjects. Furthermore, they usually show stronger foreign language skills. Even though these factors seemed crucial of good spelling performance, good spelling performance may be compromised when motivation towards a particular activity or even the language is low. In spite of good grades in CLIL subjects and fair skills with the foreign language, students who lost motivation towards spelling practice in both groups usually dropped in spelling performance accordingly. Motivation seemed to be then an important indicator of spelling performance.

As for the last element related to the nature of spelling performance, it could be suggested that students' personalities and circumstances have an effect on what they think of themselves as learners. Potentially, visual learners were believed to be more prone to spelling success. Visual students in this part of the study were shy students with fair results. They were usually falling behind auditory learners that benefited from spelling practice obtaining better results in spelling tests. In addition, with the exception of the male kinaesthetic student in the control group, auditory students were not only the best spellers but also appeared as stronger students with better grades in CLIL subjects and better skills in the foreign language. As a consequence, being shy or timid seemed an element that was possibly hindering foreign language and spelling abilities.

8.2. Limitations of the study and suggestions for further research

Even though NLP is not a recent phenomenon, the literature review was hindered by the lack of previous research on NLP in EFL and CLIL contexts and in primary schools. As commented in the literature review, the scarce investigation about spelling in EFL contexts has been devoted to the study of visual spelling strategies in the last year of primary students and secondary students. Therefore, this study has contributed to the existing literature and lays groundwork for future research about spelling instruction and the impact of NLP spelling strategies in bilingual schools. In spite of its limitations, this study is then pioneer in the teaching of spelling with NLP for students in CLIL contexts.

The current study may be said to be limited by the sample size of students in the second year of primary education. Although a larger sample of participants in different schools of the *CAM* would also allow to gain knowledge about spelling and academic performance in the different contexts and areas of the community, the number of participants was considered to be enough to test the hypotheses and answer the research questions. Achieving this would have probably required changes and adaptations but it would have also built a more insightful foundation. Prior to this study, little evidence existed to support the idea that spelling instruction can be valuable for students in bilingual schools. Consequently, this study has offered a framework for the exploration of the use of NLP spelling strategies in CLIL contexts. This new understanding should help making predictions about how other students in other bilingual schools in the *Comunidad de Madrid* may benefit from spelling instruction with NLP in a classroom context in which their opinions, beliefs and learning styles are valued as an important part of the process.

Furthermore, a longer period of time to develop this investigation might have provided a more comprehensible understanding about the impact of the NLP spelling strategies as well as how beliefs and learning styles shape CLIL students' results in spelling tests. This study was conducted in a pilot phase for a period of five weeks in 2016 and six months in the 2019/2020 academic year in a second phase. Due to COVID-19 schools in Spain closed the 11th of March 2020 within a day's notice. This implied making last minute time adaptations to be able to end the study⁹⁶. Data gathering had a sudden end and could not be continued throughout the last term. The uncertainty of an upcoming pandemic and the challenges and difficulties that unanticipated online teaching implied for everybody needed extra efforts to be able to carry out my main duties as a teacher.

In a bid to provide extra clarification for the understanding of students' comments and performance, this study has highlighted my own personal perceptions of students' personalities⁹⁷. Seeking to be both, researcher and teacher was a difficult challenge. My role as a teacher was sometimes in conflict since I could not exclusively be focused on gathering and analysing data. Not only was I focused on bringing students to understand the importance of good spelling whilst teaching spelling strategies, but also I was teaching

⁹⁶ It was not possible to conduct self and peer assessment questionnaires in the last Social Science unit of this study. However, the initial date proposed for these questionnaires was used to carry out beliefs and spelling tests that were crucial for the results of this study.

⁹⁷ I was the class teacher for all groups of students for two academic years. My perceptions on students' personalities are based on the evidence observed in class and comments made by other teachers in the evaluation meetings. They are also based on parent-teacher meetings.

contents in a foreign language. Furthermore, I was involved in enhancing students' well-being by trying to create a relaxed and inviting learning atmosphere. On this account, the teacher in me led me to explain quantitative results in this study in a big picture coloured by meaningful qualitative data gathered from observation and experience. This has given me a new prospect of my role as a researcher with the emphasis on how students learn best rather than on my own teaching being the focal point.

A natural progression of this study is to carry out more scientific studies in other schools and levels to fully understand the implications of the NLP spelling strategies in CLIL contexts. The study may be repeated in other schools in the area of *Madrid* to provide more definite evidence in the positive results of NLP spelling instruction in CLIL contexts. Considerably more work might be done to determine the effect that beliefs and learning styles have in terms of spelling performance and as a source for understanding students own perceptions as learners in a longitudinal study. Finally, further research is needed to better understand the challenges that students with specific learning difficulties face in bilingual schools. Greater efforts are also needed to ensure that more studies focus on students with specific reading and writing difficulties, such as dyslexia, that are learning to read and write in two languages at the same time.

CHAPTER 9. REFERENCES

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APPENDICES

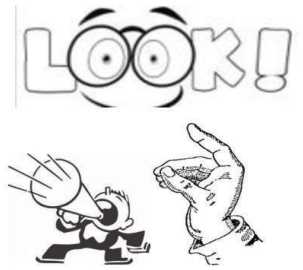

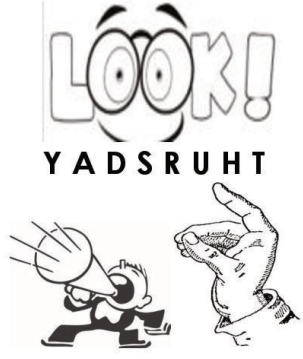
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1. MAIN STUDY: NLP SPELLING STRATEGY 1




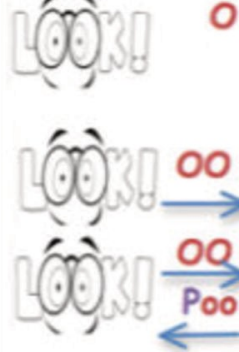
STRATEGY 1: I CAN SEE WORDS IN MY MIND!!!!!!!

<p>STEP 1</p> <p>CHOOSE A WORD FROM THE LIST OF WORDS</p> <p>👁️ As you SEE each letter, say it out loud forward.</p> <p>👉 Snap your fingers at each letter you say.</p> <p>Repeat.</p>	<p>WORD: THURSDAY</p> 
<p>STEP 2</p> <p>👁️ Look somewhere else in the room (don't look at the word).</p> <p>👁️ SEE THE LETTERS IN YOUR MIND!!!!</p> <p>👁️ Put the letters in your favourite colour (big and small).</p> <p>👁️ SAY the letters you SEE in your mind out loud.</p> <p>👉 Snap your fingers at each letter you say.</p> <p>Repeat.</p>	
<p>STEP 3</p> <p>👁️ Look back at the paper.</p> <p>👁️ SEE and SAY all the letters BACKWARDS.</p> <p>👉 Snap your fingers at each letter you say.</p> <p>Repeat.</p>	

<p>STEP 4</p> <ul style="list-style-type: none">👁️ Look somewhere else in the room (you can close your eyes to concentrate).👁️ SEE THE LETTERS IN YOUR MIND BACKWARDS!!!!👁️ Put the letters in your favourite colour (big and small).👁️ SAY THEM BACKWARDS.👁️ Snap your fingers at each letter you say. <p>Repeat.</p>	 <p>YADSRUHT</p>  <p>YADSRUHT</p> 
<p>STEP 5</p> <ul style="list-style-type: none">✕ Close your eyes.🗣️ Say the word.✍️ Spell it forward.	  <p>THURSDAY</p>
<p>STEP 6</p> <p>WRITE THE WORD IN A PAPER (OR WHITEBOARD)</p>	

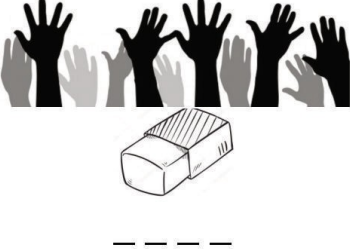
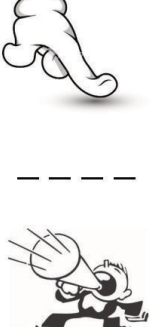

1B. PILOT STUDY: NLP SPELLING STRATEGY WEEK 2

STRATEGY 2: PLAY THIS GAME: PRETEND YOU ARE A TEACHER!

<p>1.</p> <p>✓ Select a word with an odd number of letters (3, 5 or 7 letters) from the list given this week. (i.e., spoon).</p>	<p>SPOON</p>
<p>2.</p> <p>✎ Wiggle your fingers in front of your eyes.</p> <p>✎ Move off to look at the word little by little.</p>	
<p>3.</p> <p>👁️ Look at the middle letter' (i.e., "O" of spOon).</p>	
<p>4.</p> <p>👁️ As you look at the middle letter, (O), at the same time, look at the letters to the right (you see OON).</p>	
<p>5.</p> <p>👁️ As you look at the middle letter (O).</p> <p>👁️ See the letter to the right (O).</p> <p>👁️ At the same time, see the letter to the left (P).</p>	
<p>6. Continue the process, going from right to left until the word is completed.</p> <p style="text-align: center;">➔</p>	








2. MAIN STUDY: NLP SPELLING STRATEGY TERM 2

STRATEGY 2: PLAYING CRAZY HANGMAN!!

<p>STEP 1 CHOOSE A WORD FROM THE LIST OF WORDS</p> <ul style="list-style-type: none"> ✍ Write a word on your whiteboard or paper. ✍ <u>Underline</u> each letter. 	<p style="text-align: center;"><u>S</u> <u>I</u> <u>G</u> <u>N</u></p>
<p>STEP 2</p> <ul style="list-style-type: none"> 👁 Look at the word. ✓ Memorize each letter and the letter on each side. Try to memorize it! 	<p style="text-align: center;">LOOK</p> <p style="text-align: center;"><u>S</u> - <u>I</u> - <u>G</u> - <u>N</u></p>
<p>STEP 3</p> <ul style="list-style-type: none"> 👋 Tell the teacher (or partner) that you have memorized the word by raising your hand (or nodding your head). ✗ Erase the letters leaving the dashes. 	
<p>STEP 4</p> <ul style="list-style-type: none"> 🗣 Ask a friend to point to each dash (IN ORDER FROM LEFT TO RIGHT). 🗣 SEE the letters AND SAY them out loud. 	
<p>STEP 5</p> <p>Once you have memorized the word:</p> <ul style="list-style-type: none"> 👉 Point at each dash randomly. 🗣 Say the letters out loud until you complete the word. <p>WRITE THE WORD IN A PAPER (OR WHITEBOARD)</p>	<p style="text-align: center;">-----</p> 

2B. PILOT STUDY: NLP SPELLING STRATEGY WEEK 4

STRATEGY 4: PLAY THIS GAME: PRETEND YOU ARE A TEACHER

<p>1.</p> <p>✍ Write TWO words on your whiteboard.</p> <p>✍ Underline each letter.</p>	<p>T R A F F I C S I G N</p>
<p>2.</p> <p>👁 Look at the board and memorize each letter and the letter on each side.</p> <p>Try to memorize it!</p> 	<p>LOOK T R A F F I C S I I G G N</p>
<p>3.</p> <p>✂ Erase the letters leaving the dashes.</p>	<p>----- -----</p>
<p>4.</p> <p>👉 Ask someone in your family to point to each dash (IN ORDER FROM LEFT TO RIGHT).</p> <p>🗣 Say the letters out loud.</p> 	 <p>-----</p> 
<p>5.</p> <p>✓ When you know the word, memorize the number of letters (dashes).</p>	
<p>6.</p> <p>👉 Point at each dash randomly.</p> <p>🗣 Say the letters out loud until you have the whole word.</p>	 <p>-----</p> 

3. LEARNING CHANNEL PREFERENCE CHECKLIST (LCPC)

TEST PARA DETERMINAR EL CANAL DE APRENDIZAJE DE PREFERENCIA
(ADAPTADO DE LYNN O'BRIEN, 1990)

NOMBRE: _____

Lee cuidadosamente cada oración y piensa de qué manera se aplica a TI. Recuerda que no hay respuestas correctas o incorrectas 😊

GROUP V	CASI SIEMPRE	FRECUENTEMENTE	A VECES	RARA VEZ	CASI NUNCA
1. Puedo recordar algo mejor si lo escribo.					
5. Puedo ver imágenes en mi cabeza.					
9. Tomo muchas notas de lo que leo y escucho.					
10. Me ayuda mirar a la persona que está hablando. Me mantiene enfocado.					
11. Se me hace difícil entender lo que una persona está diciendo si hay ruidos alrededor.					
16. Es más fácil para mí hacer un trabajo en un lugar tranquilo.					
17. Me resulta fácil entender la información organizada en mapas, tablas o gráficos.					
22. Cuando estoy concentrado/a leyendo o escribiendo, la radio me molesta.					
26. Cuando estoy en un examen, puedo ver en mi cabeza la página en el libro y la respuesta.					
27. No puedo recordar una broma lo suficiente para contarla luego.					
32. Cuando estoy tratando de recordar algo nuevo, por ejemplo, un número de teléfono, me ayuda una imagen mental para lograrlo.					
36. Cuando tengo una gran idea, debo escribirla inmediatamente o la olvido con facilidad.					

**TEST PARA DETERMINAR EL CANAL DE APRENDIZAJE DE PREFERENCIA
(ADAPTADO DE LYNN O'BRIEN, 1990)**

GROUP A	CASI SIEMPRE	FRECUENTEMENTE	A VECES	RARA VEZ	CASI NUNCA
2. Al leer, oigo las palabras en mi cabeza o leo en voz alta.					
3. Necesito hablar las cosas para entenderlas mejor.					
12. Prefiero que alguien me diga cómo tengo que hacer las cosas que leer las instrucciones.					
13. Prefiero escuchar una grabación a leer un libro.					
15. Puedo seguir fácilmente a una persona que está hablando aunque mi cabeza esté hacia abajo o me encuentre mirando por una ventana.					
19. Recuerdo mejor lo que la gente dice que su aspecto.					
20. Recuerdo mejor si estudio en voz alta con alguien.					
23. Me resulta difícil crear imágenes en mi cabeza.					
24. Me resulta útil decir en voz alta las tareas que tengo que hacer.					
28. Al aprender algo nuevo, prefiero escuchar la información, luego leer y luego hacerlo.					
29. Me gusta completar una tarea antes de comenzar otra.					
33. Para obtener una nota extra, prefiero grabar una nota de voz a escribirlo.					

**TEST PARA DETERMINAR EL CANAL DE APRENDIZAJE DE PREFERENCIA
(ADAPTADO DE LYNN O'BRIEN, 1990)**

GROUP K	CASI SIEMPRE	FRECUE- NTE	A VECES	RARA VEZ	CASI NUNCA
4. No me gusta leer o escuchar instrucciones, prefiero simplemente comenzar a hacer las cosas.					
6. Puedo estudiar mejor si escucho música.					
7. Necesito recreos frecuentes cuando estudio.					
8. Pienso mejor cuando tengo la libertad de moverme, estar sentado en una mesa no es para mí.					
14. Cuando no puedo pensar en una palabra específica, uso mis manos y lo llamo 'cosa'.					
18. Cuando comienzo un libro me gusta ojear las páginas, incluso la última.					
21. Tomo notas, pero nunca vuelvo a releerlas.					
25. Mi cuaderno y mi escritorio son un desastre pero sé perfectamente dónde está cada cosa.					
30. Uso mis dedos para contar y muevo los labios cuando leo.					
31. No me gusta releer mi trabajo.					
34. Fantaseo en clase.					
35. Para obtener una calificación extra, prefiero crear un proyecto a escribir un texto.					

**TEST PARA DETERMINAR EL CANAL DE APRENDIZAJE DE PREFERENCIA
(ADAPTADO DE LYNN O'BRIEN, 1990)**

¡OPCIONAL!

Ahora suma tus respuestas en cada grupo. Para ello asigna 5 puntos a tus respuestas casi siempre, 4 puntos a frecuentemente, 3 puntos para a veces, 2 puntos a rara vez y 1 punto a casi nunca.

Mira el siguiente ejemplo:

GROUP K	CASI SIEMPRE	FRECUENTEMENTE	A VECES	RARA VEZ	CASI NUNCA
4. No me gusta leer o escuchar instrucciones, prefiero simplemente comenzar a hacer las cosas.	X = 5				
6. Puedo estudiar mejor si escucho música.		X = 4			

Según las respuestas del ejemplo 5 puntos de casi siempre y 4 puntos de frecuentemente suman 9. Si este fuera todo el test, el total del grupo serían 9, pero como hay más frases haz lo mismo en cada respuesta: dale una puntuación a cada respuesta y suma todas las columnas. Así obtendrás la puntuación total del grupo. Apunta tu respuesta:

TOTAL GRUPO V: _____ puntos

TOTAL GRUPO A: _____ puntos

TOTAL GROUP K: _____ puntos

Ahora suma todos los puntos y obtendrás el total de los 3 grupos.

Apunta tu respuesta:

TOTAL DE LOS 3 GRUPOS: _____ PUNTOS

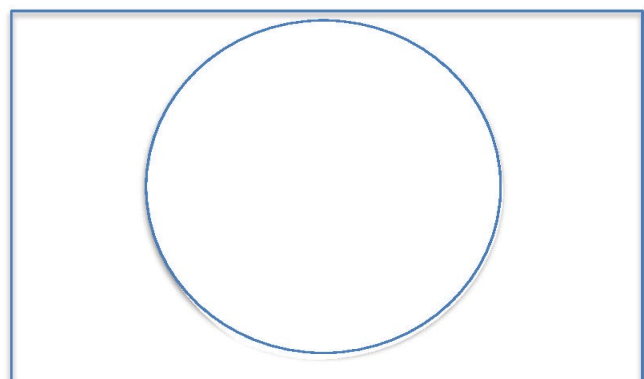
Si conviertes cada categoría en un porcentaje, (pide ayuda a papá y mamá), obtendrás la forma en la que mejor aprendes ya que cada grupo indica cómo de visual, auditivo o kinestésico eres cuando estás aprendiendo. Esta información nos ayuda a saber cómo presentar mejor la información y que la puedas aprender mejor 😊

VISUAL = $\frac{\text{TOTAL GRUPO V}}{\text{TOTAL 3 GRUPOS}}$ = _____ %

AUDITIVO = $\frac{\text{TOTAL GRUPO A}}{\text{TOTAL 3 GRUPOS}}$ = _____ %

KINESTÉSICO = $\frac{\text{TOTAL GRUPO K}}{\text{TOTAL 3 GRUPOS}}$ = _____ %

¡Puedes incluso hacer tu propio gráfico! 😊



4. ASSESSING STUDENTS' BELIEFS ABOUT LEARNING SPELLING IN CLIL CONTEXTS THROUGH NLP

NAME: _____
 DATE: _____
 2B Group

1. I think this strategy helps me to be a good speller in English. <i>Pienso que esta estrategia me ayuda a escribir bien en inglés.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

2. I believe that using this strategy is fun and interesting. <i>Creo que usar esta estrategia es divertido e interesante.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

3. I believe that this strategy helps me to concentrate well when learning the spelling of words in English. <i>Creo que esta estrategia me ayuda a concentrarme bien cuando aprendo a escribir palabras en inglés.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

4. I think this strategy helps me to learn the spelling of difficult words in English. <i>Pienso que esta estrategia me ayuda a aprender como escribir palabras difíciles en inglés.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

5. I think this strategy is simple and easy to use. <i>Pienso que esta estrategia es simple y fácil de usar.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

6. I believe that this strategy motivates me to learn the spelling of words in English. <i>Creo que esta estrategia me motiva a aprender cómo se escriben las palabras en inglés.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

7. I think that using this strategy to learn the spelling of words in English gives me more confidence with the language. <i>Pienso que usando esta estrategia para aprender a escribir palabras en inglés me da más confianza con el idioma</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

Source: Adapted and translated from Nahari, A. A., & Alfadda, H. A. (2016)

Number of statement in this study's questionnaires	Relation to Nahari and Alfadda (2016) statements
1	1
2	2
3	3
4	4
5	7
6	8
7	9

NAME: _____

DATE: _____

2A group

1. I think that copying words helps me to be a good speller in English. <i>Pienso que copiar palabras me ayuda a escribir bien en inglés.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

2. I believe that copying words is fun and interesting. <i>Creo que copiar palabras es divertido e interesante.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

3. I believe that copying words helps me to concentrate well when learning the spelling of words in English. <i>Creo que copiar palabras me ayuda a concentrarme bien cuando aprendo a escribir palabras en inglés.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

4. I think that copying words helps me to learn the spelling of difficult words in English. <i>Pienso que copiar palabras me ayuda a aprender como escribir palabras difíciles en inglés.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

5. I think that copying words is simple and easy to use. <i>Pienso que copiar palabras es simple y fácil de usar.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

6. I believe that copying words motivates me to learn the spelling of words in English. <i>Creo que copiar palabras me motiva a aprender cómo se escriben las palabras en inglés.</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

7. I think that copying words to learn the spelling of words in English gives me more confidence with the language. <i>Pienso que copiar para aprender a escribir palabras en inglés me da más confianza con el idioma</i>				
OF COURSE!	YES!	IDON'T KNOW...	NO	OF COURSE NOT!

Source: Adapted and translated from Nahari, A. A., & Alfadda, H. A. (2016)

Number of statement in this study's questionnaires	Relation to Nahari and Alfadda (2016) statements
1	1
2	2
3	3
4	4
5	7
6	8
7	9

5. VISUALS USED WHILST ANSWERING THE BELIEFS TEST AND SELF AND PEER ASSESSMENT QUESTIONNAIRES

WHAT DO YOU THINK ABOUT SPELLING???					
OF COURSE!! 5	YES! 4	I DON'T KNOW 3	NO 2	OF COURSE NOT!! 1	SCORE:
					

6. WRITE A LETTER TO YOUR TEACHER

Write a letter to your teacher and tell me how you feel in school. You can write about whatever you like. These are some ideas you can write about:

Escribe un carta a tu profesora y cuéntame como te sientes en el cole. Puedes escribir sobre lo que quieras. Estas son algunas ideas sobre las que puedes escribir:

1. Write about how you learn best and share it with me. Which activities do you enjoy the most? Which activities do you enjoy the least?

Escribe sobre cómo aprendes mejor y compártelo conmigo. ¿Qué actividades disfrutas más? ¿Qué actividades disfrutas menos?

2. Write about something that makes you happy or something you are proud of.

Escribe sobre algo que te haga feliz o algo de lo que te sientas orgulloso u orgullosa.

3. Write about the things that worry you in class or at school.

Escribe sobre algo que te preocupa en clase o en el colegio.

4. Write about how you feel learning to read and write in English.

Escribe sobre cómo te sientes aprendiendo a leer y escribir en inglés.

5. Write about the themes that you would like to learn about.

Escribe sobre los temas que te gustaría aprender.

You can write in Spanish! ¡Puedes escribir en español! 😊

My name is:

Dear Teacher,

Querida profesora,

7. PEER AND SELF-EVALUATION RUBRIC

EXPERIMENTAL'S GROUP PEER EVALUATION RUBRIC

NAME: _____ DATE: _____

From the list we practised, we can correctly spell... De la lista que hemos practicado puedo escribir (deletrar) correctamente...					
More than 5 words	5 words	3-4 words	2-1 words	0 word	SCORE:
5 points	4 points	3 points	2 points	1 points	

We can use the visual spelling strategy to spell words from Natural and Social Sciences in English Podemos utilizar la estrategia visual de la ortografía para escribir (deletrar) palabras de ciencias naturales y sociales en inglés					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

We can stay focused and on task Podemos estar concentrados y en la tarea					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

When we work together we can speak English during the activity Cuando trabajamos juntos podemos hablar en inglés durante la actividad					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

We can write in English words that I could not write before Podemos escribir en inglés palabras que antes no podíamos escribir					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

TOTAL SCORE: MAX 25 POINTS - MIN 12 POINTS

I HAVE _____ POINTS IN THIS EVALUATION RUBRIC!! ☺

Other comments: (2 stars and a wish)

CONTROL'S GROUP SELF-EVALUATION RUBRIC

NAME: _____ DATE: _____

From the list I practised, I can correctly spell... De la lista que he practicado puedo escribir (deletrar) correctamente...					
More than 5 words	5 words	3-4 words	2-1 words	0 word	SCORE:
5 points	4 points	3 points	2 points	1 points	

I can copy correctly words from Natural and Social Sciences in English Puedo copiar correctamente palabras de ciencias naturales y sociales en inglés					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

I can stay focused and on task Puedo estar concentrado y en la tarea					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

When I work with a partner I can speak English during the activity Cuando trabajo con un compañero/a puedo hablar en inglés durante la actividad					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

I can write in English words that I could not write before Puedo escribir en inglés palabras que antes no podía escribir					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

TOTAL SCORE: MAX 25 POINTS - MIN 12 POINTS

I HAVE _____ POINTS IN THIS EVALUATION RUBRIC!! 😊

Other comments: (2 stars and a wish)

CONTROL'S GROUP PEER EVALUATION RUBRIC

NAME: _____ DATE: _____

From the list we practised, we can correctly spell... De la lista que hemos practicado puedo escribir (deletrar) correctamente...					
More than 5 words	5 words	3-4 words	2-1 words	0 word	SCORE:
5 points	4 points	3 points	2 points	1 points	

We can copy correctly words from Natural and Social Sciences in English Podemos copiar correctamente palabras de ciencias naturales y sociales en inglés					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

We can stay focused and on task Podemos estar concentrados y en la tarea					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

When we work together we can speak English during the activity Cuando trabajamos juntos podemos hablar en inglés durante la actividad					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

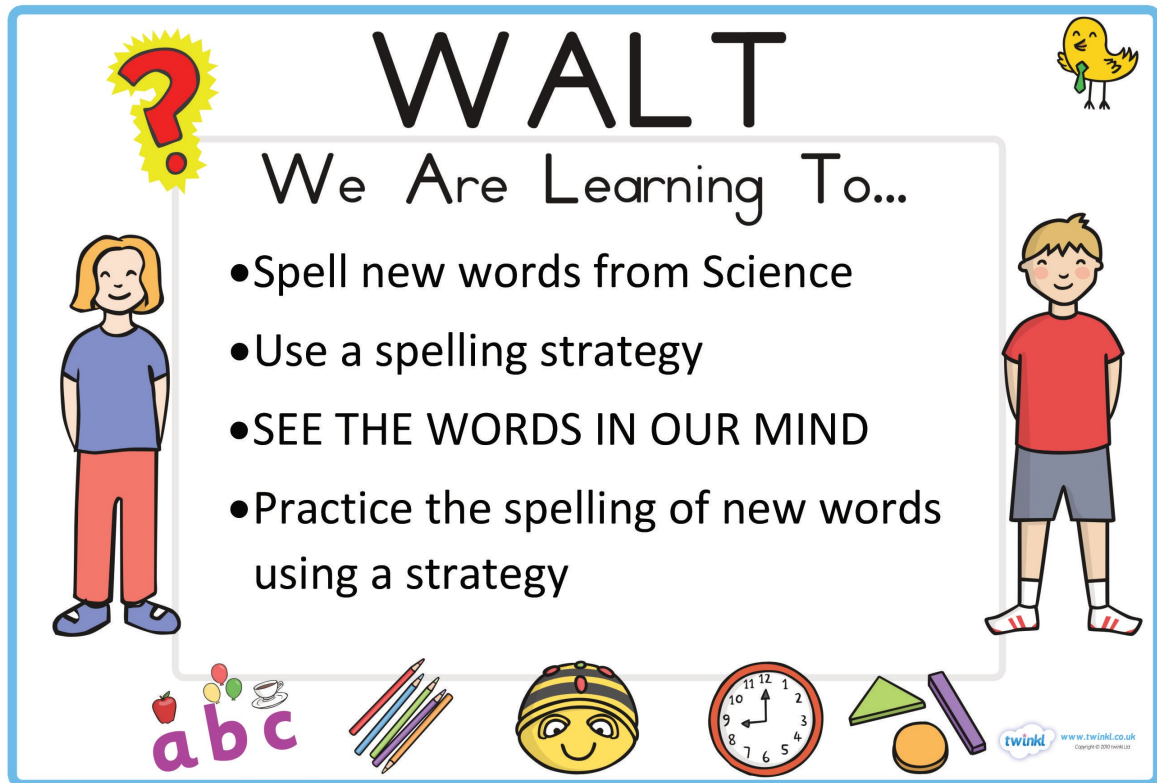
We can write in English words that I could not write before Podemos escribir en inglés palabras que antes no podíamos escribir					
OF COURSE!	YES!	I DON'T KNOW...	NO	OF COURSE NOT!	SCORE:
5 points	4 points	3 points	2 points	1 points	

TOTAL SCORE: MAX 25 POINTS - MIN 12 POINTS

I HAVE _____ POINTS IN THIS EVALUATION RUBRIC!! ☺

Other comments: (2 stars and a wish)

8. WALT AND WILF POSTERS



WALT

We Are Learning To...

- Spell new words from Science
- Use a spelling strategy
- SEE THE WORDS IN OUR MIND
- Practice the spelling of new words using a strategy

The poster features a large red question mark in a yellow starburst at the top left. On the left is a cartoon girl with blonde hair, a blue shirt, and red pants. On the right is a cartoon boy with blonde hair, a red shirt, and grey shorts. At the top right is a small yellow bird. At the bottom, there are several icons: 'abc' with a red apple, a green apple, and a yellow banana; four colored pencils; a yellow smiley face with a headband; a round clock face; a green triangle, a purple pencil, and an orange circle. The Twinkl logo and website URL are in the bottom right corner.



WILF

What I'm Looking For...

- Help each other to follow and use the spelling strategy
- Work as a team
- Speak English while practising
- Stay on task!

The poster features a large red question mark in a yellow starburst at the top left. On the left is a cartoon girl with blonde hair, a blue shirt, and red pants. On the right is a cartoon boy with blonde hair, a red shirt, and grey shorts. At the top right is a small yellow bird. At the bottom, there are several icons: 'abc' with a red apple, a green apple, and a yellow banana; four colored pencils; a yellow smiley face with a headband; a round clock face; a green triangle, a purple pencil, and an orange circle. The Twinkl logo and website URL are in the bottom right corner.

9. OBSERVATION RUBRIC AND FEEDBACK FOR THE TEACHER

OBSERVATION RUBRIC – NLP Spelling Strategies

Names: _____

Date: _____

Pair work evaluation. How did they do in collaboration?


ITEMS TO CHECK	Exceeds Exp.	Meets Exp.	Below Exp.	COMMENTS
Understand the strategy.				
Speaking softly.				
Listening and helping to each other.				
Taking turns.				
Stay on task.				
Ability to spell the words from memory.				
Speak English most of the time during the task. (Language required for the task: turn taking, etc.)				
Other observations (strong/weak students – additional support needed – clarifications – level of engagement – willingness towards writing, etc.):				


Feedback given by: _____.


Position at school (underline what corresponds): Language assistant / Student Teacher / Support Teacher

FEEDBACK ABOUT THE TEACHER NLP Spelling Strategies

Two stars and a wish: Please, kindly write two aspects that you think worked according to plan or things that the teacher did to support the activity. Write one aspect that you think I could improve in the future or other ideas to help me develop my plan. Your comments are very welcome! Your help is very important to me, thank you!

Feedback given by: _____		Date: _____
Position at school (underline what corresponds): Language assistant / Student Teacher / Support Teacher.		
	_____	

	_____	

	_____	Possible action to improve:
	_____	_____

10. PILOT STUDY: METHODOLOGICAL ADAPTATIONS FOR STUDENTS WITH SPECIAL NEEDS

Both are under medication and have improved in terms of behaviour and motivation towards schoolwork. With regards to subjects taught in English, they only need some methodological adaptations to follow the class:

- ✓ Highlighting important questions in the book/worksheets to help them focus their attention.
- ✓ Mind maps for Natural and Social Sciences contents.
- ✓ In very few occasions they need the instructions to be translated so they are able to follow with the task in English.
- ✓ These students are always paired with other students that are confident enough to help a friend during the task.
- ✓ When they feel frustrated or uneasy they are allowed to move in or outside the class through responsibilities.
- ✓ They both show low self-esteem so they are rewarded for little achievements.

11. PILOT STUDY: CLASSROOM MANAGEMENT

With both groups of students, I use ‘Class Dojo’ to manage classroom dynamics and behaviour. This is mainly used to motivate students to participate in the target language, complete assignments, work in groups, etc. Predominantly, students are rewarded for the efforts and improvements showed within the class context rather than for the final outcome. Even though this last is also awarded when the task and behaviour are outstanding.

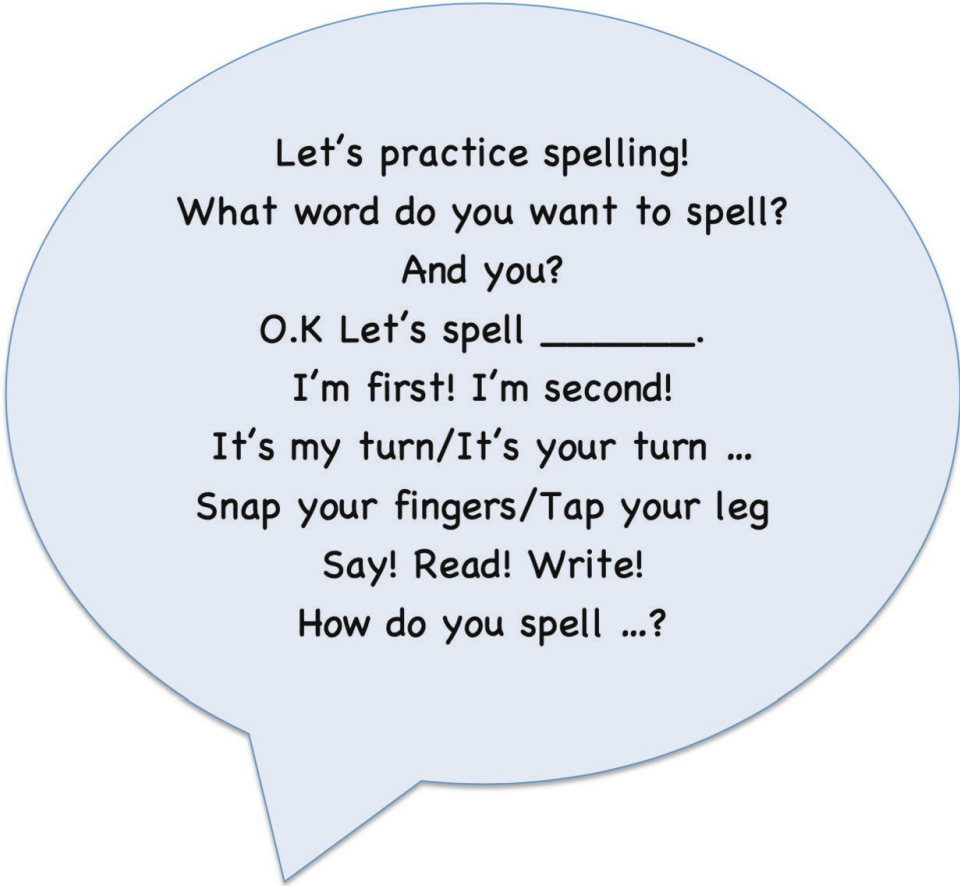
This way, I intend to enhance a positive attitude towards the learning of the second language and the risks taken along the process. On the other hand, this can also be used to discipline students by getting negative points for misbehaviour: too much talking, off seat, non-completion of tasks, etc. One of the classroom mechanics for these matters is to put on the table a yellow/red dot as two warnings before getting a negative point on the board. They usually react in consequence or at least try for some time. This not only prevents me from stopping the class, but also gives students a chance to change their behaviour. Parents have access to their children reports and comments made by their teachers. They have been asked to give credit and value to their children’s achievements, which they actually do in many cases.

In addition to this, students in my class tend struggle to maintain a critical approach towards their learning and performance. For this reason, several strategies for self and peer-assessment have been included in the classroom dynamics. Furthermore, students, in general terms, express themselves adequately in their L1 and maintain a good progress on Literacy skills. Even though this fact certainly helps to the acquisition of the second language, students tend to show inferences with Spanish and specifically in written tasks.

12. USEFUL LANGUAGE DISPLAYED DURING TASKS

USEFUL LANGUAGE

LANGUAGE YOU CAN USE TO WORK TOGETHER 😊



Let's practice spelling!
What word do you want to spell?
And you?
O.K Let's spell _____.
I'm first! I'm second!
It's my turn/It's your turn ...
Snap your fingers/Tap your leg
Say! Read! Write!
How do you spell ...?











INSTRUCTIONS:

- ✓ DON'T FORGET WALT AND WILF POSTERS
- ✓ HAVE FUN! 😊











13. PEER AND SELF-ASSESSMENT PILOT STUDY

Quick Peer Evaluation

NAMES: _____ WEEK 2 Natural Sc. / Week 4 Social Sc.

	YES	NO
1. We practised 3-4 new words using this strategy.		
2. We helped and collaborated with each other.		
3. We stayed on task.		
4. We tried to speak English while practising.		
5. Can you spell new words from Natural/Social Sciences using this strategy?		
List of words that you practised using STRATEGY _____.	1. _____ 2. _____ 3. _____ 4. _____	
Next time we could improve at: You can write in Spanish ☺		

Quick Self-Evaluation

WEEK 2 Natural/ WEEK 4 Social Sciences		
NAME: _____	YES	NO
1. I practised 3-4 new words using this strategy.		
2. I helped and collaborated with my partner.		
3. I stayed on task.		
4. I did MY BEST to practise the spellings using English.		
5. I can spell words from Social Sciences using a visual strategy.		
Next time I could do better (You can write in Spanish ☺)		

14. RESULTS OF THE PILOT STUDY IN SPELLING TESTS

EXPERIMENTAL SS #	WEEK 2		WEEK 3	WEEK 4 NLP
	WEEK 1	NLP		
#1 G. A.J.	5,00	5,83	4,14	5
#2 D. B.	4,17	3,3	3,33	6,67
#3 L.B.	5,83	6,67	5	5
#4 M. D.	6,67	5,83	5,83	5,00
#5 I. D	7,50	9,2	3,33	5,83
#6 P. D	9,17	10	10	10,00
#7 S. G.	8,33	10	9,17	10,00
#8 A. G.	9,17	7,5	9,17	9,17
#9 S. G.	9,17	10	7,5	10,00
#10 J. G.	10,00	8,33	8,33	7,50
#11 O. G.	8,33	7,5	5	6,67
#12 Y. H.	3,33	2,5	3,33	5,00
#13 R. L.	8,33	6,67	3,33	4,17
#14 N. M.	9,17	9,17	10	7,50
#15 I. M.	8,33	9,17	5,83	5,83
#16 A. O.	8,33	8,33	6,67	6,67
#17 L. V.	5,00	5,83	4,17	6,67
#18 M. P.	5,83	5	4,17	9,17
#19 J. P.	0,83	1,67	4,17	5,00
#20 M. P.	5,00	5,83	5	7,50
#21 Á. P.	6,67	6,67	7,5	7,50
#22 P. P.	7,50	10	9,17	9,17
#23 T. R.	5,00	10	6,67	9,17
#24 A. S.	9,17	10	9,17	10,00
#25 D. V.	7,50	6,67	5	5,00
AVG	6,93	7,27	6,20	7,17

CONTROL SS #	WEEK 1	WEEK 2	WEEK 3	WEEK 4
#1 G. AL.	8,33	5,00	5,83	5,00
#2 I. B.	5,83	6,67	7,5	5,00
#3 D. B.	7,50	7,50	9,17	6,67
#4 A. C.	8,33	6,67	10	5,00
#5 AL. C.	7,50	6,67	5,83	0,83
#6 A. F.	8,33	6,67	5,83	3,33
#7 I. G.	2,50	0,83	0	2,50
#8 Y. H.	7,50	6,67	5	3,33
#9 N. H.	5,83	1,67	1,67	1,67
#10 D. J.	8,33	5,00	5	5,00
#11 D. M.	6,67	0,83	2,5	5,00
#12 P. M.	7,50	3,33	3,33	4,17
#13 Ó. M.	8,33	0,00	2,5	4,17
#14 H. M.	10,00	7,50	8,33	4,17
#15 C. M.	7,50	4,17	5,83	5,00
#16 H. H.	10,00	8,33	10	8,33
#17 A. P.	10,00	9,17	10	8,33
#18 C. R.	9,17	9,17	9,17	6,67
#19 H. S.	7,50	7,50	6,67	5,83
#20 M. S.	5,83	5,00	3,33	3,33
#21 J.G.T.	10,00	9,17	10	8,33
#22 Á. V.	10,00	9,17	0	4,17
#23 Al. V.	6,67	8,33	9,17	7,50
#24 P. Z.	8,33	8,33	2,5	5,00
#25 J. Z.	9,17	9,17	9,17	8,33
AVG	7,97	6,10	5,93	5,00

15. RESULTS OF THE PILOT STUDY IN BELIEFS TEST

WEEK 1 How do you feel about your spelling? 8th April 2016			
2B Experimental Group	BRILLIANT	GOOD	NEED TO IMPROVE
	16	8	1
2A Control Group	BRILLIANT	GOOD	NEED TO IMPROVE
	17	7	1

WEEK 3 How do you feel about your spelling? 22nd / 25th April 2016			
2B Experimental Group	BRILLIANT	GOOD	NEED TO IMPROVE
	9	11	5
2A Control Group	BRILLIANT	GOOD	NEED TO IMPROVE
	16	6	2

WEEK 2 How do you feel about your spelling? 15th 18th April 2016			
2B Experimental Group	BRILLIANT	GOOD	NEED TO IMPROVE
	23	1	1
2A Control Group	BRILLIANT	GOOD	NEED TO IMPROVE
	12	10	2

WEEK 4 How do you feel about your spelling? 29th April 2016			
2B Experimental Group	BRILLIANT	GOOD	NEED TO IMPROVE
	8	14	3
2A Control Group	BRILLIANT	GOOD	NEED TO IMPROVE
	14	10	1

16. RESULTS OF THE CONTROL GROUP IN SPELLING TESTS TERM 1

CONTROL GROUP: NATURAL SCIENCE UNIT 1 SPELLING TEST					
STUDENT	Crazy Sp, test Natural Sciences Unit 1	Nota 03/10	Final Spelling test Unit 1	Final test U1 06/11	Classification
1	0	0	8	6.67	Average
2	3	2.5	12	10.00	Exceeding
3	0	0	0	0.00	Poor
4	0	0	0	0.00	Poor
5	0	0	11	9.17	Exceeding
6	0	0	0	0.00	Poor
7	0	0	4	3.33	Poor
8	0	0	0	0.00	Poor
9	0	0	9	7.50	Successful
10	0	0	0	0.00	Poor
11	1	0.83	12	10.00	Exceeding
12	0	0	0	0.00	Poor
13	0	0	4	3.33	Poor
14	0	0	2	1.67	Poor
15	0	0	3	2.50	Poor
16	0	0	1	0.83	Poor
17	0	0	1	0.83	Poor
18	0	0	2	1.67	Poor
19	0	0	2	1.67	Poor
20	0	0	4	3.33	Poor
21	2	1.67	12	10.00	Exceeding
22	0	0	8	6.67	Average
23	0	0	0	0.00	Poor
24	0	0	11	9.17	Exceeding
AV				3.68	Poor

Poor	Risk	Average	Successful	Exceeding
16	0	2	1	5

CONTROL GROUP: NATURAL SCIENCE UNIT 2 SPELLING TESTS							
STUDENT	Crazy sp, test Unit 2	26/11	Final sp test Unit 2	Final test U2 05/12	3 extra words Unit 2	Final test U2 15 words norm.	Classification
1	2	1.67	7	5.83	2	6.00	Average
2	7	5.83	12	10.00	3	10.00	Exceeding
3	0	0.00	0	0.00	0	0.00	Poor
4	0	0.00	0	0.00	2	1.33	Poor
5	4	3.33	9	7.50	2	7.33	Average
6	0	0.00	4	3.33	2	4.00	Poor
7	0	0.00	4	3.33	3	4.67	Poor
8	0	0.00	0	0.00	2	1.33	Poor
9	0	0.00	5	4.17	3	5.33	Risk
10	0	0.00	0	0.00	1	0.67	Poor
11	1	0.83	11	9.17	3	9.33	Exceeding
12	0	0.00	0	0.00	0	0.00	Poor
13	0	0.00	7	5.83	2	6.00	Average
14	1	0.83	5	4.17	2	4.67	Poor
15	0	0.00	5	4.17	2	4.67	Poor
16	0	0.00	1	0.83	2	2.00	Poor
17	0	0.00	0	0.00	1	0.67	Poor
18	1	0.83	6	5.00	2	5.33	Risk
19	0	0.00	4	3.33	2	4.00	Poor
20	1	0.83	6	5.00	3	6.00	Average
21	6	5.00	11	9.17	3	9.33	Exceeding
22	1	0.83	5	4.17	2	4.67	Poor
23	0	0.00	0	0.00	0	0.00	Poor
24	3	2.50	7	5.83	3	6.67	Average
AV						4.33	Poor

Poor	Risk	Average	Successful	Exceeding
14	2	5	0	3

CONTROL GROUP SOCIAL SCIENCE UNIT 1 SPELLING TEST					
STUDENT	Crazy Sp test Unit 1 Social Sc	Crazy sp test 1 06/11	Final Sp test 1	Final test U1 22/11	Classification
1	1	0.83	11	9.17	Exceeding
2	7	5.83	11	9.17	Exceeding
3	0	0	0	0.00	Poor
4	0	0	2	1.67	Poor
5	4	3.33	11	9.17	Exceeding
6	1	0.83	4	3.33	Poor
7	1	0.83			Poor
8	0	0	7	5.83	Risk
9	3	2.5	10	8.33	Successful
10	0	0	8	6.67	Average
11	1	0.83	12	10.00	Exceeding
12	0	0	0	0.00	Poor
13	1	0.83	10	8.33	Successful
14	2	1.67	8	6.67	Average
15	1	0.83	9	7.50	Successful
16	0	0	1	0.83	Poor
17	1	0.83	2	1.67	Poor
18	1	0.83	3	2.50	Poor
19	0	0	10	8.33	Successful
20	3	2.5	11	9.17	Exceeding
21	7	5.83	12	10.00	Exceeding
22	3	2.5	7	5.83	Risk
23	1	0.83	2	1.67	Poor
24	2	1.67	11	9.17	Exceeding
AV				5.87	

Poor	Risk	Average	Successful	Exceeding
9	2	2	4	7

CONTROL GROUP: SOCIAL SCIENCE UNIT 2 SPELLING TEST							
STUDENT	Crazy sp, test 2 Unit 2	Crazy sp, test Unit 2 10/12	Final sp, test 2 Unit 2	Final test U2 17/12	3 extra words Unit 2	Final test U2 15 words norm.	Classification
1	2	1.67	8	6.67	2	6.67	Average
2	6	5	12	10	3	10.00	Exceeding
3	0	0	0	0	0	0.00	Poor
4	0	0	0	0	1	0.67	Poor
5	3	2.5	5	4.17	2	4.67	Poor
6	0	0	1	0.83	1	1.33	Poor
7	0	0	2	1.67	2	2.67	Poor
8	0	0	4	3.33	1	3.33	Poor
9	0	0	5	4.17	1	4.00	Poor
10	0	0	2	1.67	0	1.33	Poor
11	2	1.67	11	9.17	2	8.67	Successful
12	0	0	0	0	0	0.00	Poor
13	0	0	3	2.5	1	2.67	Poor
14	0	0	3	2.5	2	3.33	Poor
15	0	0	2	1.67	1	2.00	Poor
16	0	0	1	0.83	1	1.33	Poor
17	0	0	0	0	1	0.67	Poor
18	0	0	0	0	0	0.00	Poor
19	0	0	5	4.17	2	4.67	Poor
20	0	0	6	5	2	5.33	Risk
21	11	9.17	12	10	3	10.00	Exceeding
22	0	0	4	3.33	0	2.67	Poor
23	0	0	0	0	0	0.00	Poor
24	0	0	10	8.33	2	8.00	Successful
AV						3.50	Poor

Poor	Risk	Average	Successful	Exceeding
18	1	1	2	2

17. RESULTS OF THE CONTROL GROUP IN BELIEFS TESTS TERM 1

CONTROL GROUP: BELIEFS NAT										
STUDENTS	I think that copying words helps me to be a good speller	I believe that copying words is fun and interesting	I believe that copying words helps me to concentrate well when learning the spelling of words in English	I think that copying words helps me learn the spelling of difficult words in English	I think that copying words is simple and easy to use	I believe that copying words motivates me to learn the spelling of words in English	I think that copying words to learn the spelling of words in English gives me more confidence with the language	Average		
1	2	3	3	4	4	4	4	6.86	Coef. Correl. Pearson	0,27
2	3	1	4	2	5	3	4	6.29		
3	4	4	2	5	5	5	4	8.29		
4	4	4	5	5	4	5	4	8.86		
5	5	5	5	5	5	5	4	9.71		
6	5	5	5	5	5	5	4	9.71		
7	2	4	3	4	3	4	2	6.29		
8								0.00		
9	4	5	3	4	5	4	5	8.57		
10	4	5	4	5	4	5	5	9.14		
11	5	5	5	5	5	5	5	10.00		
12	1	4	5	3	3	4	4	6.86		
13	5	4	4	5	5	4	5	9.14		
14	5	5	5	5	5	5	5	10.00		
15	5	5	5	5	5	5	5	10.00		
16	5	2	4	5	5	4	5	8.57		
17								0.00		
18	4	4	2	5	5	5	4	8.29		
19	4	5	5	5	3	2	5	8.29		
20	5	5	4	5	5	5	5	9.71		
21	5	5	5	5	5	5	5	10.00		
22	5	5	5	5	5	4	4	9.43		
23	4	5	5	5	5	5	4	9.43		
24	5	5	5	5	5	5	5	10.00		
AV								8.06		

Statements	83%	86%	85%	93%	92%	89%	88%	88%	33%
	1	2	3	4	5	6	7	expected results	

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	13%	8%	8%	4%	0%	4%	4%	6%
I don't Know	4%	4%	13%	4%	13%	4%	0%	6%
Yes/Ofcourse Yes	75%	79%	71%	83%	79%	83%	88%	80%

Effectiveness of Strategy	92%	6
Passed Spelling Test	33%	6

CONTROL GROUP: BELIEFS NATURAL SCIENCE UNIT 2										
STUDENTS	I think that copying words helps me to be a good speller	I believe that copying words is fun and interesting	I believe that copying words helps me to concentrate well when learning the spelling of words in English	I think that copying words helps me learn the spelling of difficult words in English	I think that copying words is simple and easy to use	I believe that copying words motivates me to learn the spelling of words in English	I think that copying words to learn the spelling of words in English gives me more confidence with the language	average		
1	4	4	4	4	3	5	3	4	Coef. Correl. Pearson	0.03
2	5	1	3	2	5	1	4	6.00		
3	5	5	5	5	4	4	4	9.14		
4	4	5	4	5	4	4	4	8.57		
5	5	5	5	5	5	5	4	9.71		
6	4	4	5	4	4	4	4	8.29		
7	5	4	5	4	2	5	4	8.29		
8	4	5	5	4	2	5	5	8.57		
9	3	1	2	3	4	2	3	5.14		
10	4	5	4	4	4	5	4	8.57		
11	5	5	5	5	5	5	5	10.00		
12	3	4	4	3	5	4	4	7.71		
13	5	4	5	3	5	5	4	8.86		
14	5	5	5	5	4	5	4	9.43		
15	5	5	4	5	5	5	5	9.71		
16	5	2	5	4	4	5	1	7.43		
17	5	2	3	1	2	5	4	6.29		
18								0.00		
19	5	3	4	5	3	5	5	8.57		
20	5	5	5	5	5	5	5	10.00		
21	5	5	5	5	5	5	5	10.00		
22	4	5	4	5	4	5	4	8.86		
23	5	5	5	5	4	5	4	9.43		
24	5	4	5	4	5	5	5	9.43		
AV								8.15		

Statements	91%	81%	88%	82%	83%	88%	83%	85%	43%
	1	2	3	4	5	6	7	Expected Result	

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	0%	17%	4%	8%	13%	8%	4%	8%
I don't Know	8%	4%	8%	17%	4%	4%	4%	7%
Yes/Ofcourse Yes	88%	75%	83%	71%	79%	83%	88%	81%

Effectiveness of Strategy	92%	6
Passed Spelling Test	33%	6

CONTROL GROUP: BELIEFS SOCIAL SCIENCE UNIT 1

STUDENTS	I think that copying words helps me to be a good speller	I believe that copying words is fun and interesting	I believe that copying words helps me to concentrate well when learning the spelling of words in English	I think that copying words helps me learn the spelling of difficult words in English	I think that copying words is simple and easy to use	I believe that copying words motivates me to learn the spelling of words in English	I think that copying words to learn the spelling of words in English gives me more confidence with the language	Average	Coef. Correl. Pearson
1	4	4	5	4	5	4	4	8.57	0,27
2	4	2	3	1	5	2	1	5.14	
3	5	4	4	5	5	2	4	8.29	
4	4	4	5	5	4	5	4	8.86	
5	5	4	5	5	4	5	4	9.14	
6	4	5	4	4	4	5	4	8.57	
7								0.00	
8	5	4	4	4	5	4	5	8.86	
9	4	1	3	4	3	2	3	5.71	
10	4	5	5	5	5	5	4	9.43	
11	5	5	5	5	5	5	5	10.00	
12	4	4	5	5	4	5	3	8.29	
13	4	3	5	5	4	5	4	8.57	
14	5	5	5	5	4	5	5	9.71	
15	5	5	5	5	5	5	5	10.00	
16	5	5	5	5	4	1	4	8.29	
17	3	2	1	1	2	4	3	4.57	
18								0.00	
19	5	4	5	5	3	5	1	8.00	
20	5	5	5	5	4	5	5	9.71	
21	5	5	5	5	5	5	5	10.00	
22	4	5	5	4	5	5	5	9.43	
23								0.00	
24	4	5	5	5	5	5	4	9.43	
AV								7.44	

Statements	89%	82%	90%	87%	87%	83%	79%	85%	59%
	1	2	3	4	5	6	7	Expected Results	

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	0%	13%	4%	8%	4%	17%	8%	8%
I don't Know	4%	4%	8%	0%	8%	4%	8%	5%
Yes/Ofcourse Yes	83%	71%	75%	79%	75%	67%	71%	74%

Effectiveness of Strategy	75%	6
Passed Spelling Test	54%	6

CONTROL GROUP: BELIEFS SOCIAL SCIENCE UNIT 2

STUDENTS	I think that copying words helps me to be a good speller	I believe that copying words is fun and interesting	I believe that copying words helps me to concentrate well when learning the spelling of words in English	I think that copying words helps me learn the spelling of difficult words in English	I think that copying words is simple and easy to use	I believe that copying words motivates me to learn the spelling of words in English	I think that copying words to learn the spelling of words in English gives me more confidence with the language	Average	Coef. Correl. Pearson
1	3	3	4	4	5	4	4	7.71	0,34
2	5	1	5	2	5	3	5	7.43	
3	3	1	2	4	2	2	4	5.14	
4	5	5	5	5	4	5	5	9.71	
5	5	5	4	5	5	5	5	9.71	
6	4	5	5	5	5	5	5	9.71	
7	4	4	4	4	4	4	4	8.00	
8	4	3	4	4	4	3	3	7.14	
9	4	1	3	3	2	5	2	5.71	
10	4	5	4	5	4	5	5	9.14	
11	5	5	5	5	5	5	5	10.00	
12	3	3	3	2	3	4	3	6.00	
13	5	4	5	3	5	4	5	8.86	
14	5	5	5	5	4	5	5	9.71	
15	5	5	4	4	5	5	4	9.14	
16	5	4	5	5	5	5	4	9.43	
17	2	4	3	1	3	1	4	5.14	
18								0.00	
19	5	5	4	5	4	4	4	8.86	
20	5	5	5	5	5	5	5	10.00	
21	5	5	4	5	5	5	5	9.71	
22	5	4	4	5	4	5	4	8.86	
23	5	4	4	5	4	4	5	8.86	
24	5	4	5	3	5	3	5	8.57	
AV								8.02	

Statements	89%	79%	84%	82%	84%	84%	87%	84%	35%
	1	2	3	4	5	6	7	Expected Result	

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	4%	13%	4%	13%	8%	8%	4%	8%
I don't Know	13%	13%	13%	13%	8%	13%	8%	11%
Yes/Ofcourse Yes	79%	71%	79%	71%	79%	75%	83%	77%

Effectiveness of Strategy	83%	6
Passed Spelling Test	21%	6

18. RESULTS OF THE CONTROL GROUP IN SELF ASSESSMENT QUESTIONNAIRES TERM 1

CONTROL GROUP: NATURAL SCIENCE UNIT 1 SELF ASSESSMENT							
STUDENT	From the list I practised I can correctly spell,,,	I can use the visual spelling strategy to spell words from Natural and Social Sc	I can stay focused and on task	When I work with a partner I can speak English during the activity	I can write in English words that I could not write before	Total rubric	
1	3	4	5	4	3	7.6	
2	4	5	3	4	5	8.4	
3	3	4	5	3	2	6.8	
4	4	4	5	4	4	8.4	
5	5	5	5	4	5	9.6	
6						0	
7	4	5	4	5	5	9.2	
8	2	4	4	4	3	6.8	
9	3	4	2	2	4	6	
10	5	5	5	5	5	10	
11	4	4	4	2	4	7.2	
12	3	4	5	3	2	6.8	
13	4	5	5	4	5	9.2	
14	4	5	5	4	5	9.2	
15	5	5	5	5	5	10	
16	5	5	4	4	5	9.2	
17	5	4	4	3	5	8.4	
18			4			8	
19	4	4	3	3	5	7.6	
20	5	4	4	5	5	9.2	
21	5	4	5	5	5	9.6	
22	4	4	4	4	5	8.4	
23	2	2	3		4	5.5	
24	5	4	5	1	5	8	
	80%	85%	85%	74%	87%	82%	36%
Statements	1	2	3	4	5	Expected	Results

CONTROL GROUP: SOCIAL SCIENCE UNIT 1 SELF ASSESSMENT							
STUDENT	From the list I practised I can correctly spell,,,	I can use the visual spelling strategy to spell words from Natural and Social Sc	I can stay focused and on task	When I work with a partner I can speak English during the activity	I can write in English words that I could not write before	Total rubric	
1	4	4	5	4	5	8.80	
2	5	4	3	1	5	7.20	
3						0.00	
4	5	4	5	5	5	9.60	
5	5	5	5	5	5	10.00	
6						0.00	
7						0.00	
8	1	2	2	2	2	3.60	
9	5	4	3	3	5	8.00	
10	4	5	5	5	5	9.60	
11	5	5	5	5	5	10.00	
12	3	5	3	2	3	6.40	
13	3	4	5	4	5	8.40	
14	5	5	4	5	5	9.60	
15	5	3	4	1	5	7.20	
16	4	5	5	2	4	8.00	
17	3	4	2	3	1	5.20	
18						0.00	
19						0.00	
20	5	5	5	4	5	9.60	
21	5	5	5	5	5	10.00	
22	4	5	4	2	5	8.00	
23						0.00	
24	5	5	5	1	5	8.40	
	84%	88%	83%	66%	89%	62%	59%
Statements	1	2	3	4	5	opinion	spelling test

19. RESULTS OF THE CONTROL GROUP IN SPELLING TESTS TERM 2

CONTROL GROUP: NATURAL SCIENCE UNIT 3 SPELLING TEST							
STUDENTS	Crazy Sp. test Natural Sciences Unit 3	27/01	Final Spelling test Unit 3 27/01	27/01	+ 4 Extra 27/01	suma unidad 3	Classificatio n
1	0	0	11	9.17	3	9.33	Exceeding
2	7	5.83	12	10	3	10.00	Exceeding
3	0	0	0	0	0	0.00	Poor
4	0	0	2	1.67	0	1.33	Poor
5	0	0	10	8.33	3	8.67	Successful
6	0	0	2	1.67	0	1.33	Poor
7	0	0	8	6.67	2	6.67	Average
8	0	0	2	1.67	0	1.33	Poor
9	4	3.33	6	5	1	4.67	Poor
10	0	0	4	3.33	2	4.00	Poor
11	0	0	11	9.17	4	10.00	Exceeding
12	0	0	0	0	0	0.00	Poor
13	1	0.83	7	5.83	2	6.00	Average
14	0	0	10	8.33	2	8.00	Successful
15	0	0	5	4.17	2	4.67	Poor
16	0	0	2	1.67	0	1.33	Poor
17	0	0	0	0	0	0.00	Poor
18	0	0	6	5	0	4.00	Poor
19	0	0	7	5.83	4	7.33	Average
20	0	0	7	5.83	2	6.00	Average
21	9	7.5	12	10	4	10.67	Exceeding
22	0	0	8	6.67	2	6.67	Average
23	0	0	1	0.83	0	0.67	Poor
24	0	0	12	10	2	9.33	Exceeding
AV						5.08	Risk

Unidad 3

Poor	Risk	Average	Successful	Exceeding
12	0	5	2	5

CONTROL GROUP: NATURAL SCIENCE UNIT 4 SPELLING TEST							
STUDENTS	Crazy sp. test Unit 4 11/02		Final sp test Unit 4		3 extra words Unit 4	SUMA UNIDAD 4	Classificatio n
1	0	0	12	10	3	10.00	Exceeding
2	8	6.67	10	8.33	3	8.67	Successful
3	0	0	2	1.67	0	1.33	Poor
4	1	0.83	6	5	1	4.67	Poor
5	4	3.33	12	10	2	9.33	Exceeding
6	1	0.83	4	3.33	1	3.33	Poor
7	2	1.67	11	9.17	3	9.33	Exceeding
8	2	1.67	2	1.67	0	1.33	Poor
9	2	1.67	11	9.17	3	9.33	Exceeding
10	1	0.83	10	8.33	2	8.00	Successful
11	5	4.17	12	10	3	10.00	Exceeding
12	0	0	2	1.67	0	1.33	Poor
13	2	1.67	8	6.67	3	7.33	Average
14	2	1.67	7	5.83	3	6.67	Average
15	3	2.5	9	7.5	3	8.00	Successful
16	0	0	6	5	1	4.67	Poor
17	1	0.83	1	0.83	1	1.33	Poor
18	2	1.67	1	0.83	2	2.00	Poor
19	2	1.67	12	10	3	10.00	Exceeding
20	3	2.5	9	7.5	2	7.33	Average
21	10	8.33	12	10	3	10.00	Exceeding
22	3	2.5	11	9.17	3	9.33	Exceeding
23	0	0	0	0	1	0.67	Poor
24	0	0	12	10	3	10.00	Exceeding
AV						6.42	Average

Unidad 4

Poor	Risk	Average	Successful	Exceeding
9	0	3	3	9

CONTROL GROUP: SOCIAL SCIENCE UNIT 3 SPELLING TEST							
STUDENTS	Spelling test Unit 3 Social Sc	Crazy sp. test 3	Final Sp. test 3	Final sp. test 3	3 extra words	SUMA UNIDAD 3	Classification
1	1	0.83	4	3.33	1	3.33	Poor
2	1	0.83	10	8.33	3	8.67	Successful
3	0	0				0.00	Poor
4	0	0	1	0.83	0	0.67	Poor
5	1	0.83	7	5.83	2	6.00	Average
6	0	0	3	2.5	0	2.00	Poor
7	0	0				0.00	Poor
8	0	0	0	0	0	0.00	Poor
9	1	0.83				0.00	Poor
10	0	0	1	0.83	1	1.33	Poor
11	3	2.5	8	6.67	2	6.67	Average
12	0	0	0	0	0	0.00	Poor
13	1	0.83	7	5.83	1	5.33	Risk
14	1	0.83	4	3.33	2	4.00	Poor
15	0	0	1	0.83	0	0.67	Poor
16	0	0	1	0.83	1	1.33	Poor
17	0	0	0	0	1	0.67	Poor
18	0	0	1	0.83	0	0.67	Poor
19	0	0	3	2.5	1	2.67	Poor
20	1	0.83	3	2.5	0	2.00	Poor
21	3	2.5	11	9.17	3	9.33	Exceeding
22	0	0	6		1	4.67	Poor
23	0	0	0	0	1	0.67	Poor
24	1	0.83	11	9.17	3	9.33	Exceeding
AV						2.92	Poor

CONTROL GROUP: SOCIAL SCIENCE UNIT 4 SPELLING TEST							
STUDENTS	Crazy sp. test 4 Unit 4	Crazy sp. test 4 Unit 4	Final sp. test 4 Unit 4		3 extra words Unit 4	SUMA UNIDAD 4	Classification
1	2	1.67	4		1	3.33	Poor
2	7	5.83	10		3	8.67	Successful
3	0	0	0		0	-	Poor
4	0	0	1		0	0.67	Poor
5	2	1.67	7		3	6.67	Average
6	0	0	2		0	1.33	Poor
7	1	0.83	2		1	2.00	Poor
8	0	0	0		0	-	Poor
9	3	2.5	6		1	4.67	Poor
10	1	0.83	1		1	1.33	Poor
11	2	1.67	8		2	6.67	Average
12	0	0	0		0	-	Poor
13	1	0.83	5		1	4.00	Poor
14	1	0.83	4		2	4.00	Poor
15	0	0	1		0	0.67	Poor
16	1	0.83	1		1	1.33	Poor
17	1	0.83	0		1	0.67	Poor
18	0	0	1		0	0.67	Poor
19	0	0	3		1	2.67	Poor
20	0	0	5		0	3.33	Poor
21	5	4.17	12		3	10.00	Exceeding
22	0	0	5		1	4.00	Poor
23	0	0	0		1	0.67	Poor
24	0	0	11		3	9.33	Exceeding
AV						3.19	Poor

Unidad 3

Poor	Risk	Average	Successful	Exceeding
18	1	2	1	2

Unidad 4

Poor	Risk	Average	Successful	Exceeding
19	0	2	1	2

20. RESULTS OF THE CONTROL GROUP IN BELIEFS TESTS TERM 2

CONTROL GROUP: BELIEFS NATURAL SCIENCE UNIT 3									
STUDENTS	I think that copying words helps me to be a good speller	I believe that copying words is fun and interesting	I believe that copying words helps me to concentrate well when learning the spelling of words in English	I think that copying words helps me learn the spelling of difficult words in English	I think that copying words is simple and easy to use	I believe that copying words motivates me to learn the spelling of words in English	I think that copying words to learn the spelling of words in English gives me more confidence with the language	average	Coef. Correl. Pearson
1	3	3	4	4	5	3	4	7.4	0.33
2	4	1	3	5	1	1	1	4.6	
3								0.0	
4	4	5	5	5	4	5	4	9.1	
5	5	5	4	5	3	5	5	9.1	
6	4	5	4	4	4	3	4	8.0	
7	4	5	5	4	4	4	5	8.9	
8	1	5	5	4	5	5	5	8.6	
9	5	1	3	5	2	3	1	5.7	
10	5	5	5	5	5	5	5	10.0	
11	5	5	5	5	5	5	5	10.0	
12								0.0	
13	5	4	5	3	5	3	5	8.6	
14	5	5	5	5	4	5	5	9.7	
15	5	4	4	5	3	5	5	8.9	
16	5	4	4	4	5	4	4	8.6	
17	5	5	5	5	5	5	5	10.0	
18	4	2	4	2	4	2	4	6.3	
19	5	5	5	4	5	4	5	9.4	
20	5	5	5	5	5	5	5	10.0	
21	5	5	4	5	5	5	5	9.7	
22	5	4	5	4	4	4	5	8.9	
23	5	5	5	5	5	5	5	10.0	
24	5		5	4	5	4	5	9.3	
AV								7.9	

CONTROL GROUP: BELIEFS NATURAL SCIENCE UNIT 4									
STUDENTS	I think that copying words helps me to be a good speller	I believe that copying words is fun and interesting	I believe that copying words helps me to concentrate well when learning the spelling of words in English	I think that copying words helps me learn the spelling of difficult words in English	I think that copying words is simple and easy to use	I believe that copying words motivates me to learn the spelling of words in English	I think that copying words to learn the spelling of words in English gives me more confidence with the language	average	Coef. Correl. Pearson
1	4	3	4	4	5	4	3	7.71	0.25
2	2	1	4	3	2	4	2	5.14	
3	5	4	5	4	4	5	5	9.14	
4	4	4	4	5	4	4	4	8.29	
5	5	5	5	5	5	5	4	9.14	
6	5	5	4	4	4	5	4	8.86	
7	5	4	5	4	4	5	5	9.14	
8	5	2	1	3	5	4	2	6.29	
9	5	5	3	4	3	4	5	8.29	
10	5	5	5	5	5	5	5	10.00	
11	5	5	5	5	5	5	5	10.00	
12	3	5	4	3	5	3	4	7.71	
13	5	3	5	5	5	5	4	9.14	
14	5	5	4	4	4	5	5	9.14	
15	4	4	4	4	5	5	5	8.86	
16	5	5	5	5	4	5	5	9.71	
17	5	5	4	5	1	5	5	8.57	
18	4	2	4	2	4	2	4	6.29	
19	5	5	5	5	5	5	5	10.00	
20	5	5	5	5	5	5	5	10.00	
21	5	4	5	5	4	5	5	9.43	
22	5	4	4	5	5	4	5	9.14	
23	5	5	5	5	5	5	5	10.00	
24	5	4	5	4	5	4	5	9.14	
AV								8.71	

	90%	84%	90%	88%	85%	83%	87%	87%	51%
Statements	1	2	3	4	5	6	7	Expected	Result
	1	2	3	4	5	6	7	Average	
No/Ofcour	4%	13%	0%	4%	8%	8%	8%	7%	
I don't Kno	4%	4%	8%	4%	8%	17%	0%	7%	
Yes/Ofcour	83%	71%	83%	83%	75%	67%	83%	78%	

Effectivene	83%	6
Passed Spe	50%	6

	93%	83%	88%	85%	86%	89%	88%	87%	64%
Statements	1	2	3	4	5	6	7	Expected	Result
	1	2	3	4	5	6	7	Average	
No/Ofcour	4%	13%	4%	4%	8%	4%	8%	7%	
I don't Kno	4%	8%	4%	13%	4%	4%	8%	7%	
Yes/Ofcour	92%	79%	92%	83%	88%	92%	83%	87%	

Effectivene	96%	6
Passed Spe	63%	6

The Impact of the Neurolinguistic Programming spelling strategy in the teaching of Content and Language Integrated Learning subjects in bilingual schools

CONTROL GROUP: BELIEFS SOCIAL SCIENCE UNIT 3									
STUDENTS	I think that copying words helps me to be a good speller	I believe that copying words is fun and interesting	I believe that copying words helps me to concentrate well when learning the spelling of words in English	I think that copying words helps me learn the spelling of difficult words in English	I think that copying words is simple and easy to use	I believe that copying words motivates me to learn the spelling of words in English	I think that copying words to learn the spelling of words in English gives me more confidence with the language	average	Coef. Correl. Pearson
1	3	4	3	3	5	3	3	6.86	0.14
2	2	1	5	3	5	5	3	6.86	
3	2	2	4	4	5	2	3	6.29	
4	4	4	5	4	4	4	4	8.29	
5	5	5	5	5	5	5	4	9.71	
6	4	2	4	5	5	4	2	7.43	
7	5	3	4	4	5	4	3	8.00	
8	5	3	2	5	5	5	1	7.43	
9	5	5	5	5	5	5	4	9.43	
10	5	5	5	5	5	5	5	10.00	
11	5	5	5	5	5	5	5	10.00	
12	3	5	5	3	5	5	4	8.57	
13	5	3	5	5	5	4	5	9.14	
14	5	5	5	5	4	5	5	9.71	
15	5	5	4	5	5	5	4	9.43	
16	5	5	5	5	4	5	4	9.43	
17	5	5	5	4	5	5	5	9.71	
18	4	2	4	2	4	2	2	5.71	
19	5	5	5	5	5	5	5	10.00	
20	5	5	5	5	5	5	5	10.00	
21	5	5	5	5	5	5	5	10.00	
22	4	4	5	5	5	4	5	9.14	
23	5	5	5	5	5	5	5	10.00	
24	5	4	4	4	5	4	5	8.86	
AV								8.75	

	88%	81%	91%	88%	97%	88%	80%	88%	29%
Legends	1	2	3	4	5	6	7	Expected	Result

	1	2	3	4	5	6	7	Average
No/Ofcour	8%	17%	4%	4%	0%	8%	13%	8%
I don't Kno	8%	13%	4%	13%	0%	4%	17%	8%
Yes/Ofcour	83%	71%	92%	83%	100%	88%	71%	84%

Effectivene	96%	6
Passed Spe	21%	6

CONTROL GROUP: BELIEFS SOCIAL SCIENCE UNIT 4									
STUDENTS	I think that copying words helps me to be a good speller	I believe that copying words is fun and interesting	I believe that copying words helps me to concentrate well when learning the spelling of words in English	I think that copying words helps me learn the spelling of difficult words in English	I think that copying words is simple and easy to use	I believe that copying words motivates me to learn the spelling of words in English	I think that copying words to learn the spelling of words in English gives me more confidence with the language	Average	Coef. Correl. Pearson
1	3	3	3	3	5	3	3	6.57	0.28
2	2	1	5	3	5	5	3	6.86	
3	2	2	4	4	3	2	3	5.71	
4	4	3	5	4	4	4	4	8.00	
5	5	5	5	5	5	5	4	9.71	
6	4	2	4	5	3	4	2	6.86	
7	5	3	4	4	5	4	3	8.00	
8	5	3	2	5	5	5	1	7.43	
9	5	5	5	5	5	5	4	9.43	
10	5	5	5	5	5	5	5	10.00	
11	5	2	5	5	5	5	5	9.14	
12	3	3	5	3	3	5	4	7.43	
13	5	3	5	5	5	4	5	9.14	
14	5	5	5	5	4	5	5	9.71	
15	5	5	4	5	5	5	4	9.43	
16	5	5	5	5	4	5	4	9.43	
17	5	5	5	4	3	5	5	9.14	
18	4	2	4	2	4	2	2	5.71	
19	5	5	5	5	5	5	5	10.00	
20	5	5	5	5	5	5	5	10.00	
21	5	5	5	5	5	5	5	10.00	
22	4	4	5	5	5	4	5	9.14	
23	5	5	5	5	5	5	5	10.00	
24	5	4	4	4	5	4	5	8.86	
AV								8.57	

	88%	75%	91%	88%	90%	88%	80%	86%	32%
Statements	1	2	3	4	5	6	7	Expected	Result

	1	2	3	4	5	6	7	Average
No/Ofcour	8%	21%	4%	4%	0%	8%	13%	8%
I don't Kno	8%	25%	4%	13%	17%	4%	17%	13%
Yes/Ofcour	83%	54%	92%	83%	83%	88%	71%	79%

Effectivene	92%	6
Passed Spe	21%	6

21. RESULTS OF THE CONTROL GROUP IN SELF ASSESSMENT QUESTIONNAIRES TERM 2

CONTROL GROUP SOCIAL SCIENCE UNIT 3 SELF ASSESSMENT							
STUDENTS	From the list I practised I can correctly spell...	I can copy correctly words from Natural and Social Sc	I can stay focused and on task	When I work with a partner I can speak English during the activity	I can write in English words that I could not write before	Average	
1	4	5	4	2	4	7.6	
2	5	5	5	2	4	8.4	
3	2	3	4	1	3	5.2	
4	2	4	4	1	3	5.6	
5	5	5	5	2	5	8.8	
6	3	4	5	3	4	7.6	
7	4	4	5	2	3	7.2	
8	3	2	3	2	2	4.8	
9	4	5	4	4	5	8.8	
10	5	5	4	3	5	8.8	
11	5	5	5	2	5	8.8	
12	3	3	4	2	4	6.4	
13	4	4	5	4	4	8.4	
14	5	5	5	4	5	9.6	
15	4	4	4	4	4	8	
16	3	4	4	3	2	6.4	
17	2	3	2	1	2	4	
18	4	5	3	1	5	7.2	
19	3	4	4	4	4	7.6	
20	5	5	5	4	5	9.6	
21	5	5	5	5	5	10	
22	5	5	5	4	5	9.6	
23	4	5	4	2	2	6.8	
24	5	5	5	1	4	8	
	78%	87%	86%	53%	78%	76%	29%
Statements	Statement 1	Statement 2	Statement 3	Statement 4	Statement 5	Expected	Result

CONTROL GROUP NATURAL SCIENCE UNIT 4 SELF ASSESSMENT							
STUDENTS	From the list I practised I can correctly spell...	I can copy correctly words from Natural and Social Sc	I can stay focused and on task	When I work with a partner I can speak English during the activity	I can write in English words that I could not write before	Total rubric 07/11	
1	3	4	4	3	4	7.2	
2	5	5	4	3	4	8.4	
3	5	4	3	4	4	8	
4	4	4	5	4	4	8.4	
5	5	5	5	4	5	9.6	
6	2	5	5	3	5	8	
7	2	4	5	4	5	8	
8	2	5	1	4	2	5.6	
9	2	3	4	3	4	6.4	
10	5	4	5	5	5	9.6	
11	5	5	5	5	5	10	
12	2	4	5	3	3	6.8	
13	3	5	5	5	5	9.2	
14	4	4	5	4	4	8.4	
15	5	5	5	4	5	9.6	
16	5	5	5	4	5	9.6	
17	5	4	3	5	4	8.4	
18		4	2	4	2	6	
19	5	5	5	5	5	10	
20	5	5	5	5	5	10	
21	5	5	4	4	5	9.2	
22	5	5	4	4	5	9.2	
23	5	5	5	5	5	10	
24	4	4	5	1	5	7.6	
	81%	90%	87%	79%	88%	85%	64%
Statements	Statement 1	Statement 2	Statement 3	Statement 4	Statement 5	Expected	Result

22. RESULTS OF THE CONTROL GROUP IN LCPC QUESTIONNAIRES TERM 2

LCPC RESULTS CONTROL GROUP

STUDENT	GENDER	%VISUAL	%AUDITORY	%KINAESTHETIC	RESULT
1	Male	40%	33%	27%	Visual
2	Male	34%	29%	37%	Kinaesthetic
3	Female	36%	39%	24%	Auditory
4	Female	40%	37%	24%	Visual
5	Male	35%	35%	29%	Visual
7	Female	43%	38%	19%	Visual
8	Female	34%	25%	41%	Kinaesthetic
9	Female	33%	33%	34%	Kinaesthetic
10	Male	34%	32%	34%	Visual
11	Male	44%	38%	17%	Visual
12	Female	32%	39%	29%	Auditory
13	Male	39%	37%	24%	Visual
14	Female	31%	36%	33%	Auditory
15	Male	38%	36%	27%	Visual
16	Male	39%	31%	30%	Visual
17	Female	24%	39%	37%	Auditory
19	Male	40%	36%	25%	Visual
20	Male	38%	35%	27%	Visual
21	Male	37%	34%	29%	Visual
22	Male	34%	39%	27%	Auditory
24	Male	47%	30%	23%	Visual
Visual	Auditory	Kinaesthetic			
13	5	3			

Male	Sexo	%Visual	%Auditory	%Kinaesthetic	NATURALS CIENCE	NATURALS CIENCE	SOCIAL SCIENCE U1	SOCIAL SCIENCE U2	NATURALS CIENCE U3	NATURALS CIENCE U4	SOCIAL SCIENCE U3	SOCIAL SCIENCE U4
Student 24	Male	47%	30%	23%	Visual	92%	67%	80%	93%	100%	93%	93%
Student 22	Male	34%	39%	27%	Auditory	67%	47%	58%	27%	67%	93%	47%
Student 2	Male	34%	29%	37%	Kinaesthetic	100%	100%	92%	100%	100%	87%	87%
Female	Sexo	%Visual	%Auditory	%Kinaesthetic	NATURALS CIENCE	NATURALS CIENCE	SOCIAL SCIENCE U1	SOCIAL SCIENCE U2	NATURALS CIENCE U3	NATURALS CIENCE U4	SOCIAL SCIENCE U3	SOCIAL SCIENCE U4
Student 7	Female	43%	38%	19%	Visual	33%	47%	0%	27%	67%	93%	0%
Student 14	Female	31%	36%	33%	Auditory	17%	47%	67%	33%	80%	67%	40%
Student 8	Female	34%	25%	41%	Kinaesthetic	0%	13%	58%	33%	13%	13%	0%

23. RESULTS OF THE EXPERIMENTAL GROUP IN SPELLING TESTS TERM 1

EXPERIMENTAL GROUP: NATURAL SCIENCE UNIT 1 SPELLING TEST					
STUDENT	Crazy Sp, test Natural Sciences Unit 1	Crazy sp, test grade (10) 03/10	Final Spelling test Unit 1	Final sp, test grade (10) 06/11	Classification
1	0	0	0	0.00	Poor
2	0	0	2	1.67	Poor
3	1	0.83	5	4.17	Poor
4	0	0	9	7.50	Successful
5	0	0	9	7.50	Successful
6	0	0	11	9.17	Exceeding
7	0	0	4	3.33	Poor
8	0	0	3	2.50	Poor
9	0	0	1	0.83	Poor
10	0	0	0	0.00	Poor
11	1	0.83	3	2.50	Poor
12	0	0	2	1.67	Poor
13	0	0	0	0.00	Poor
14	0	0	2	1.67	Poor
15	0	0	1	0.83	Poor
16	0	0	2	1.67	Poor
17	0	0	0	0.00	Poor
18	1	0.83	2	1.67	Poor
19	0	0	8	6.67	Average
20	0	0	8	6.67	Average
21	0	0	0	0.00	Poor
22	0	0	7	5.83	Risk
23	0	0	0	0.00	Poor
24	0	0	5	4.17	Poor
AV				2.92	Poor

Unidad 1

Poor	Risk	Average	Successful	Exceeding
18	1	2	2	1

EXPERIMENTAL GROUP: NATURAL SCIENCE UNIT 2 SPELLING TEST							
STUDENT	Crazy sp, test Unit 2	26/11	Final spelling test Unit 2	05/12	3 extra words Unit 2	Final test U2 15 words norm.	Classification
1	0	0	0	0	0	0.00	Poor
2	0	0	7	5.83	3	6.67	Average
3	0	0	6	5	3	6.00	Average
4	2	1.67	9	7.5	3	8.00	Successful
5	0	0	9	7.5	2	7.33	Average
6	4	3.33	11	9.17	3	9.33	Exceeding
7	0	0	9	7.5	3	8.00	Successful
8	1	0.83	5	4.17	2	4.67	Poor
9	1	0.83	5	4.17	2	4.67	Poor
10	0	0	2	1.67	0	1.33	Poor
11	0	0	12	10	2	9.33	Exceeding
12	0	0	10	8.33	3	8.67	Successful
13	0	0	4	3.33	1	3.33	Poor
14	0	0	0	0	0	0.00	Poor
15	0	0	4	3.33	2	4.00	Poor
16	0	0	5	4.17	1	4.00	Poor
17	0	0	11	9.17	3	9.33	Exceeding
18	1	0.83	3	2.5	2	3.33	Poor
19	2	1.67	11	9.17	3	9.33	Exceeding
20	2	1.67	11	9.17	2	8.67	Successful
21	0	0	0	0	0	0.00	Poor
22	2	1.67	7	5.83	3	6.67	Average
23	0	0	9	7.5	3	8.00	Successful
24	2	1.67	10	8.33	2	8.00	Successful
AV						5.78	Risk

Unidad 2

Poor	Risk	Average	Successful	Exceeding
10	0	4	6	4

EXPERIMENTAL GROUP: SOCIAL SCIENCE UNIT 1 SPELLING TEST					
STUDENT	Crazy Spelling test Unit 1 Social Sc	Crazy sp, test 1 06/11	Final sp, test 1	Final test U1 22/11	Classification
1	0	0.00	0	0.00	Poor
2	3	2.50		0.00	Poor
3	2	1.67	10	8.33	Successful
4	3	2.50	12	10.00	Exceeding
5	1	0.83	11	9.17	Exceeding
6	3	2.50	11	9.17	Exceeding
7	1	0.83	12	10.00	Exceeding
8	1	0.83	6	5.00	Risk
9	2	1.67	6	5.00	Risk
10	0	0.00	6	5.00	Risk
11	1	0.83	11	9.17	Exceeding
12	1	0.83	10	8.33	Successful
13	0	0.00	4	3.33	Poor
14	0	0.00	7	5.83	Risk
15	0	0.00	7	5.83	Risk
16	0	0.00	7	5.83	Risk
17	2	1.67	9	7.50	Successful
18	0	0.00	8	6.67	Average
19	3	2.50	12	10.00	Exceeding
20	1	0.83	11	9.17	Exceeding
21	0	0.00	1	0.83	Poor
22	1	0.83	9	7.50	Successful
23	0	0.00	8	6.67	Average
24	2	1.67	7	5.83	Risk
AV				6.42	Average

EXPERIMENTAL GROUP: SOCIAL SCIENCE UNIT 2 SPELLING TEST							
STUDENT	Crazy sp, test Unit 2	Crazy sp, test 2 11/12	Final sp, test 2 Unit 2	18/12	3 extra words Unit 2	Final test U2 15 words norm.	Classification
1	0	0	0	0	0	0.00	Poor
2	0	0	2	1.67	1	2.00	Poor
3	1	0.83	6	5	1	4.67	Poor
4	1	0.83	9	7.5	1	6.67	Average
5	1	0.83	6	5	1	4.67	Poor
6	3	2.5	9	7.5	2	7.33	Average
7	2	1.67				0.00	Poor
8	1	0.83	4	3.33		2.67	Poor
9	0	0	5	4.17	1	4.00	Poor
10	1	0.83	2	1.67	1	2.00	Poor
11	0	0	10	8.33	0	6.67	Average
12	3	2.5	10	8.33	2	8.00	Successful
13	0	0	2	1.67	1	2.00	Poor
14	0	0	0	0	1	0.67	Poor
15	0	0	5	4.17	2	4.67	Poor
16	2	1.67	5	4.17	2	4.67	Poor
17	1	0.83	10	8.33	2	8.00	Successful
18	1	0.83	4	3.33	0	2.67	Poor
19	4	3.33	12	10	2	9.33	Exceeding
20	1	0.83	8	6.67	2	6.67	Average
21	0	0	0	0	0	0.00	Poor
22	1	0.83	9	7.5	2	7.33	Average
23			9	7.5	1	6.67	Average
24			8	6.67	2	6.67	Average
AV						4.50	Poor

Unidad 1

Poor	Risk	Average	Successful	Exceeding
4	7	2	4	7

Unidad 2

Poor	Risk	Average	Successful	Exceeding
0	0	0	0	0

24. RESULTS OF THE EXPERIMENTAL GROUP IN BELIEFS TESTS TERM 1

EXPERIMENTAL GROUP: BELIEFS TEST NATURAL SCIENCE UNIT 1								
STUDENTS	I think this strategy helps me to be a good speller in English	I believe that using this strategy is fun and interesting	I believe that this strategy helps me to concentrate well when learning the spelling of words in English	I think this strategy helps me to learn the spelling of difficult words in English	I think this strategy is simple and easy to use	I believe that this strategy motivates me to learn the spelling of words in English	I think that using this strategy to learn the spelling of words in English gives me more confidence with the language	Average
1	4	4	3	3	2	4	4	6.86
2	5	3	2	4	2	4	4	6.86
3	4	5	5	4	5	4	5	9.14
4	4	2	5	4	4	5	1	7.14
5	5	4	5	4	4	5	4	8.86
6	4	5	3	4	4	3	4	7.71
7	5	4	4	4	4	4	4	8.57
8	4	5	4	4	4	4	4	8.29
9	4	4	5	5	4	4	4	8.57
10	5	4	4	5	4	5	5	9.14
11	5	5	5	5	5	5	5	10.00
12	5	4	4	5	5	4	5	9.14
13	4	5	3	5	4	5	4	8.57
14	4	5	4	4	2	4	4	7.71
15	1	2	4	1	3	4	1	4.57
16	5	4	4	4	5	4	4	8.57
17	5	4	5	5	5	4	5	9.43
18	5	5	5	5	5	5	5	10.00
19	4	3	4	5	4	5	4	8.29
20	4	5	4	4	5	5	4	8.86
21	4	4	4	4	4	4	4	8.00
22	4	4	4	4	4	4	4	8.00
23	4	3	2	5	5	3	5	7.71
24	5	4	5	5	5	4	4	9.14
AV								8.30

Coef. Correl. Pearson
0.04

Statements	86%	81%	81%	85%	82%	85%	82%	83%	29%
	1	2	3	4	5	6	7	Expected	Result

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	4%	8%	8%	4%	13%	0%	8%	7%
I don't Know	0%	13%	13%	4%	4%	8%	0%	6%
Yes/Ofcourse Yes	96%	79%	79%	92%	83%	92%	92%	88%

Effectiveness of Strategy	96%	6
Passed Spelling Test	21%	6

EXPERIMENTAL GROUP: BELIEFS TEST NATURAL SCIENCE UNIT 2								
STUDENTS	I think this strategy helps me to be a good speller in English	I believe that using this strategy is fun and interesting	I believe that this strategy helps me to concentrate well when learning the spelling of words in English	I think this strategy helps me to learn the spelling of difficult words in English	I think this strategy is simple and easy to use	I believe that this strategy motivates me to learn the spelling of words in English	I think that using this strategy to learn the spelling of words in English gives me more confidence with the language	Average
1	5	4	3	3	3	3	3	7.14
2	4	3	5	4	4	4	4	8.00
3	4	5	4	4	5	4	5	8.86
4	5	4	4	4	5	4	5	8.86
5	4	4	5	4	4	5	4	8.57
6	4	4	2	2	4	4	3	6.57
7	3	2	4	5	3	4	4	7.14
8	4	4	5	4	5	5	5	9.14
9	5	4	5	4	4	4	4	8.57
10	4	4	5	3	5	4	5	8.57
11	5	4	5	3	5	5	4	8.86
12	5	4	5	5	4	5	5	9.43
13	4	4	5	5	5	4	4	8.86
14	3	4	4	5	4	5	5	8.57
15	3	1	3	5	3	1	3	5.43
16	4	5	4	4	5	4	4	8.57
17	4	5	4	4	5	5	5	9.14
18	4	4	5	4	5	5	5	9.14
19	4	4	4	4	4	2	4	7.43
20	5	4	4	4	5	4	4	8.57
21	4	5	4	3	2	4	4	7.43
22	4	3	3	4	4	4	5	7.71
23	3	4	2	5	4	4	4	7.43
24	4	5	5	5	5	4	4	9.14
AV								8.21

Coef. Correl. Pearson
0.10

Statements	82%	78%	83%	82%	84%	82%	85%	82%	58%
	1	2	3	4	5	6	7	Expected	Result

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	0%	8%	8%	4%	4%	8%	0%	5%
I don't Know	17%	8%	13%	17%	13%	4%	8%	11%
Yes/Ofcourse Yes	83%	83%	79%	79%	83%	88%	92%	84%

Effectiveness of Strategy	96%	6
Passed Spelling Test	58%	6

The Impact of the Neurolinguistic Programming spelling strategy in the teaching of Content and Language Integrated Learning subjects in bilingual schools

EXPERIMENTAL GROUP: BELIEFS SOCIAL SCIENCE UNIT 1										
STUDENTS	I think this strategy helps me to be a good speller in English	I believe that using this strategy is fun and interesting	I believe that this strategy helps me to concentrate well when learning the spelling of words in English	I think this strategy helps me to learn the spelling of difficult words in English	I think this strategy is simple and easy to use	I believe that this strategy motivates me to learn the spelling of words in English	I think that using this strategy to learn the spelling of words in English gives me more confidence with the language	Average		
1	4	4	4	3	3	4	5	7.71	Coef. Correl. Pearson 0.33	
2								0.00		
3	4	5	4	4	5	4	3	8.29		
4	4	5	5	4	5	4	4	8.86		
5	5	5	5	5	4	5	5	9.71		
6	4	4	3	4	4	4	3	7.43		
7	4	3	5	4	3	4	4	7.71		
8	4	5	4	4	5	4	5	8.86		
9	5	4	4	5	3	5	4	8.57		
10	5	4	5	4	4	4	5	8.86		
11	4	4	4	5	5	5	4	8.86		
12	5	4	4	4	5	5	4	8.86		
13	4	5	4	5	3	4	5	8.57		
14	5	4	5	4	4	5	3	8.57		
15								0.00		
16	4	5	5	4	4	4	4	8.57		
17	5	5	4	4	4	5	4	8.86		
18	4	5	4	4	4	4	4	8.29		
19	3	4	3	3	3	2	3	6.00		
20	5	5	4	5	4	4	4	8.86		
21	4	4	5	3	4	4	4	8.00		
22	4	5	5	5	4	4	5	9.14		
23	3	3	4	4	4	3	2	6.57		
24	5	5	4	4	5	5	5	9.43		
AV								7.69		

	85%	88%	85%	83%	81%	84%	81%	84%	64%
Statements	1	2	3	4	5	6	7	Expected	Result

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	0%	0%	0%	0%	0%	4%	4%	1%
I don't Know	8%	8%	8%	13%	21%	4%	17%	11%
Yes/Ofcourse Yes	83%	83%	83%	79%	71%	83%	71%	79%

Effectiveness of Strategy	92%	6
Passed Spelling Test	54%	6

EXPERIMENTAL GROUP: BELIEFS SOCIAL SCIENCE UNIT 2										
STUDENTS	I think this strategy helps me to be a good speller in English	I believe that using this strategy is fun and interesting	I believe that this strategy helps me to concentrate well when learning the spelling of words in English	I think this strategy helps me to learn the spelling of difficult words in English	I think this strategy is simple and easy to use	I believe that this strategy motivates me to learn the spelling of words in English	I think that using this strategy to learn the spelling of words in English gives me more confidence with the language	Average		
1	3	5	3	3	5	3	5	7.71	Coef. Correl. Pearson 0.33	
2	4	4	4	5	5	4	5	9.14		
3	5	4	5	4	4	5	4	8.86		
4	4	5	4	5	4	5	4	8.86		
5	5	5	5	5	4	5	5	9.71		
6	5	4	3	4	4	4	4	8.00		
7								0.00		
8	4	5	5	4	5	4	4	8.86		
9	5	4	4	4	4	4	3	8.00		
10	5	5	4	4	5	4	5	9.14		
11	4	5	4	3	4	4	4	8.00		
12	5	4	5	5	4	5	4	9.14		
13	5	4	3	5	2	5	3	7.71		
14	5	4	4	4	4	4	5	8.57		
15	1	2	1	2	4	5	3	5.14		
16	4	4	4	4	4	4	4	8.00		
17	4	5	5	5	4	5	4	9.14		
18	4	5	4	5	5	4	4	8.86		
19	4	2	5	4	4	2	4	7.14		
20	5	5	4	5	5	5	4	9.43		
21	4	5	2	4	2	4	2	6.57		
22	4	5	5	4	4	4	4	8.57		
23	4	4	2	4	4	2	4	6.86		
24	5	4	5	4	4	4	5	8.86		
AV								7.93		

	85%	86%	79%	83%	81%	83%	81%	83%	45%
Statements	1	2	3	4	5	6	7	Expected	Result

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	4%	8%	13%	4%	8%	8%	4%	7%
I don't Know	4%	0%	13%	8%	0%	4%	13%	6%
Yes/Ofcourse Yes	88%	88%	71%	83%	88%	83%	79%	83%

Effectiveness of Strategy	92%	6
Passed Spelling Test	42%	6

25. RESULTS OF THE EXPERIMENTAL GROUP IN SELF AND PEER ASSESSMENT QUESTIONNAIRES TERM 1

EXPERIMENTAL GROUP: NATURAL SCIENCE UNIT 1 SELF ASSESSMENT						
STUDENT	From the list I practised I can correctly spell,,,	I can use the visual spelling strategy to spell words from Natural and Social Sc	I can stay focused and on task	When I work with a partner I can speak English during the activity	I can write in English words that I could not write before	Total rubric
1	5	5	5	2	1	7.2
2	4	4	4	5	5	8.8
3	4	4	4	3	4	8
4	4	2	5	3	5	7.6
5	5	4	5	5	5	9.6
6	4	4	3	4	3	7.2
7	4	4	4	2	4	7.2
8	5	4	5	4	4	8.8
9	1	4	4	5	5	7.6
10	3	4	5	5	4	8.4
11	4	4	5	5	3	8.4
12	5	4	4	2	5	8
13	5	4	2	5	5	8.4
14	3	5	4	4	3	7.6
15	2	1	1	1	3	3.2
16	5	4	4	4	4	8.4
17	3	4	4	5	5	8.4
18	5	5	5	5	5	10
19	4	4	3	5	3	7.6
20	4	4	4	5	5	8.8
21	3	4	4	2	4	6.8
22						0
23	3	5	4	4	5	8.4
24	5	5	5	4	4	9.2

	78%	80%	80%	78%	83%	80%	29%
Statements	1	2	3	4	5	Expected	Result

EXPERIMENTAL GROUP: SOCIAL SCIENCE UNIT 1 SELF ASSESSMENT						
STUDENT	From the list we practised, we can correctly spell,,,	We can use the visual spelling strategy to spell words from Natural and Social Siences in English	We can stay focused and on task	When we work together we can speak English during the activity	We can write in English words that I could not write before	Average
1	4	4	4	3	4	7.6
2						0
3	4	4	4	5	4	8.4
4	5	5	5	3	4	8.8
5	4	5	5	4	5	9.2
6	4	4	4	3	4	7.6
7	5	4	4	3	5	8.4
8	5	3	4	2	4	7.2
9	5	4	3	4	5	8.4
10	5	4	5	2	5	8.4
11	5	4	4	4	4	8.4
12	5	4	3	4	5	8.4
13	5	5	5	3	4	8.8
14	5	4	5	2	5	8.4
15	4	5	5	4	5	9.2
16	5	4	4	4	5	8.8
17	4	4	4	5	4	8.4
18	5	4	4	3	5	8.4
19	5	4	4	4	4	8.4
20	5	4	4	4	5	8.8
21						0
22	5	3	4	2	4	7.2
23	3	4	4	3	5	7.6
24	3	4	4	3	5	7.6

	91%	82%	84%	67%	91%	83%	64%
Statements	1	2	3	4	5	Expected	Result

26. RESULTS OF THE EXPERIMENTAL GROUP IN SPELLING TESTS TERM 2

EXPERIMENTAL GROUP: NATURAL SCIENCE UNIT 3 SPELLING TEST							
STUDENTS	Crazy Sp. test Natural Sciences Unit 3	Crazy sp. test grade (10)	Final Spelling test Unit 3	Final sp. test grade (10)	3 extra words Unit 3	sum UNIDAD 3	Classification
1	0	0	0	0	0	0.00	Poor
2	0	0	7	5.83	3	6.67	Average
3	1	0.83	9	7.5	0	6.00	Average
4	1	0.83	10	8.33	3	8.67	Successful
5	0	0	12	10	3	10.00	Exceeding
6	1	0.83	10	8.33	4	9.33	Exceeding
7	0	0	11	9.17	2	8.67	Successful
8	0	0	4	3.33	3	4.67	Poor
9	0	0	11	9.17	1	8.00	Successful
10	0	0	5	4.17	2	4.67	Poor
11	0	0	12	10	3	10.00	Exceeding
12	0	0	9	7.5	0	6.00	Average
13	0	0	2	1.67	1	2.00	Poor
14	0	0	2	1.67	0	1.33	Poor
15	0	0	7	5.83	3	6.67	Average
16	0	0	5	4.17	3	5.33	Risk
17	1	0.83	11	9.17	4	10.00	Exceeding
18	0	0	6	5	1	4.67	Poor
19	2	1.67	12	10	3	10.00	Exceeding
20	2	1.67	9	7.5	3	8.00	Successful
21	0	0	1	0.83	0	0.67	Poor
22	3	2.5	11	8.33	3	9.33	Exceeding
23	0	0	10	8.33	0	6.67	Average
24	1	0.83	10	8.33	2	8.00	Successful
AV						6.47	Average

Unidad 3

Poor	Risk	Average	Successful	Exceeding
7	1	5	5	6

EXPERIMENTAL GROUP: NATURAL SCIENCE UNIT 4 SPELLING TEST								
STUDENTS	Crazy sp. test Unit 4 12/02		Final spelling test Unit 4		3 extra words Unit 4	Jobs Ficha 1	sum UNIDAD 4	Classification
1	0	0	0	0	0		0.00	Poor
2	3	2.5	11	9.17	2		8.67	Successful
3	0	0	10	8.33	3		8.67	Successful
4	2	1.67	11	9.17	3		9.33	Exceeding
5	2	1.67	10	8.33	3		8.67	Successful
6	5	4.17	12	10	3		10.00	Exceeding
7	2	1.67	12	10	3		10.00	Exceeding
8	1	0.83	9	7.5	3		8.00	Successful
9	2	1.67	12	10	3		10.00	Exceeding
10	2	1.67	11	9.17	3		9.33	Exceeding
11	3	2.5	12	10	3		10.00	Exceeding
12	2	1.67	11	9.17	3		9.33	Exceeding
13	0	0	5	4.17	3		5.33	Risk
14	2	1.67	8	6.67	3		7.33	Average
15	0	0	6	5	2		5.33	Risk
16	3	2.5	7	5.83	3		6.67	Average
17	3	2.5	11	9.17	3		9.33	Exceeding
18	2	1.67	8	6.67	3		7.33	Average
19	2	1.67	12	10	3		10.00	Exceeding
20	4	3.33	12	10	3		10.00	Exceeding
21	0	0	0	0	1		0.67	Poor
22	5	4.17						
23	1	0.83	9	7.5	3		8.00	Successful
24	3	2.5	12	10	3		10.00	Exceeding
AV							7.91	Successful

Unidad 4

Poor	Risk	Average	Successful	Exceeding
2	2	3	5	11

EXPERIMENTAL GROUP: SOCIAL SCIENCE UNIT 3 SPELLING TEST							
STUDENTS	Crazy Spelling test Unit 3 Social Sc	Crazy sp. test 3	Final sp. test 3		3 extra words	SUM UNIDAD 3	Classification
1	0	0	0		0	0.00	Poor
2	0	0	6		5	4.00	Poor
3	0	0	5		4.17	4.67	Poor
4	1	0.83	7		5.83	6.00	Average
5	0	0	9		7.5	7.33	Average
6	1	0.83	12		10	10.00	Exceeding
7	1	0.83	3		2.5	3.33	Poor
8	0	0				0.00	Poor
9	0	0	3		2.5	3.33	Poor
10	0	0	3		2.5	2.67	Poor
11	0	0	7		5.83	6.00	Average
12	1	0.83	10		8.33	8.67	Successful
13	0	0	3		2.5	2.00	Poor
14	0	0	0		0	0.67	Poor
15	0	0	1		0.83	1.33	Poor
16	1	0.83	5		4.17	3.33	Poor
17	1	0.83	9		7.5	7.33	Average
18	0	0	3		2.5	2.67	Poor
19	0	0	12		10	9.33	Exceeding
20	1	0.83	4		3.33	4.00	Poor
21	0	0	0		0	0.67	Poor
22	1	0.83	7		5.83	6.00	Average
23	0	0	8		6.67	6.67	Average
24	0	0	7		5.83	5.33	Risk
AV						4.39	Poor

Unidad 3

Poor	Risk	Average	Successful	Exceeding
14	1	6	1	2

EXPERIMENTAL GROUP: SOCIAL SCIENCE UNIT 4 SPELLING TEST							
STUDENTS	Crazy sp. test Unit 4	Crazy sp. test 4	Final sp. test 4 Unit 4		3 extra words Unit 4	SUM UNIDAD 4	Classification
1	0	0	0		0	0.00	Poor
2	1	0.83	5		2	4.67	Poor
3	0	0	8		3	7.33	Average
4	1	0.83	11		3	9.33	Exceeding
5	1	0.83	10		3	8.67	Successful
6	2	1.67	12		3	10.00	Exceeding
7	0	0	12		3	10.00	Exceeding
8	1	0.83	9		3	8.00	Successful
9	1	0.83	9		3	8.00	Successful
10	2	1.67	3		3	4.00	Poor
11	1	0.83	12		3	10.00	Exceeding
12	1	0.83	11		3	9.33	Exceeding
13	0	0	7		3	6.67	Average
14	0	0	8		3	7.33	Average
15	1	0.83	6		2	5.33	Risk
16	1	0.83	7		3	6.67	Average
17	1	0.83	10		3	8.67	Successful
18	1	0.83	8		3	7.33	Average
19	5	4.17	12		3	10.00	Exceeding
20	2	1.67	12		3	10.00	Exceeding
21	0	0	0		1	0.67	Poor
22	12	10					
23	0	0	12		3	10.00	Exceeding
24	0	0	9		3	8.00	Successful
AV						7.39	Average

Unidad 4

Poor	Risk	Average	Successful	Exceeding
4	1	5	5	8

27. RESULTS OF THE EXPERIMENTAL GROUP IN BELIEFS TESTS TERM 2

EXPERIMENTAL GROUP: BELIEFS NATURAL SCIENCE UNT 3									
STUDENTS	I think this strategy helps me to be a good speller in English	I believe that using this strategy is fun and interesting	I believe that this strategy helps me to concentrate well when learning the spelling of words in English	I think this strategy helps me to learn the spelling of difficult words in English	I think this strategy is simple and easy to use	I believe that this strategy motivates me to learn the spelling of words in English	I think that using this strategy to learn the spelling of words in English gives me more confidence with the language	average	Coef. Correl. Pearson
1	5	5	5	4	5	5	5	9.71	-0.09
2	4	4	5	5	4	5	5	9.14	
3	5	4	5	5	4	5	5	9.43	
4	5	4	5	4	5	4	5	9.14	
5	5	5	5	5	5	5	5	10.00	
6	4	4	4	3	4	5	4	7.14	
7	4	4	5	4	3	5	3	8.00	
8	4	4	4	4	5	4	3	8.00	
9	4	4	4	3	4	4	4	7.71	
10	5	4	5	5	5	5	5	9.43	
11	4	3	5	5	4	5	3	8.29	
12									
13	5	4	5	5	3	5	5	9.14	
14	4	4	4	3	4	4	4	7.71	
15	4	2	5	1	4	3	4	6.57	
16	4	5	4	5	5	5	4	9.14	
17	4	5	5	5	5	5	5	9.71	
18	5	5	4	5	5	4	5	9.43	
19	5	2	4	4	5	4	2	7.43	
20	5	4	5	4	5	4	5	9.14	
21	4	4	4	4	4	4	4	8.00	
22	5	4	4	4	3	4	4	8.00	
23	3	4	3	4	4	4	5	7.71	
24	5	4	5	5	5	5	5	9.71	
AV								8.60	

	89%	80%	88%	86%	89%	88%	83%	86%	65%
Statements	1	2	3	4	5	6	7	Expected	Result

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	0%	8%	0%	4%	0%	0%	8%	3%
I don't Know	4%	4%	17%	0%	13%	4%	13%	8%
Yes/Ofcourse Yes	92%	83%	79%	92%	83%	92%	75%	85%

Effectiveness of Strategy	96%	6
Passed Spelling Test	67%	6

EXPERIMENTAL GROUP: BELIEFS NATURAL SCIENCE UNIT 4									
STUDENTS	I think this strategy helps me to be a good speller in English	I believe that using this strategy is fun and interesting	I believe that this strategy helps me to concentrate well when learning the spelling of words in English	I think this strategy helps me to learn the spelling of difficult words in English	I think this strategy is simple and easy to use	I believe that this strategy motivates me to learn the spelling of words in English	I think that using this strategy to learn the spelling of words in English gives me more confidence with the language	Average	Coef. Correl. Pearson
1	3	5	4	4	5	5	3	8.29	0.30
2	5	4	3	4	4	4	4	8.00	
3	4	5	4	5	5	5	5	9.43	
4	4	5	5	4	4	5	5	9.14	
5	5	5	5	4	5	4	5	9.43	
6	4	4	4	1	4	5	4	7.43	
7	4	2	4	5	4	5	4	8.00	
8	4	4	4	4	5	5	4	8.57	
9	4	4	2	4	4	4	4	7.43	
10	4	5	5	4	5	5	4	9.14	
11	5	3	5	4	4	4	3	8.00	
12	5	5	5	5	4	5	5	9.71	
13	5	3	5	5	5	5	1	8.29	
14	4	3	4	2	4	2	4	6.57	
15	4	1	5	1	3	1	4	5.43	
16	4	4	4	5	4	5	4	8.57	
17	5	5	5	5	5	5	4	9.71	
18	5	4	4	5	5	5	5	9.43	
19	4	4	5	5	4	4	5	8.86	
20	4	5	4	5	5	5	4	9.14	
21	4	3	4	4	4	4	4	7.71	
22									
23	4	5	5	4	5	5	5	9.43	
24	4	4	5	5	5	5	4	9.14	
AV								8.47	

	85%	80%	84%	84%	90%	88%	82%	85%	79%
Statements	1	2	3	4	5	6	7	Expected	Result

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	0%	8%	8%	8%	0%	8%	4%	5%
I don't Know	4%	17%	4%	0%	4%	0%	8%	5%
Yes/Ofcourse Yes	92%	71%	83%	88%	92%	88%	83%	85%

Effectiveness of Strategy	92%	6
Passed Spelling Test	75%	6

EXPERIMENTAL GROUP: BELIEFS SOCIAL SCIENCE UNIT 3									
	I think this strategy helps me to be a good speller in English	I believe that using this strategy is fun and interesting	I believe that this strategy helps me to concentrate well when learning the spelling of words in English	I think this strategy helps me to learn the spelling of difficult words in English	I think this strategy is simple and easy to use	I believe that this strategy motivates me to learn the spelling of words in English	I think that using this strategy to learn the spelling of words in English gives me more confidence with the language		
STUDENTS								Average	
1	4	5	3	4	5	5	5	8.86	Coef. Correl. Pearson 0.32
2	4	4	4	5	5	5	5	9.14	
3	5	5	4	1	5	5	4	8.29	
4	5	5	4	5	4	5	4	9.14	
5	5	5	5	5	5	5	5	10.00	
6	2	1	4	4	4	4	3	6.29	
7	4	4	4	5	4	4	3	8.00	
8								0.00	
9	4	4	4	4	4	4	4	8.00	
10	5	5	4	5	5	5	5	9.71	
11	4	5	4	4	4	4	3	8.00	
12	5	5	5	5	5	5	5	10.00	
13	5	5	5	5	5	3	1	8.29	
14	4	5	5	4	5	5	4	9.14	
15	4	5	5	4	1	4	1	6.86	
16	4	5	4	4	5	4	4	8.57	
17	5	5	5	4	5	5	4	9.43	
18	5	4	5	5	5	5	5	9.71	
19	4	5	4	5	5	4	5	9.14	
20	4	5	4	4	5	5	4	8.86	
21	2	4	5	5	3	4	4	7.71	
22	4	3	4	4	4	4	4	7.71	
23	4	5	4	5	5	4	5	9.14	
24	5	5	5	4	5	3	5	9.14	
AV								8.30	

Statements	84%	90%	87%	87%	90%	87%	81%	87%	44%
	1	2	3	4	5	6	7	Expected	Results

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	8%	4%	0%	4%	4%	0%	8%	4%
I don't Know	0%	4%	4%	0%	4%	13%	8%	5%
Yes/Ofcourse Yes	88%	88%	92%	92%	88%	83%	79%	87%

Effectiveness of Strategy	96%	6
Passed Spelling Test	38%	6

EXPERIMENTAL GROUP: BELIEFS SOCIAL SCIENCE UNIT 4									
	I think this strategy helps me to be a good speller in English	I believe that using this strategy is fun and interesting	I believe that this strategy helps me to concentrate well when learning the spelling of words in English	I think this strategy helps me to learn the spelling of difficult words in English	I think this strategy is simple and easy to use	I believe that this strategy motivates me to learn the spelling of words in English	I think that using this strategy to learn the spelling of words in English gives me more confidence with the language		
STUDENTS								average	
1	4	5	4	4	5	5	3	8.57	Coef. Correl. Pearson 0.32
2	4	4	4	5	5	5	5	9.14	
3	5	5	4	4	5	5	4	9.14	
4	5	5	4	5	4	5	4	9.14	
5	5	5	5	5	5	5	5	10.00	
6	4	4	4	4	4	4	4	8.00	
7	4	4	4	5	4	4	4	8.29	
8	5	5	5	5	5	5	5	10.00	
9	4	4	4	4	4	4	4	8.00	
10	5	5	4	5	5	5	5	9.71	
11	4	5	4	4	4	4	3	8.00	
12	5	5	5	5	5	5	5	10.00	
13	5	5	5	5	5	5	3	1	
14	4	5	5	4	5	5	4	9.14	
15	4	5	5	4	1	4	1	6.86	
16	4	5	4	4	5	4	4	8.57	
17	5	5	5	4	5	5	4	9.43	
18	5	4	5	5	5	5	5	9.71	
19	5	5	5	5	5	5	5	10.00	
20	4	5	4	4	5	5	4	8.86	
21	3	4	5	5	3	4	4	8.00	
22									
23	4	5	4	5	5	4	5	9.14	
24	5	5	5	4	5	4	5	9.43	
AV								8.93	

Statements	89%	95%	90%	90%	90%	90%	81%	89%	74%
	1	2	3	4	5	6	7	Expected	Results

	1	2	3	4	5	6	7	Average
No/Ofcourse Not	0%	0%	0%	0%	4%	0%	8%	2%
I don't Know	4%	0%	0%	0%	4%	4%	8%	3%
Yes/Ofcourse Yes	92%	96%	96%	96%	88%	92%	79%	91%

Effectiveness of Strategy	96%	6
Passed Spelling Test	75%	6

28. RESULTS OF THE EXPERIMENTAL GROUP IN PEER ASSESSMENT QUESTIONNAIRES TERM 2

EXPERIMENTAL GROUP SOCIAL SCIENCE UNIT 3 PEER ASSESSMENT							
STUDENTS	From the list we practised, we can correctly spell...	We can use the visual spelling strategy to spell words from Natural and Social Sciences in English	We can stay focused and on task	When we work together we can speak English during the activity	We can write in English words that I could not write before	average	
1	3	4	3	5	5		8
2	5	4	4	4	4	3	8
3	4	4	5	5	5	5	9.2
4	4	5	4	4	4	5	8.8
5	3	5	5	5	5	5	9.2
6	5	4	2	4	4	4	7.6
7	3	4	5	4	4	4	8
8							0
9	4	4	4	4	4	4	8
10	5	5	4	3	5	5	8.8
11	3	4	5	4	5	5	8.4
12							0
13	5	3	5	4	5	5	8.8
14	3	4	3	2	5	5	6.8
15	4	5	4	3	5	5	8.4
16	5	4	4	4	4	5	8.8
17	4	5	5	5	5	5	9.6
18	3	4	5	4	5	5	8.4
19	5	4	4	4	5	5	8.8
20	4	5	4	5	5	5	9.2
21	4	4	4	4	4	4	8
22	3	4	4	3	3	3	6.8
23	5	5	4	3	5	5	8.8
24	5	5	5	4	5	5	9.6

	81%	86%	84%	79%	93%	85%	44%
Statements	Statement 1	Statement 2	Statement 3	Statement 4	Statement 5	Expected	Result

EXPERIMENTAL GROUP NATURAL SCIENCE UNIT 4 PEER ASSESSMENT							
STUDENTS	From the list I practised I can correctly spell...	I can copy correctly words from Natural and Social Sc	I can stay focused and on task	When I work with a partner I can speak English during the activity	I can write in English words that I could not write before	Total rubric 07/11	
1	1	1	5	2	3		4.8
2	4	4	2	4	4	4	7.2
3	5	4	5	5	5	5	9.6
4	5	5	4	3	2	2	7.6
5	5	5	5	5	5	5	10
6	5	4	2	3	4	4	7.2
7	3	4	3	4	5	5	7.6
8	3	4	4	2	4	4	6.8
9	4	4	4	4	4	4	8
10	5	4	5	4	4	4	8.8
11	5	4	4	4	4	4	8.4
12	4	4	5	4	5	5	8.8
13	1	5	5	4	5	5	8
14	5	2	2	3	4	4	6.4
15	4	1	5	2	5	5	6.8
16	5	5	5	4	5	5	9.6
17	3	5	4	5	4	4	8.4
18	5	4	4	4	4	4	8.4
19	5	4	5	3	5	5	8.8
20	5	4	5	5	5	5	9.6
21	3	4	4	3	4	4	7.2
22	5	4	5	5	5	5	9.6
23	5	4	5	4	4	4	8.8
24	4	4	3	3	5	5	7.6

	83%	78%	83%	74%	87%	81%	79%
Statements	Statement 1	Statement 2	Statement 3	Statement 4	Statement 5	Expected	Result

29. RESULTS OF THE EXPERIMENTAL GROUP IN LCPC QUESTIONNAIRES TERM 2

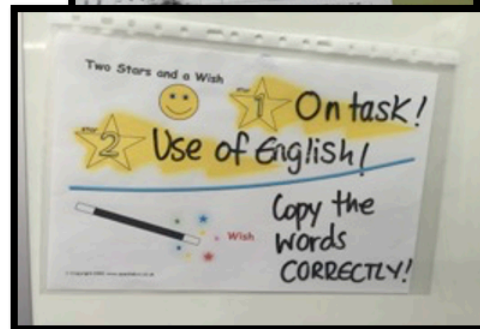
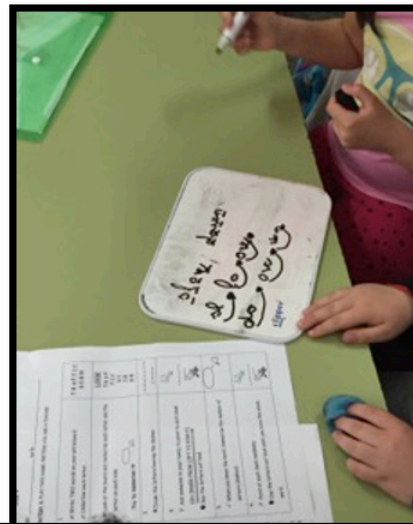
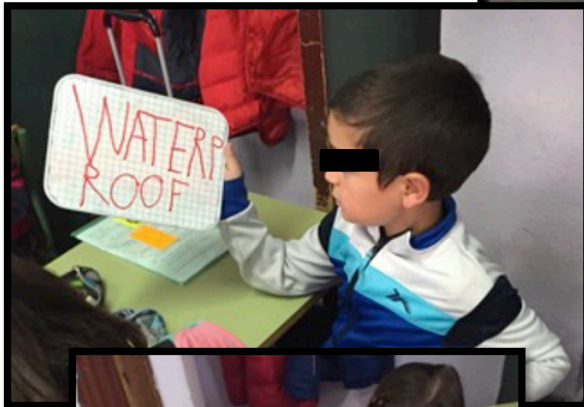
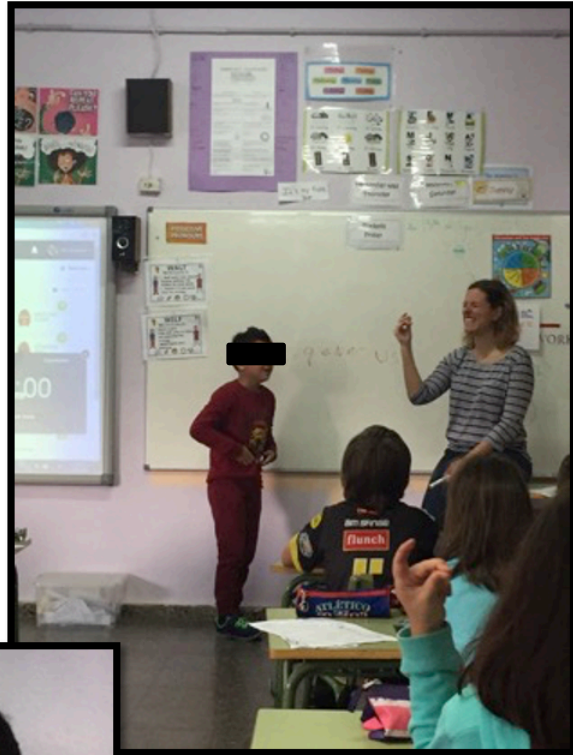
LCPC RESULTS					
STUDENTS	GENDER	%VISUAL	%AUDITORY	%KINAESTHETIC	RESULT
1	Female	31%	35%	34%	Auditory
2	Male	37%	34%	29%	Visual
3	Female	37%	32%	31%	Visual
4	Male	32%	37%	31%	Auditory
5	Male	43%	34%	23%	Visual
6	Male	28%	41%	31%	Auditory
7	Female	40%	38%	22%	Visual
8	Male	30%	33%	37%	Kinaesthetic
9	Male	30%	39%	31%	Auditory
11	Female	35%	42%	23%	Auditory
13	Female	34%	33%	34%	Visual
14	Male	35%	33%	32%	Visual
15	Female	33%	35%	33%	Auditory
16	Male	45%	34%	21%	Visual
17	Male	40%	34%	25%	Visual
18	Male	38%	36%	26%	Visual
19	Male	34%	32%	34%	Visual
20	Male	36%	33%	31%	Visual
22	Female	33%	35%	32%	Auditory
23	Male	36%	40%	23%	Auditory
24	Male	36%	35%	29%	Visual

Visual	Auditory	Kinaesthetic
12	8	1

Male													
Student	Sexo	%Visual	%Auditory	%Kinaesthetic		NATURAL SCIENCE U1	NATURAL SCIENCE U2	SOCIAL SCIENCE U1	SOCIAL SCIENCE U2	NATURAL SCIENCE U3	NATURAL SCIENCE U4	SOCIAL SCIENCE U3	SOCIAL SCIENCE U4
Student 16 -V	Male	45%	34%	21%	Visual	17%	40%	58%	47%	53%	67%	33%	67%
Student 6 - A	Male	28%	41%	31%	Auditory	92%	93%	92%	73%	93%	100%	100%	100%
Student 8 - K	Male	30%	33%	37%	Kinaesthetic	25%	47%	50%	27%	47%	80%	0%	80%

Female													
Student	Sexo	%Visual	%Auditory	%Kinaesthetic		NATURAL SCIENCE U1	NATURAL SCIENCE U2	SOCIAL SCIENCE U1	SOCIAL SCIENCE U2	NATURAL SCIENCE U3	NATURAL SCIENCE U4	SOCIAL SCIENCE U3	SOCIAL SCIENCE U4
Student 7 -V	Female	40%	38%	22%	Visual	33%	80%	100%	0%	87%	100%	33%	100%
Student 11 -A	Female	35%	42%	23%	Auditory	25%	93%	92%	67%	100%	100%	60%	100%
Student 13. K	Female	34%	33%	34%	Visual	0%	33%	33%	20%	20%	53%	20%	67%

30. CLASS PHOTOGRAPHS



31. RESUMEN TESIS EN ESPAÑOL

“El impacto de la estrategia de ortografía de la Programación Neurolingüística en la enseñanza de asignaturas de Aprendizaje Integrado de Contenido y Lengua en colegios bilingües”

Esta tesis doctoral está dividida en dos secciones diferentes: la primera ha consistido en el estudio de la base teórica en los que aspectos como la diversidad del alumnado, las razones por las cuales enseñar específicamente ortografía, Aprendizaje Integrado de Contenido y Lengua (AICLE/CLIL en inglés) y Programación Neurolingüística (PNL/NLP en inglés) en los tres primeros capítulos. Esta justificación teórica ha sido diseñada con el empeño de ilustrar aquellos conceptos y teorías que ayudarán al lector a entender fundamentos de este estudio experimental. Por este motivo, los estudios más relevantes conectados a los objetivos de investigación reflejados han sido seleccionados (ver capítulos del 1 al 3).

La segunda parte de esta tesis doctoral presenta la metodología y el plan de trabajo donde se recogen el contexto sociocultural, los participantes, el diseño de la intervención, así como los instrumentos para la recolección de datos (ver capítulo 4). Posteriormente los resultados de un primer estudio piloto se analizan (ver capítulo 5), y que aportan una importante contribución para la elaboración de la siguiente investigación en la cual se analizan tanto datos cuantitativos como cualitativos (ver capítulos 6 y 7).

Finalmente, el último capítulo tiene como objetivo responder a las preguntas de investigación mencionadas con anterioridad basados en los resultados obtenidos. De la misma manera, este capítulo concluye con sugerencias para nuevas y futuras investigaciones (ver capítulo 8). Así mismo, se incluye la bibliografía sobre la cual se apoya esta investigación (ver capítulo 9) y los apéndices que han sido necesarios para el desarrollo de la misma.

A continuación, se ofrece un breve resumen en castellano que intenta proporcionar los antecedentes, objetivos, preguntas de investigación e hipótesis de esta tesis doctoral. Asimismo, se presentan la metodología del estudio junto con las conclusiones, implicaciones y limitaciones más relevantes derivadas del análisis de los resultados. Finalmente, se recogen futuras líneas de investigación originadas de este estudio.

1. Antecedentes

El Aprendizaje Integrado de Contenido y Lengua (AICLE/CLIL en inglés) ha sido un reto para ambos, alumnos que tienen que aprender contenidos en una lengua extranjera y docentes que se han convertido en profesores de inglés sin importar el contenido que impartan. En ese mismo contexto, se espera que el alumnado de colegios bilingües sea capaz de producir una gran variedad del lenguaje en asignaturas de contenido, lo que puede ser un gran reto debido a sus recursos limitados (Halbach, 2012). En los colegios bilingües, al comienzo de la educación primaria, se aprende a leer y escribir en dos lenguas de manera simultánea. Por lo tanto, en muchas ocasiones las destrezas escritas y la ortografía quedan relegados con la esperanza de adquirir las destrezas orales en primer lugar. Sin embargo, el alumnado CLIL tiene que afrontar palabras clave específicas relacionadas con el mundo de las ciencias con limitadas destrezas en la lengua extranjera. Debido a que se espera que el alumnado CLIL use estas palabras en diferentes contextos de aprendizaje, parece de vital importancia encontrar nuevos enfoques que les ayude a superar los retos adicionales de aprender a leer y escribir en una lengua extranjera.

El inglés se caracteriza por ser una lengua cuya ortografía es especialmente ambigua debido a sus irregularidades y es por ello por lo que, en ocasiones, parece un aspecto poco deseable de aprender por parte de los alumnos (Cristal, 1997). Además, en inglés las relaciones entre sonido y grafía son muchas veces impredecibles (Borgwaldt, et. al., 2006). Por lo tanto, parece conveniente encontrar nuevas maneras y perspectivas para reducir la brecha entre el desarrollo de las destrezas orales en los primeros años de la educación bilingüe y el desarrollo de las destrezas escritas en el proceso de la adquisición de la lengua extranjera. No en vano, varios estudios sugieren que las destrezas escritas contribuyen al refuerzo de la lengua extranjera (Harmer, 1998) y que un correcto aprendizaje de la ortografía es clave para un lector y escritor competente (Templeton y Morris, 1999; tomado de Adams 1990 y Perfetti 1992).

En el contexto de la educación bilingüe, la ortografía se hace necesaria desde el mismo momento en el que los alumnos empiezan a escribir palabras (Aliaño, 2017). Como consecuencia, para este estudio se han investigado estrategias por las cuales se considera que los alumnos aprenden ortografía eficazmente. En este sentido, el informe *Durham NLP in Education* (Benson y Carey, 2006) ofrece un supuesto práctico sobre el aprendizaje de ortografía utilizando estrategias de la Programación Neurolingüística (PNL/NLP en

inglés) que concluía que el uso de distintos tipos de información sensorial tuvo un impacto clave en la capacidad de los alumnos para memorizar la ortografía.

Richard Bandler y John Grinder (1975) acuñaron el término *Neurolinguistic Programming* (NLP) que se basa en tres términos fundamentales: *Neuro* tiene relación con cómo el cerebro interactúa con el entorno; *Linguistic* se refiere a la traducción de la información que el cerebro ha obtenido del exterior y cómo este se aplica a nuestro lenguaje verbal y no verbal; *Programming* describe cómo esta información a su vez se traduce en el comportamiento humano y patrones de pensamiento. Cada uno de nosotros experimenta el mundo de diferente manera. Por lo tanto, es claro que cada individuo va a hacer una traducción diferente de los estímulos que el cerebro obtiene del exterior. Basado en este hecho, Bandler y Grinder (1975) proponen la suposición básica en la PNL: “El mapa no es el territorio”. Krusche (2006) además añade que el mapa de la realidad que construimos está supeditado a experiencias subjetivas que son las que hacen reaccionar, tomar decisiones y comportarse de cierta manera.

En este sentido, la PNL se basa en una serie de suposiciones⁹⁸ que no son otra cosa que creencias fundamentales para, precisamente, traducir las representaciones internas de cada individuo (Elston y Spohrer, 2009). O’Connor y Seymour (1990) afirman que estas creencias actúan como filtros que a veces pueden impedir el éxito y que estos filtros se pueden cambiar para obtener mejores resultados. De hecho, específicamente sugieren que cuando alguien piensa que algo es posible y empieza a comportarse en consecuencia, el éxito está mucho más cerca. Llevado al mundo de la enseñanza de idiomas, Lashkarian y Sayadian (2015) sugieren que la PNL puede ayudar a alumnos que aprenden inglés como lengua extranjera aumentando motivación y reduciendo su ansiedad provocando así la mejora del aprendizaje. De la misma manera, Pishghadam y Shayesteh (2014) aluden a la PNL como una herramienta complementaria en la enseñanza de una segunda lengua como un enfoque de apoyo para los alumnos en su camino hacia la excelencia. Sin embargo, desde su creación, se sigue estimando que existe poca investigación sobre la PNL. Por un

⁹⁸ Tosey y Mathison (2003a: 383) sugieren las siguientes suposiciones como las más comunes en manuales de PNL: El mapa no es el territorio; Mente y cuerpo son parte de la misma estructura cibernética; Todo comportamiento tiene buenas intenciones; La gente está tomando las mejores decisiones disponibles en cada situación; Cada limitación que se nos presenta es un logro único para el ser humano; No hay fracaso, solo *feedback*; El significado de tu comunicación es la respuesta que obtienes; La consciencia es un fenómeno limitado (traducción propia).

lado, algunos autores sugieren que hay una falta de investigación académica sobre cómo se usa en la práctica educativa (Tosey y Mathison, 2010), en la teoría del aprendizaje (Craft, 2001), en la enseñanza del inglés (Harris, 2001; Farahani, 2018) así como la escasez de estudios empíricos en estos u otros campos (Diamantopoulos et al., 2009; Witowski, 2010). De la misma manera, la escasez de investigaciones del efecto de la PNL en contextos CLIL son prácticamente inexistentes.

2. Objetivos, preguntas e hipótesis de la investigación

En un intento de arrojar luz sobre el efecto que la Programación Neurolingüística puede tener en asignaturas de Aprendizaje Integrado de Contenido y Lengua, este estudio presenta un doble objetivo. Por una parte, pretende contribuir a literatura existente encontrando nuevas perspectivas sobre el papel de la ortografía para estudiantes españoles en contextos CLIL. Por otro lado, este estudio ha presentado ejemplos prácticos para la enseñanza de la ortografía que pretenden facilitar las dificultades de la lengua escrita para los alumnos de un contexto bilingüe. A tenor de esto, dos estrategias visuales de ortografía adaptadas de la PNL (Grinder, 1991) fueron puestas en práctica en el intento de aumentar la conciencia ortográfica y rendimiento de una manera motivadora. Además, dado que las creencias y sistemas de representación o estilos de aprendizaje son una parte importante de la PNL, este estudio también ha investigado el rol que juegan estos dos factores en el aprendizaje de la ortografía. Siguiendo este doble objetivo, este estudio se divide en dos fases: un estudio piloto con 50 alumnos en 2016 y un estudio principal con 48 alumnos en el curso 2019/2020 en segundo de educación primaria de un colegio bilingüe de la Comunidad de Madrid. Dos estrategias de ortografía originarias de la PNL fueron introducidas en el grupo experimental mientras que el grupo de control copiaba palabras como práctica de ortografía en el estudio principal.

Los objetivos generales de esta tesis doctoral, por un lado, han pretendido identificar los elementos clave de la estrategia de ortografía de la PNL. De esta manera, se ha intentado ofrecer a los alumnos con recursos para acortar la distancia entre los primeros cursos de educación bilingüe donde se da más importancia a las destrezas orales de la lengua extranjera y los cursos posteriores que exigen el uso de unas correctas destrezas escritas. Así mismo, esta tesis doctoral ha pretendido poner en práctica la estrategia de la ortografía de la PNL mientras se analizaba la efectividad de esta acción. Por otro lado, esta

tesis doctoral también ha examinado el papel que los estilos de aprendizaje juegan en el aprendizaje de la ortografía.

Estos objetivos generales han dado lugar a otros objetivos específicos que buscaban encontrar estrategias para la mejora de la motivación en el aprendizaje de la lengua extranjera que permitieran facilitar el difícil proceso hacia la lectoescritura al que se enfrentan los alumnos de contextos bilingües. También ha pretendido analizar si el papel de las creencias y el auto concepto interfieren con el aprendizaje. Por último, se ha analizado si la estrategia de aprendizaje de la ortografía que ofrece la PNL obtiene mejores resultados que cuando se utilizan otros métodos como la copia de listas de palabras.

Teniendo estos objetivos en cuenta, la presente tesis doctoral se ha basado en el intento de responder a las siguientes preguntas de investigación que se dividen en tres grandes bloques: el impacto que la enseñanza de la estrategia de la ortografía de la PNL tiene sobre el aprendizaje del vocabulario específico de las áreas de Ciencias Naturales y Ciencias Sociales en un contexto CLIL; el papel que tienen las creencias positivas sobre el uso de las diferentes estrategias de aprendizaje de ortografía implementadas y su relación con los resultados en los controles de ortografía; y, por último, el papel que juegan los estilos de aprendizaje en el aprendizaje de la ortografía. Las preguntas de investigación son las siguientes:

1. ¿Es el uso de la estrategia de la ortografía de la PNL una práctica docente eficaz para mejorar la conciencia ortográfica y rendimiento? ¿Puede el uso de la estrategia de la ortografía de la PNL mejorar la habilidad ortográfica de los estudiantes en asignaturas de contenido y lengua? ¿Es la estrategia de la ortografía de la PNL útil para memorizar la ortografía de las palabras de contenido? Si así fuere, ¿el uso de estrategias de la PNL aumentará la motivación hacia las destrezas escritas?
2. ¿Crean las creencias positivas sobre el trabajo ortográfico algún cambio en el rendimiento de la ortografía? ¿Aquellos alumnos que creen que la estrategia de la ortografía de la PNL es efectiva obtienen mejores resultados en los controles ortográficos? ¿Aquellos alumnos que creen que copiar palabras es efectivo obtienen mejores resultados en los controles ortográficos? ¿Tendrá el uso de cuestionarios de autoevaluación y evaluación de pares alguna consecuencia sobre las creencias de los alumnos y el auto concepto?
3. ¿Afectan los estilos de aprendizaje en la habilidad de producir una correcta ortografía? Si así fuere, ¿Los estudiantes visuales rinden mejor en los controles

ortográficos? ¿Hará el uso de la estrategia de la ortografía de la PNL alguna diferencia en aquellos alumnos con preferencia auditiva o kinestésica?

Derivadas de estas preguntas de investigación se han planteado las siguientes hipótesis:

1. El uso de la estrategia de la ortografía de la PNL en el aprendizaje de campos léxicos en asignaturas de contenido y lengua no solo mejorará la conciencia ortográfica y rendimiento, sino que además ayudará a los estudiantes a ser mejores escritores en un entorno de aprendizaje motivador y significativo.
2. Las creencias positivas hacia una estrategia de la ortografía en particular ayudarán a los estudiantes a obtener mejores resultados en los controles ortográficos.
3. Ya que la estrategia de la ortografía de la PNL trata de la visualización de palabras, los estudiantes cuya preferencia de aprendizaje sea visual obtendrán mejores resultados en los controles ortográficos.

3. Metodología del estudio

Los resultados del estudio piloto señalaban que había indicios de que el uso de las estrategias de la ortografía de la PNL había sido beneficioso para los alumnos mejorando la ortografía de palabras clave de contenido de Ciencias Naturales y Sociales de una manera efectiva y motivadora. Basada en esta experiencia y teniendo en cuenta a los grupos de alumnado participante y el contexto de educación bilingüe, se diseñaron nuevas actividades experimentales que fueron empíricamente testadas en una segunda fase como el estudio principal. En cuanto al diseño de las estrategias de la ortografía de la PNL, se estudiaron diferentes estrategias que ilustraban los pasos a seguir e instrucciones claras para dar a los alumnos durante la práctica de escritura de una palabra⁹⁹. De esta manera, se encontró que todas las estrategias tenían características similares y que fundamentalmente se trataba de entrenar a los alumnos a utilizar la memoria visual, como,

⁹⁹ La manera en la que los estudios presentan las estrategias de la ortografía de la PNL es muy similar. En el capítulo 3 se ilustran los ejemplos prácticos más representativos y aplicación de las estrategias en el aula (Grinder, 1991; Revell y Norman, 1997; Dilts, 1997; y Gabarró 2010, 2012) .

por ejemplo, tratando de deletrear una palabra al revés para obligar al cerebro a visualizar esa palabra en concreto.

Tras este análisis se adaptaron dos estrategias tomadas de Grinder (1991) (ver apéndices 1 y 2) que se pusieron en práctica en el grupo experimental mientras que el grupo de control copiaba listas de palabras para practicar la ortografía del mismo número de palabras. Por un lado, se realizó un pre-test de control que se llevaría a cabo a través de un dictado de palabras antes de comenzar una unidad temática de Ciencias Naturales o Ciencias Sociales y que buscaba aquellas palabras con especial dificultad. Durante las dos o tres semanas siguientes que se desarrollaba el aprendizaje de contenido y lengua, y antes de concluir la unidad, cada grupo de alumnos practicaría el vocabulario científico específico propuesto en el libro de texto¹⁰⁰ usado en el colegio bilingüe del estudio.

Durante este proceso, además, se introdujeron los controles de creencias sobre la eficacia de las estrategias de ortografía aplicadas en cada grupo (PNL en el grupo experimental y copia de palabras en el grupo de control) cuyo objetivo era hacer que los alumnos reflexionaran sobre sus actitudes y creencias sobre las estrategias propuestas. En un intento de dar un enfoque académico a este control de creencias, se tomó como punto de el *Attitudinal questionnaire* que Nahari y Alfadha (2016) usaron en su estudio sobre el efecto del uso de la visualización de palabras para la mejora de las habilidades ortográficas de los alumnos, que a su vez se inspiraba en otro estudio realizado por Mesmeh (2012) basado en la estrategia de ortografía *Cover, Copy, Compare*. Debido a la diferencia de edad y contextos entre los participantes de sus estudios y las características de los grupos de alumnos participantes en este estudio¹⁰¹, las 15 afirmaciones en las que consistían se redujeron a 7 afirmaciones en las que se simplificó y adaptó el lenguaje (ver apéndice 4). En este cuestionario los alumnos tenían que elegir entre una escala Likert de 5 puntos¹⁰².

Además, se diseñaron otros cuestionarios de evaluación y evaluación de pares que fueron introducidos regularmente durante el desarrollo de la práctica de la ortografía (ver apéndice 7). Una vez concluida la unidad temática, se mediría la eficacia de la estrategia de la ortografía de la PNL en el grupo experimental y la copia de listas de palabras en el

¹⁰⁰ *Learning Lab Natural Science Madrid 2 Primary y Learning Lab Social Science Madrid 2 Primary (Ed. Santillana)*.

¹⁰¹ Nahari y Alfadha (2016) centran su estudio en alumnos de sexto curso en una escuela privada de Arabia Saudí y Mesmeh (2012) en alumnos de noveno curso en una escuela masculina de la franja de Gaza.

¹⁰² Los estudiantes tenían que elegir entre las siguientes opciones con puntuaciones del 5 al 1: Por supuesto que sí, Sí, No lo sé, No, Por supuesto que no.

grupo de control mediante otro dictado de palabras en un control de ortografía. Los resultados de todos estos controles, dictados y cuestionarios permitieron conocer no solo la mejora de la corrección ortográfica y las creencias del alumnado, sino que además su comparación permitiría encontrar posibles relaciones entre los mismos.

Paralelamente, y en la creencia de que los estudiantes con preferencia por el aprendizaje visual se beneficiarían poderosamente de estrategias visuales de ortografía, hacia la mitad del estudio (diciembre, 2019), se llevó a cabo un cuestionario cuyo objetivo era encontrar el sistema de representación o estilo de aprendizaje de preferencia en cada alumno. Este cuestionario fue adaptado de la *Learning Channel Preference Checklist (LCPC)* (O'Brien, 1990) (ver apéndice 3) y enviado a las familias, con carácter opcional, acompañado de una carta presentando el estudio y la manera de proceder para realizar el cuestionario adecuadamente. Las 36 afirmaciones que contienen este cuestionario se dividen en tres grandes bloques de 12 afirmaciones para cada estilo de aprendizaje predominante: visual, auditivo y kinestésico. Una vez más los estudiantes elegirían en una escala Likert de 5 puntos¹⁰³ cómo las diferentes afirmaciones le aplicaban a cada uno de ellos. De la muestra final de participantes, 3 alumnos y 3 alumnas con alta preferencia a cada estilo de aprendizaje específico fueron seleccionados en esta parte del estudio. Los resultados obtenidos de la realización de este cuestionario y su posterior análisis comparativo con los resultados de los controles de ortografía permitirían encontrar relaciones entre los estilos de aprendizaje y el aprendizaje de la ortografía.

Finalmente, otros cuestionarios opcionales como las cartas a la profesora (ver apéndice 6) pretendían ofrecer un espacio abierto para los estudiantes que quisieran compartir su experiencia con el aprendizaje de la ortografía, así como otros aspectos relacionados con la vida escolar de manera optativa durante todo el curso. Por otra parte, durante el análisis de la metodología se puso también énfasis en el conocimiento de la dinámica del aula donde compartir los objetivos y expectativas, así como proporcionar *feedback* estuvieran en el centro de la práctica docente que acompañaba al estudio (ver WALT & WILF posters en apéndice 8). Así mismo, el cuaderno de investigación y las rúbricas de observación que se cumplimentaron por parte de los auxiliares de conversación y por mi misma durante el proceso de aprendizaje permitieron profundizar en la visión

¹⁰³ Los estudiantes podían elegir entre estas opciones: Casi siempre, Frecuentemente, A veces, Rara vez, Casi nunca.

global del estudio observando cada alumno/a y grupos de estudiantes cuidadosamente (ver apéndice 9).

En un intento de elegir el mejor enfoque que se ajustara a la naturaleza de mis preguntas de investigación (Ma, 2015), todos los datos recogidos han sido analizados desde un enfoque mixto donde el análisis cuantitativo y cualitativo se complementan permitiendo la triangulación de datos proporcionando y, a su vez, un sentido de validez al estudio (Jicks, 1979). Por un lado, los resultados de los controles de ortografía se compararon con las respuestas de los controles de creencias para analizar si las creencias positivas hacia las estrategias de la ortografía implementadas en cada grupo tenían un impacto en el rendimiento ortográfico. Los resultados y comentarios obtenidos de los cuestionarios de autoevaluación y evaluación de pares fueron analizados para poder hacer las adaptaciones necesarias en la planificación el estudio para los grupos de estudiantes.

Asimismo, el cuestionario *LCPC* añadió información relevante sobre el papel que tienen los estilos de aprendizaje con relación al aprendizaje de la ortografía cuando los resultados obtenidos de este cuestionario fueron comparados con los resultados de los controles de ortografía. Además, aquellos comentarios relevantes realizados por los alumnos en los cuestionarios de autoevaluación, evaluación de pares y cartas al profesor sobre actitudes hacia la práctica de ortografía y creencias de los alumnos fueron tomados en consideración. Igualmente, las notas y comentarios realizados por los auxiliares de conversación en la rúbrica de observación y mis notas en esta rúbrica y en el cuaderno de investigación se han utilizado para complementar y justificar los datos cuantitativos del estudio.

4. Conclusiones e implicaciones derivadas del análisis de resultados

En cuanto a las conclusiones de esta tesis doctoral, el primer bloque de preguntas buscaba responder sobre el impacto de la estrategia de la ortografía de la PNL, así como sobre la motivación de los estudiantes hacia el aprendizaje de las destrezas escritas. En este sentido, los hallazgos sugieren que la ortografía tiende a mejorar cuando es practicada y mejora ligeramente más cuando se practica con estrategias de ortografía de la PNL. La alta tasa de alumnos y alumnas con una o ninguna palabra correcta en los pre-test de ortografía en ambos grupos fueron la declaración de la necesidad de invertir tiempo en el entrenamiento de ortografía. A pesar de que el grupo de control en ambos estudios comenzó con mejores resultados que el grupo experimental en los controles de ortografía, durante el resto del estudio el grupo experimental obtuvo mejores resultados con un mayor

número de palabras escritas correctamente. Se detectó también que el aprendizaje de las estrategias de ortografía de la PNL en la lengua extranjera, para cumplir con los estándares de una clase CLIL, fue un reto añadido por los estudiantes del grupo experimental que hizo que los resultados mejoraran progresivamente según los alumnos ganaban confianza con el uso de la nueva estrategia.

Por otro lado, se encontraron varios factores que tienen efecto en el rendimiento de la ortografía. La motivación de los estudiantes fue clave. La dinámica de clase, compartiendo al inicio de la sesión los objetivos y expectativas de la actividad ayudaron a los estudiantes a estar conectados hacia el aprendizaje, así como les dio un sentido de responsabilidad. La manera en la que las estrategias de ortografía fueron presentadas a los grupos de estudiantes fueron también aspectos que reseñaron al comentar su motivación hacia el aprendizaje de la ortografía. En consecuencia, el grupo experimental que trabajó por pares mientras practicaba las estrategias de ortografía de la PNL se mostró más motivado que el grupo de control que copiaba listas de palabras de manera individual.

Finalmente, la motivación hacia determinadas unidades temáticas de Ciencias Naturales y Ciencias Sociales, así como la dificultad específica de las palabras objeto de estudio en cada una de ellas tuvieron también un impacto sobre el rendimiento ortográfico. De esta manera, unidades temáticas que fueron más motivadoras para los alumnos (i.e., *Natural Science U4: Plants*) tuvieron resultados más positivos. Sin embargo, otras unidades con vocabulario más complicado para los estudiantes (i.e., *Social Science U2: rain-gauge, weather forecast; Social Science U3: livestock, plateau*, entre otras) redujeron el número de palabras correctas en los controles de ortografía de cada grupo. Igualmente, el tiempo del estudio fue un factor que tuvo un efecto en la motivación del alumnado. En consecuencia, las unidades temáticas llevadas a cabo en los finales de trimestre, cuando el alumno está más cansado, si además esta tiene vocabulario exigente, como en el caso de la segunda unidad de Ciencias Sociales (i.e., *Wind and rain*) empeoran los resultados en el rendimiento de la ortografía. Por último, otro factor que se advierte como decisivo en el rendimiento de la ortografía son aspectos más emocionales como la personalidad del alumnado, sus circunstancias sociales y necesidades educativas especiales. Sin embargo, el segundo bloque de preguntas proporcionó más información a este respecto.

Con relación al segundo bloque de preguntas, este pretendía analizar la relación entre creencias positivas hacia las estrategias de ortografía utilizadas y el rendimiento ortográfico en los controles de ortografía. En un intento de ganar conocimiento sobre la

eficacia de estas estrategias, los resultados de este control de creencias se analizaron en tres fases diferentes. En una primera fase, los resultados de cada afirmación en el control de creencias se analizaron de manera aislada para luego cruzarlos con los resultados de los controles de ortografía en una segunda fase. Por último, se calculó el índice de correlación *Pearson* con el propósito de encontrar información individual de cada alumno que pudiera dar nueva información y perspectiva al estudio.

Los cuestionarios de creencias y los comentarios hechos por el alumnado en este cuestionario, así como en las autoevaluaciones y evaluación de pares indicaron que los alumnos del grupo experimental se mostraron más motivados hacia la práctica de la ortografía. Sin embargo, la mayoría de las creencias del alumnado hacia las estrategias puestas en práctica para el aprendizaje de la ortografía se mantuvieron altas en ambos grupos, validando todas las estrategias como eficaces, sin importar el resultado obtenido en los controles de ortografía. Una revelación importante fue que desde el primer trimestre se encontró evidencia de una pérdida de motivación hacia la copia de palabras por parte de algunos alumnos grupo de control que contestaban en repetidas ocasiones que la copia de palabras no les parecía ni divertido, ni interesante. A pesar de esto, copiar palabras para la práctica de la ortografía proporcionaba confianza a los alumnos ya que sabían claramente lo que tenían que hacer y qué se esperaba de ellos. Por este mismo motivo, el simple hecho de copiar bien las palabras indicadas o incluso hacerlo con buena letra fue suficiente para hacer creer a los estudiantes que esta estrategia era efectiva para ellos. El grupo experimental, por su parte, también se mostró altamente motivado hacia la práctica de la ortografía con estrategias de la PNL. Igualmente, algunos alumnos en este grupo indicaron tener dificultades entendiendo o practicando las estrategias de ortografía de la PNL. Gracias a los resultados de este cuestionario, así como los comentarios hechos por los alumnos y las notas recogidas por los observadores, se pudieron apoyar a aquellos alumnos que tuvieron especial dificultad comprendiendo o utilizando estas estrategias.

Durante el análisis de la correlación *Pearson* que comparaba creencias y rendimiento ortográfico, se observó que en la mayoría de las unidades no existía correlación o se trataba de una correlación moderada. A pesar de esto, el grupo experimental mostró una mejora de resultados de unas primeras unidades temáticas sin correlación entre creencias y ortografía a un índice de correlación moderado de manera consistente en las 3 últimas unidades del estudio. Sin embargo, el grupo de control con excepción de la última unidad del primer trimestre y primera del segundo, que obtuvieron

un índice de correlación moderado, el resto de las unidades presentan una correlación baja entre creencias y rendimiento de la ortografía.

Como resultado de este análisis, no se pudo concluir que la visión positiva sobre la ortografía, buen concepto sobre sí mismos y creencias ayudaran al alumnado a desempeñar eficazmente en los controles de ortografía. Sin embargo, la progresiva mejora de los resultados de los controles de ortografía y la distancia más corta entre creencias y rendimiento ortográfico en el grupo experimental se entendió como una actitud más positiva hacia el aprendizaje de la ortografía con PNL cuando fue comparado con los resultados del grupo de control. El grupo de control, sin embargo, empeoró resultados en ortografía mientras que indicaba la pérdida de motivación en afirmaciones clave del control de creencias (i.e., *I think this strategy is fun and interesting.*). Por el contrario, los resultados del grupo experimental revelaban que trabajar en pares tuvo una influencia positiva ya que los alumnos experimentaban la actividad como más motivadora.

Además de la motivación, el análisis de los controles de creencias resaltó otros aspectos interesantes sobre la naturaleza de las respuestas del alumnado como la madurez, el carácter, la personalidad y las dificultades de aprendizaje. Al aplicar un +/- 20% de diferencia de margen aceptable durante el análisis de la correlación *Pearson* entre los resultados de ambos controles (creencias y ortografía), se observó que los mismos estudiantes fueron más capaces de acercar creencias positivas y rendimiento en los controles de ortografía durante todo el estudio en ambos grupos. Una vez analizados profundamente los resultados de sus controles de ortografía y creencias, así como los comentarios relevantes realizados por estos alumnos y las notas tomadas durante el proceso, se concluyó que todos coincidían en tener un grado de responsabilidad hacia el estudio y madurez mayor que el resto de los alumnos de su grupo. De la misma manera, se encontró que aquellos estudiantes que mantenían unos altos resultados en los controles de creencias, pero bajo rendimiento en los controles de ortografía eran los mismos alumnos durante todo el estudio. Habiendo analizado sus resultados en todos los controles de manera profunda, se concluyó que los alumnos con más dificultades con la ortografía o la lengua extranjera tendían a contestar positivamente para enmascarar sus dificultades o simplemente porque pensaban que ser positivos era lo esperado o lo correcto.

Es aquí donde entraron en juego la personalidad y carácter del alumnado, así como las dificultades de aprendizaje y la motivación hacia el aprendizaje en general y la ortografía en particular. Se encontraron indicios de que los estudiantes más tímidos e

introvertidos trataban de pasar desapercibidos contestando “lo correcto” en el control de creencias. De la misma manera, se observó que los alumnos con dificultades de aprendizaje y los alumnos con necesidades educativas específicas indicaban creencias positivas hacia las estrategias de ortografía implementadas, pero obtenían bajos resultados en los controles de ortografía. En este sentido, se sugirió que tanto la motivación hacia el aprendizaje a pesar de las dificultades como la estrategia de enmascarar precisamente esas dificultades contestando a todo positivamente pueden haber influenciado en las respuestas del alumnado en los controles de creencias. Sin embargo, estudiantes con una personalidad más extrovertida o con más confianza en sí mismos se atrevían a retar algunas de las afirmaciones del control de creencias con una opinión más honesta y más de acuerdo con sus resultados en los controles de ortografía¹⁰⁴.

Con respecto a los cuestionarios de evaluación y evaluación de pares se observó que, al igual que en los controles de creencias, las respuestas positivas por parte de los alumnos durante el proceso de práctica de la ortografía superaban sus resultados en los controles de ortografía. En este sentido los hallazgos sugieren que hacia el final del estudio había evidencias de que el grupo experimental comenzaba a ser capaz de evaluar sus esfuerzos más de acuerdo con los resultados obtenidos en los controles de ortografía.

El hecho de que los estudiantes el grupo de control dieran un resultado muy positivo en la afirmación “*When I work with a partner I can speak English during the activity*” sugirió que los alumnos a esta edad (7-8 años) tienden a autoevaluarse sin hacer divisiones entre asignaturas o actividades. En este sentido, si los alumnos habían sido capaces de pedir ayuda en inglés durante la tarea de copiar listas de palabras, utilizar inglés para decir algo a un/a compañero/a o habían utilizado inglés durante una actividad anterior se autoevaluarían positivamente al ser preguntados por ello.

El cuestionario de evaluación y evaluación de pares incluían también un espacio para hacer comentarios en una sección llamada “*Two stars and a wish*” donde los alumnos tenían que hacer dos comentarios positivos y un deseo de mejora sobre la estrategia de ortografía utilizada o su actuación durante el proceso. Un gran número de estudiantes reportó como comentario positivo la buena letra como una característica importante del

¹⁰⁴ Se observó que el S2 del grupo de control tenía estas características. Además, mostraba muy buenos resultados en los controles de ortografía pero un nivel menor de creencias positivas. Por lo tanto, era uno de los pocos alumnos cuyos resultados de ortografía eran más altos que su nivel de creencia positiva hacia la copia de palabras como práctica de ortografía. Por otro lado, al ser el alumno seleccionado como “kinestésico” en la muestra que permitía analizar el rol que juegan los estilos de aprendizaje en el aprendizaje de la ortografía, sus controles y respuestas en todo tipo de cuestionarios así como rúbricas de observación fueron minuciosamente examinados para buscar posibles relaciones.

trabajo realizado durante la práctica de la ortografía. El grupo experimental a su vez indicó como positivo ser capaz de trabajar con otros compañeros durante la práctica de las estrategias de la ortografía de la PNL. Esto además sugirió que las actividades que requerían de la colaboración entre estudiantes desarrollaban un sentimiento de compañerismo que les ayudaban a ser capaces de adaptarse a diferentes situaciones. Con respecto a los deseos de mejora, casi la mayoría de los alumnos que proporcionó comentarios realzó la necesidad de utilizar el inglés como vehículo para comunicarse en el aula de manera más consistente. En conclusión, estos cuestionarios fueron una herramienta efectiva para la profesora para hacer las adaptaciones necesarias que atajaran, por ejemplo, problemas de comprensión con la lengua o las estrategias de ortografía. También fue una herramienta efectiva para los estudiantes en tanto en cuanto les ofrecía una ayuda y espacio para reflexionar sobre su aprendizaje.

Aunque esta tesis doctoral no puede concluir que el uso de cuestionarios de autoevaluación y evaluación de pares supusiera un cambio a mejor en las creencias y auto concepto de los alumnos, éstos se convirtieron en participantes activos y responsables de su propio aprendizaje. Por lo tanto, involucrar a los alumnos en su evaluación desde una edad temprana puede ayudar a desarrollar las destrezas necesarias para ser más conscientes de su propio aprendizaje.

Finalmente, el último bloque de pregunta buscaba analizar el papel que juegan los estilos de aprendizaje en el aprendizaje de la ortografía. Los resultados del cuestionario *LCPC* mostraron que más de la mitad de los alumnos en ambos grupos tenía preferencia por el aprendizaje visual (alrededor del 60% en ambos grupos) seguido del auditivo (24% en el grupo de control y 38% en el experimental) y por último kinestésico con un mínimo número de alumnos con esta preferencia en cada grupo (14% en el grupo de control y 5% en el experimental). En la creencia de que los estudiantes con preferencia visual se beneficiarían más de una estrategia visual de la ortografía, se seleccionaron 3 alumnos y 3 alumnas con una preferencia marcada por cada uno de los estilos de aprendizaje (visual, auditivo y kinestésico) para probar esta creencia y ver los cambios en los estudiantes con preferencia auditiva y kinestésica al utilizar diferentes estrategias para el aprendizaje de la ortografía (copia de lista de palabras en el grupo de control y PNL en el grupo experimental).

Sin embargo, se hizo una nota de advertencia porque fue particularmente difícil encontrar una alumna auditiva en el grupo de control que no fuera sujeto de una dificultad

de aprendizaje como la dislexia. Estas alumnas (2 en el grupo de control y 1 en el grupo experimental) fueron excluidas de esta parte del estudio ya que sus resultados podrían ser el reflejo de esas dificultades. En consecuencia, se incluyó una sección sobre estas alumnas, fuera de las preguntas de la investigación, que analizó sus resultados en los controles de ortografía según las estrategias de ortografía planteadas en cada grupo. Aunque ninguna alumna pareció beneficiarse de la práctica de la ortografía en ningún grupo, se concluyó que atender a estrategias específicas para el desarrollo de la lectoescritura en inglés hizo que sus dificultades se pusieran de manifiesto de una manera temprana¹⁰⁵. Como consecuencia de esto, la quinta alumna con preferencia auditiva en el grupo de control fue la seleccionada para esta parte del estudio.

En líneas generales se ha podido concluir que, aunque la mayoría de los estudiantes presentaron preferencia por el aprendizaje visual, no siempre los alumnos visuales hacen un mejor papel en los controles de ortografía. Los resultados muestran que, de manera general, los grupos de alumnos escogidos para esta parte del estudio tuvieron mejores resultados que los grupos de alumnas en los controles de ortografía en ambos grupos. Además, con excepción de los alumnos en el grupo de control (kinestésico en el primer trimestre y visual en el segundo trimestre), la norma fue que los alumnos y alumnas con preferencia auditiva en ambos grupos obtuvieran mejores resultados en los controles de ortografía. Por lo tanto, los resultados indican que los estudiantes con preferencia auditiva se benefician de la práctica de la ortografía independientemente de la estrategia utilizada obteniendo mejores resultados. Asimismo, se comprobó que tanto los alumnos como las alumnas con preferencia auditiva en el grupo experimental obtuvieron mejores resultados cuando fueron comparados con los alumnos y alumnas con preferencia auditiva del grupo de control. Estos resultados sugieren que el uso de las estrategias de ortografía de la PNL frente a la copia de lista de palabras ayuda a los alumnos a mejorar su ortografía de una manera más eficaz.

Las excepciones en el grupo masculino del grupo de control mencionadas anteriormente dieron lugar a el estudio de otras hipótesis como consecuencia de un mejor rendimiento en los controles de ortografía. Los datos han mostrado que los alumnos que tienen un mejor dominio de la lengua extranjera y buena evaluación en asignaturas CLIL eran elementos fundamentales para el rendimiento ortográfico. Sin embargo, el profundo

¹⁰⁵ Shaywitz (1998) afirmó que la edad a la que se suele diagnosticar con dislexia es a los 9 años. Por lo tanto, dado que se cumplimentaron los protocolos de evaluación psicopedagógica para su estudio por parte del orientador a finales del primer trimestre cuando aún tenían 7 años se trataba de un diagnóstico temprano.

análisis de los cuestionarios y controles de creencias realizados manifestó que incluso estos alumnos parecían empeorar resultados en los controles de ortografía a la vez que bajaba su motivación por la práctica de la ortografía con las estrategias propuestas. Por lo tanto, una vez más se identificaba la motivación como un elemento importante del rendimiento ortográfico.

Se identificaron además otros elementos relacionados con el rendimiento ortográfico como tales como la personalidad o circunstancias personales de cada alumno/a que han sido mencionados con anterioridad. Asimismo, se apuntó que los estudiantes visuales siempre fueron los segundos en mejores resultados de los controles de ortografía (con excepción del grupo de control masculino durante el segundo trimestre que obtuvo los mejores resultados). Se observó que los estudiantes visuales que formaron parte en esta parte del estudio eran alumnos tímidos que obtenían resultados razonables, buenos o muy buenos en los controles de ortografía. Por otra parte, los estudiantes con preferencia auditiva no solo obtenían mejores resultados, sino que además eran en general, estudiantes con mejores calificaciones en asignaturas CLIL y mejores competencias en la lengua extranjera. Además, también eran más participativos durante las clases. Por lo tanto, los resultados sugieren la posibilidad de que la personalidad y circunstancias personales de cada alumno tienen un efecto sobre su rendimiento académico y ortografía en este caso.

5. Limitaciones y sugerencias para futuras investigaciones

En cuanto a las limitaciones de esta tesis doctoral se establece como principal limitación la falta de investigación académica sobre el uso de esta y otras estrategias de la PNL en el contexto del aprendizaje del inglés como lengua extranjera y en el Aprendizaje Integrado de Contenido y Lengua. Por otro lado, una mayor muestra de participantes en diferentes colegios de la Comunidad de Madrid podría haber proporcionado una mayor comprensión del alcance de las estrategias utilizadas. Este nuevo entendimiento ayudaría a hacer predicciones sobre cómo otros colegios bilingües se pueden beneficiar del uso de las estrategias de ortografía de la PNL en un contexto donde sus creencias, opiniones y estilos de aprendizaje son valorados. Además, un tiempo mayor de estudio, hubiera proporcionado un comprendimiento mayor. Esto provocó la necesidad de realizar cambios y adaptaciones para poder terminar este estudio a tiempo.

Otra limitación del estudio fue mi doble papel como profesora e investigadora que hizo que no pudiera estar centrada exclusivamente en la recogida y análisis de datos. Además de inculcar a los alumnos la importancia de una correcta ortografía mientras que aplicaba y enseñaba estrategias de ortografía también enseñaba contenidos en una lengua extranjera. Además, estaba inmersa en intentar crear un ambiente relajado y una atmósfera acogedora. Por este motivo, la profesora que hay en mí ha hecho que los resultados recogidos en este estudio se ilustren de una manera globalizada donde los resultados cuantitativos se apoyan de los cualitativos obtenidos de la observación y la experiencia. Al añadir la faceta investigadora a mi profesión, esto me ha permitido entender con profundidad cómo aprenden los alumnos mejor en vez de tener mi propio estilo de enseñanza como centro de investigación.

La progresión natural de este estudio es llevarlo a cabo en otros colegios y niveles para comprender completamente la implicación del uso de las estrategias de la PNL en contextos CLIL. Asimismo, un estudio longitudinal para determinar el efecto que las creencias y estilos de aprendizaje tienen en el rendimiento de la ortografía podría también arrojar luz sobre las auto percepciones del alumnado como estudiantes a lo largo del tiempo. Finalmente, más esfuerzos son necesarios para garantizar que más estudios con el foco en estudiantes con dificultades específicas en lectoescritura, que están aprendiendo a leer y escribir en dos lenguas simultáneamente en contextos CLIL, como la dislexia.

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