Synthetic phonics in Spanish bilingual education: Spelling mistakes analysis

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ABSTRACT: Reading and writing in English from early ages is both a need and a must. The search of an effective learning methodology to teach early literacy has made the application of the synthetic phonics method to expand, regardless of the lack of agreement concerning its results. This study is aimed at showing whether this method is effective or not in bilingual educational centres of Madrid (Spain), focussing on the written skills of 640 students, aged 8-9. The errors committed in a 15-frequently-used-word dictation have been classified according to Corder's taxonomy. The non-parametric statistic results show that there are differences in the errors made by the students without specific method instruction (less errors) compared to those students with synthetic phonics instruction. However, these differences have lower level of association and do not indicate a relevant direction. Therefore, it could be concluded that synthetic phonics does not seem to guarantee an efficient learning of spelling for the Spanish students. There is a need to adapt the synthetic phonics method for learners from bilingual schools, as well as to investigate the efficiency of other methodologies to teach writing in English at early stages of literacy.
Key words: methodology, writing, learning, spelling, English.

***Synthetic phonics* en la enseñanza bilingüe en España: análisis de errores ortográficos**

RESUMEN: Leer y escribir en inglés desde edades tempranas es tanto una necesidad como una obligación. La búsqueda de una metodología de aprendizaje efectiva ha hecho que el uso del método *synthetic phonics* se haya extendido sin que exista unanimidad sobre sus resultados. El presente estudio pretende probar la efectividad de dicho método en centros bilingües de la Comunidad de Madrid (España), centrándose en las destrezas escritas de 640 alumnos de 8-9 años. Los errores cometidos en un dictado de 15 palabras de uso frecuente han sido clasificados atendiendo a la taxonomía de Corder. Las pruebas estadísticas no paramétricas evidencian la existencia de diferencias en los errores cometidos por los alumnos sin método de instrucción específico (cometen menos errores) y por los alumnos que siguen el método *synthetic phonics*. Sin embargo, dichas diferencias presentan bajo nivel de asociación y no indican nada relevante. Por ello, se podría concluir que el uso de *synthetic phonics* no parece garantizar un aprendizaje eficiente de la ortografía en el caso del alumnado español. Es nece-

sario adaptar el método *synthetic phonics* para el alumnado de centros bilingües y analizar la eficacia de otros métodos de enseñanza de la escritura en inglés a edades tempranas.
Palabras clave: metodología, escritura, aprendizaje, ortografía, inglés.

1. INTRODUCTION

Teaching L2 writing skills in early literacy stages is an emerging empirical field of research in Spain. However, there have been studies of early writing and reading skills in English as a second language for Spanish-speaking children in other countries (Campion & Mann, 2004; Sun-Alperin & Wang, 2011; Linan-Thompson et al., 2018). These studies have tackled particular difficulties which Spanish-speaking children face while encoding and decoding English words: the complexity of English deep orthography in comparison to Spanish shallow orthography and the irregularity of English spelling. Although lately synthetic phonics has been gaining popularity as a reading/writing methodology in Spain (Rendón-Romero et al., 2021), there is still not sufficient evidence that this methodology is a path to success in the Spanish classroom.

In the recent empirical study on the efficiency of synthetic phonics in England, the results demonstrated that the impact of teaching phonics had a moderate result initially and the effect of phonics instruction faded quickly (Mcquillan, 2018). Furthermore, Bowers (2020, p. 628) claimed that "there is little or no evidence that systematic phonics is better than the main alternative methods used in schools". Likewise, in his recent analysis on the efficiency of synthetic phonics in England, Mills (2021) asserted that there had been no significant improvement in reading outcomes. Examining the evidence of solidity of synthetic phonics instruction *versus* whole language method in England, Solity (2022, p. 45) arrives at the conclusion that far from being an effective methodology, phonics "is a potentially major course of reading difficulties".

Hence, the general objective of this work is to analyze whether the use of synthetic phonics instruction improves spelling performance of the most common words writing in 8-9-year-old Spanish ESL learners. At a more specific level, the current research aims are: 1) to determine the dominant spelling errors committed by young Spanish learners with and without synthetic phonics instruction; and 2) to compare the most common types of spelling errors committed by Spanish children in the dictation of 15 frequent words with and without synthetic phonics instruction.

2. SYNTHETIC PHONICS AND THE ACQUISITION OF EARLY WRITING SKILLS BY L2 LEARNERS

The acquisition of writing skills is a parallel process to learning to read, while children learn the rules of grapheme phoneme correspondences (hereinafter GPC), they simultaneously apply them to encoding phonemes into graphemes. It has been demonstrated that in monolingual children reading and writing share the same cognitive, linguistic, and orthographic processing (Berninger et al., 2002). Nevertheless, when it comes to children whose mother tongue is different from L2, orthographic processing can present a serious difficulty, as according to the script dependent hypothesis, the learners' previous knowledge of their mother tongue's orthography and the predictability of the GPC rules can interfere with their L2 spelling skills (Lindgren et al., 1985). Phonological processing, which encompasses phonological awareness, phonological recording, and phonological memory, becomes the core skill which contributes to the correct acquisition of writing (Stanovich & Siegel, 1994).

The method that encloses all these skills is synthetic phonics (hereinafter SP) proposed by *The Independent Review of Early Reading* (also known as *The Rose Review*) in the UK (Rose, 2006). However, there were critical voices that put the efficacy of this method in doubt. Stuart (2006), the advisor to Rose, argued that there was lack of empirical research to recommend the implementation of SP in the UK educational system. In the same vein, Wyse and Goswani (2008) strongly recommended long-term empirical research to verify the results of this method. Since that time on, there were several empirical studies that recommended the application of SP to teach reading in English-speaking countries, alluding to the rapid speed of fluent word reading in comparison to the children instructed with other methods (Buckingham, 2020; Machin et al., 2018; Stainthorp, 2020).

As SP was considered efficient with monolingual children, it was recommended as the leading method to teach early literacy in other countries. Henceforth, this method was exported without any adjustments worldwide. In Spanish schools, for instance, the most popular didactic material is *Jolly Phonics* (Lloyd, 2007), which was designed for English-speaking children. In their recent empirical research with 7-year-old children on the efficiency of SP in a bilingual school in Spain, Rendon-Romero et al. (2020) propose the implementation of SP to increase L2 learners' reading level. The results of the above-mentioned study showed that the treatment group (SP instruction) achieved better results in English word reading and pseudo-word reading. Likewise, there were several studies that corroborated the efficiency of SP to reading in other countries (Loong & Aziz, 2019; Mustapha, 2019; Rong & Lee, 2020). Nevertheless, there are still doubts whether the universal adoption of this method can lead to success in reading and emergent writing skills (Darnell et al., 2017; Wyse & Goswami, 2008).

The learning objectives of SP are focused on the acquisition of the following: 1) awareness and knowledge of print or how print represents sounds; 2) graphophonic knowledge; 3) phonemic and phonological awareness; 4) lexical knowledge or understanding that certain words collocate; 5) syntactic knowledge or how to predict what comes next (Jolliffe et al., 2019). Hence, although SP is tailored to teach reading, this method of instruction also gives students the ground for spelling words, ergo, writing (Wyse & Goswani, 2008).

SP, as a child-centred approach, encompasses the development of five major skills: 1) leaning letter-sound correspondences (alphabet sounds and diagraphs, such as 'ch', 'ck', etc.); 2) learning letter formation; 3) blending; 4) segmentation; 5) tricky words that the children learn by heart (Lloyd, 2007). The latter fall into two major categories: non-decodable words, words with irregular spelling, and high frequency words, which can be decodable, but the automaticity of their reading/writing directly affects fluency and comprehension. As the knowledge of tricky words is essential to progress rapidly at both reading and writing, the list of 100 most common words is included in teaching procedures to be learnt separately (Jolliffe et al., 2019). The content of SP comprises the teaching of 42 phonemes and their grapheme correspondences, which are distributed into seven groups (Lloyd, 2007). All the GPCs are introduced with gestures, songs, stories, and are presented through visual resources. In English-speaking countries, the teaching of phonics starts at the age of 3-4 and forms part of every class procedure.

But how can the previous instruction in SP help a non-native learner to write a word? The process of spelling a word presents several challenges for a Spanish learner in particular: comprehension of a spoken word (oral proficiency), segmenting the word into a set of phonemes (phonological awareness), mapping each phoneme into its corresponding grapheme (phonics), and writing a sequence of graphemes to form a written representation

of this word (alphabetical knowledge and handwriting). While the last stage is relatively easy, since both English and Spanish are alphabetical languages, the previous stages pose a significant difficulty for L2 learners.

In terms of oral proficiency level, vocabulary has been demonstrated to have a direct impact on emerging literacy skills (Bialystok et al., 2009; Karakoç & Köse, 2017; Stanovich & Siegel, 1994). To write any word entails lexicon search, ergo, word recognition and its comprehension directly influence phonological and orthographic processing. If a learner has had a previous encounter with a word, it activates their phonological memory and, consequently, orthographic processing. Furthermore, printed words frequency or high exposure in print was also associated with the students' spelling accuracy (Spencer, 2007). Nevertheless, failure in word recognition leads learners to use other strategies, such as analogy or invention. Writing by analogy implies the conversion of phonemes in graphemes: using the knowledge of familiar words that share the same phonemes and mapping these phonemes into grapheme correspondences (Perfetti, 1997). This procedure will succeed with decodable words, but it will fail with non-decodable words, leading to misspellings (Niolaki et al., 2014). To write by inventing implies phonemic analysis of an unknown word, and furthermore application of alphabetic principle and the knowledge of the letter names to its spelling (Milburn et al., 2017).

As for segmentation, this skill of phonological awareness refers to the ability to perceive, manipulate, and recall phonemes in spoken words (Jolliffe et al., 2019), and there is research which demonstrated the direct relation between phonological awareness and spelling (Gillon, 2017; Fonseca-Mora & Fernández-Corbacho, 2017; Reilly et al, 2019). Although segmentation process in L2 and Spanish are rather similar, there are certain difficulties which must be considered. In their cross-language analysis on efficient acquisition of phonics skills, Wyse and Goswami (2008, p. 696) state that segmentation is one of the most complex skills to acquire for the learners with simple CV syllable structure (Spanish, Italian, Finnish). Although words in these languages are longer than in English, their segmentation is easier due to their transparent orthography.

Furthermore, the consistency of the symbol-to-sound-mapping (Ziegler at al., 1997) can be considered another critical factor. On a GPC level, vowels, especially diphthongs and triphthongs, are the most demanding for both phonological and orthographic processing (Linan-Thompson et al., 2018; Lindner et al., 2022). While in the Spanish language all the diphthongs are represented by two vowel graphemes, in the English language diphthongs can be represented by one grapheme (e.g., *name*, *note*), and triphthongs by more than two graphemes (e.g., *fire*, *buyer*). Hence, a Spanish learner tends to segment a diphthong/triphthong into different vowel phonemes, which leads to spelling mistakes. Furthermore, segmentation of consonant clusters can be demanding for Spanish learners due to their syllabic structure (Yavaş & Someillan, 2005), which can be another cause of misspellings in L2. It is quite common that Spanish learners add a vowel grapheme before initial consonant clusters (e.g., *esky*, instead of *sky*), or omit the second consonant grapheme in final consonant clusters in English words (e.g., *frien*, instead of *friend*).

Moreover, the orthographic processing is a stumbling block in EFL teaching at emerging literacy stages (Campion & Mann, 2004; Jolliffe et al., 2019) especially when the learners' L1 has a shallow orthography (Rendón-Romero et al., 2021; Roberts, 2001). While in the Spanish language there is a direct relation between GPCs, 27 phonemes correspond to 27 graphemes; in the English language 26 graphemes are related to 44 phonemes, the latter can be represented by approximately 70 different grapheme correspondences. Hence, the

phonemes with various grapheme correspondences are the most challenging for students and affect their spelling performance (Spencer, 2007). The word football [ˈfʊtbɔːl], for instance, does not present any comprehension difficulty, since in the Spanish language the word is practically the same, *fútbol*. However, in comparison to the L1 spelling of this word the relation between phonemes and graphemes is complex, as six phonemes are represented by eight graphemes. Thus, without the knowledge of phonics, literacy skills transfer between L1 and L2 can take place (Bialystok et al., 2009).

There has been extensive cross-linguistic research that proves a positive transfer of literacy skills (Bialystok et al., 2009; Hui, 2010; Oller & Eilers, 2002). However, it has also been demonstrated that L1 phonological awareness and orthographic processing influence L2 words spelling leading to committing errors (Mazorra & Befi-Lopes, 2013; Roberts, 2001).

3. Methodology

3.1. Participants

To study the efficiency of SP instruction in bilingual schools of the region of Madrid, 7 schools took part in the research: 3 private schools (G1 – boys' school, G2 – girls' school, G5 – mixed), 1 public school (G3 – mixed school), 3 charter schools (G4 – mixed, G6 – mixed, G7 – mixed). Two groups were created: Synthetic Phonics Group (hereinafter SPG) with SP (G2, G3, G5, G7) and Non-Synthetic Method Group (hereinafter NSMG) with no specific L2 reading/writing method (G1, G4, G6).

Table 1. *Distribution of students per category*

Type of school according to ownership	Frequencies
Private	276
Public	73
Charter	291
Type of school according to gender	Frequencies
Boys'	136
Girls'	177
Mixed	327
Student's sex	Frequencies
Male	304
Female	446
Teaching method	Frequencies
SPG	294
NSMG	346
Total	640

All the schools bilingual and the children in both groups started classes of the English language in kindergarten 1. While the children in SPG were exposed to SP with *Jolly Phonics* from kindergarten 1 up to 2nd of Primary; in NSMG the teaching of reading/writing in the English language started in 1st of Primary, once the children had acquired the skills of phonological awareness in L1 and already commenced to read and write in their mother tongue. This group did not follow any specific ESL reading/writing method; therefore, the teaching of writing was based on the contextual exposure to words in print within the themes of ESL Primary textbooks. Initial semantic processing of a word within a sentence/text was followed by encoding it in print, further enforced by memorization and drilling techniques (e.g., tracing activities, fill-in-the-gap exercises).

3.2. Instrument and data collection procedures

The instrument was a dictation test, which consisted of 15 words based on the results of the previous investigation[1]. All these words frequently occur in print in the textbooks of Primary, therefore, mistakes in their spelling can lead to comprehension problems and the lack of fluency in both reading and writing.

Data collection period was November 2019 (1st term) – December 2020 (1st term). The dictation was carried out by the teachers of the English language in their corresponding classes in 3rd of Primary. The procedures were the following: 1) reading all the words at normal speed for general comprehension; 2) dictating the words at a slower speed, each word was repeated twice; 3) reading the words at a normal speed for the children to correct possible spelling mistakes (Nation & Newton, 2009). The teachers assigned a code to each student's dictation, and the researchers did not have access to confidential information.

A total of 640 dictation tests were analyzed following Corder's (1973) spelling mistakes taxonomy. Spelling mistakes were distributed as follows: phonetic spelling (PH), letter omission (LO), letter addition (LA), wrong letters order (OL), letter substitution (LS), and miscellaneous (M).

After collecting and bringing together the data, they were imported to the statistical analysis program SPSS Statistics, version 24, with the objective of detecting statistically significant differences amongst the types of errors committed by students, depending on the method of teaching. The data did not present the appropriate characteristics to perform parametric statistical tests, reason why nonparametric tests were carried out. To identify possible differences in the number of errors depending on the teaching method, Mann Whitney's U test (MacFarland et al., 2016) was used. A second step consisted in verifying the words which had the greatest number of errors, and whether in each specific word and type of error there were relevant differences depending on the method of teaching. In this case all the dictations were analyzed, and all the misspelt words were collected as written

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[1] The current research is the result of previous investigation carried out in 2017 (Antropova et al., 2019), which focused on the study of the most common errors committed by 4th of Primary students in paragraph writing with SP instruction. Having analysed 135 writings of students who had received previous SP instruction, surprisingly it was found that the most common type of error was spelling (63%), and the list of the most frequently misspelt words (15 in total) was elaborated. As the previous research was limited to a reduced sample of writings, gender, and type of school, the current research was expanded to involve seven different bilingual schools in the region of Madrid.

by each student. This generated a database of words misspelt by each student subject to a specific teaching method. Further on, the possible differences between the types of errors committed in relation to the type of instruction (SPG and NSMG) were analyzed by means of contingency tables with chi-square tests (Daniel & Villamizar, 1981). In addition, their intensity was scrutinized using Cramer's V test (López-Roldán & Fachelli, 2015), given the characteristics of the tables where the data were represented. The possible directionality between the variables was also examined by applying Lambda's test (Ondé, 2017) to see if the teaching method could predict the type of error, and if the type of error made it possible to predict the teaching method used.

4. RESULTS

4.1. Error frequency by group

Having collected all the data, the spelling mistakes were analysed according to their type (PH, LO, LA, OL, LS, and M) and group of participants (SPG and NSMG). The error frequency obtained was the following:

Table 2. *Average of errors by types committed by each group*

	METHOD	PH	LO	LA	LS	OL	M
NSMG	Average	1.49	2.46	.52	1.84	.18	1.04
	N	294	294	294	294	294	294
	Standard deviation	1.493	1.567	.724	1.435	.644	1.626
SPG	Average	2.08	3.25	.59	2.17	.19	1.90
	N	346	346	346	346	344	346
	Standard deviation	1.603	1.600	.765	1.457	.414	1.999
Total	Average	1.81	2.89	.56	2.02	.18	1.51
	N	640	640	640	640	638	640
	Standard deviation	1.580	1.632	.746	1.455	.532	1.885

Significant differences were found in the following error types: PH (U=62.958,5; p<0,001), LO (U=64.749; p<0,001), LS (U=57558.5; p<0,01), and M (U=65.768; p<0.001); however, LA and OL types did not present relevant differences according to the method of instruction. In PH-type, the students in NSMG committed less errors (M=1.49; SD=1.493) than the students in SPG (M=2.08; DS=1.603). In LO-type the students in NSMG made a smaller number of errors on average (M=2.46; SD=1.567) in comparison to the students in SPG (M=3.25; SD=1.6). The same happens with LS-type, where the students from NSMG made 1.84 errors on average (SD=1.435), while the students from SPG made 2.17

(SD=1.457). Furthermore, in M-type, the students from NSMG committed fewer mistakes (M=1.04; SD=1.626) than the students from SPG (M=1.90; SD=1.999).

Once these categories with the most relevant errors were detected, a further analysis was performed. The latter was focused on checking in depth the potential differences between the two groups (SPG and NSMG), their relationship and the possible direction or dependency between the variables.

4.2. PH-type errors

The words *usually* (31.37%), *because* (17.63%), *football* (11.65%) and *favourite* (10.91%) contained the major number of PH errors on a global scale. Once the percentages of errors according to the teaching methods were compared, the words *usually* and *because* presented noticeable differences, as well as the word sometimes, in the writing of which the students from SPG committed more errors (8.02%) than the students from NSMG (4.09%).

Table 3. *Relative frequencies of the words which accumulate more PH-type errors*

PH-type error	NSMG	SPG	Total
are	0.00%	0.16%	0.10%
because	15.20%	18.99%	17.63%
dinner	0.88%	0.98%	0.94%
father	0.29%	0.33%	0.31%
favourite	10.23%	11.29%	10.91%
football	11.70%	11.62%	11.65%
friend	10.82%	7.53%	8.71%
home	5.56%	4.91%	5.14%
kitchen	0.29%	0.33%	0.31%
school	0.88%	1.96%	1.57%
sometimes	4.09%	8.02%	6.61%
teeth	2.05%	1.80%	1.89%
usually	35.38%	29.13%	31.37%
very	0.88%	0.00%	0.31%
watch	1.75%	2.95%	2.52%
Total	100.00%	100.00%	100.00%

When the errors related to PH category were analysed, the chi-square statistic did not find relevant differences between the two methods ($x^2(14)=21.62$; $p>0.05$). Cramer's V identified a low association between the method and the errors (V=0.15), whereas in respect to the direction the lambda test did not indicate any relationship of dependency between the method and the errors committed, nor the contrary. Hence, neither of the two variables could

be used to predict the other. If the error were considered as a lambda dependent variable, it had a value of 0.004, whereas if the method were the variable selected as dependent, the value of lambda was somewhat higher (lambda=0.09).

Even though in Table 2 it would be possible to interpret the existence of differences in the errors of the different words, as indicated by the statistical test, these differences were not significant; there was no need to describe the data collected in a detailed manner.

4.3. LO-type Errors

On a global scale, the words *dinner* (16.40%), *kitchen* (14.45%), *favourite* (13.25%) and *watch* (12.06%) accumulated a larger number of LO errors in both groups. Anyhow, when the percentages of errors according to the teaching method were compared, the relevant differences were found in the writing of the words *favourite*, *kitchen*, *watch* and *usually*. While the students from NSMG committed less LO errors in the writing of *favourite* (11.49%) and *usually* (3.03%), in the words *kitchen* (16.56%) and *watch* (12.47%) the percentages of errors were higher compared to those of SPG: *kitchen* (11.14%), *watch* (1.42%).

It is noteworthy that most common LO errors committed in these words spelling by both groups were the following: the omission of the consonant letter "t" in a complex GPC "-tch" (*watch* (7.93%), *kitchen* (8.52%)); the omission of the vowel letter "u" in *favourite* (11.41%); the omission of one consonant letter in a consonant diagraph ("n" in *dinner* (13.63%), "l" in *usually* (3.85%)); the omission of the final vowel letter "e" in *are* (3.31%) and *home* (2.06%); the omission of the consonant letter "h" in *school* (3.04%).

Table 4. *Relative frequencies of the words which accumulate more LO-type errors*

LO-type error	NSMG	SPG	Total
are	5.16%	2.79%	4.24%
because	3.74%	2.23%	3.15%
dinner	16.92%	15.60%	16.40%
father	0.18%	0.00%	0.11%
favourite	11.49%	16.02%	13.25%
football	5.43%	4.74%	5.16%
friend	6.23%	4.74%	5.65%
home	2.14%	3.62%	2.72%
kitchen	16.56%	11.14%	14.45%
school	8.28%	9.05%	8.58%
sometimes	6.14%	6.69%	6.36%
teeth	2.23%	2.79%	2.44%
usually	3.03%	9.19%	5.43%
very	0.00%	0.00%	0.00%
watch	12.47%	11.42%	12.06%
Total	100.00%	100.00%	100.00%

In connection with the errors committed in the LO type, relevant differences were found $(x^2(13)=64.26; p<0.001)$. As the results were relevant, the symmetry or association between the variables was analysed. In this case the association presented by Cramer's V was not relevant (V=0.18) and the lambda index did not show a relevant relationship of dependency in either direction. Thus, the teaching method did not predict the type or error (lambda=0.47) neither did the type of error predict the teaching method (lambda=0.02).

4.4. LS-type errors

The words *father* (19.43%), *very* (16.63%), and *because* (12.59%) accrued a larger number of LS errors in both groups. Relevant differences were found in the writing of *because*, *favourite*, *kitchen* and *sometimes*. While NSMG committed less errors in *sometimes* (4.98%) and *kitchen* (6.46%), in the writing of *because* (15.13%) and *favourite* (13.47%) the percentages of LS errors were higher than in SMG.

The most common LS errors committed by both groups were the substitution of the consonant letter "b" by "v" in *very* (6.22%) and *favourite* (6.37%); the substitution of the consonant diagraph "th" by the consonant letter "d" in *father* (13.44%); the substitution of vowels "oo" by "u" in *football* (3.73%); the substitution of a complex GPC "au" by "o" in *because* (3.11%). The LS-type error in the writing of the words *sometimes* and *football* did not have any clear substitution pattern due to an extensive number of misspelt versions of these words.

Table 5. *Relative frequencies of the words which accumulate more LS-type errors*

LS-TYPE ERRORS	NSMG	SPG	TOTAL
are	0.37%	3.62%	2.25%
because	15.13%	10.74%	12.59%
dinner	0.00%	0.54%	0.31%
father	19.56%	19.33%	19.43%
favourite	13.47%	7.38%	9.95%
football	9.23%	6.31%	7.54%
friend	2.40%	2.68%	2.56%
home	0.37%	0.81%	0.62%
kitchen	6.46%	10.20%	8.62%
school	1.29%	1.74%	1.55%
sometimes	4.98%	9.26%	7.46%
teeth	9.23%	8.32%	8.70%
usually	0.74%	0.00%	0.31%
very	15.50%	17.45%	16.63%
watch	1.29%	1.61%	1.48%
Total	100.00%	100.00%	100.00%

Like in the previous case, the LS-type errors showed relevant differences between the two types of teaching ($x^2(14)=58.71$; $p<0.001$). Cramer's V test showed an association that was relatively stronger than the previous types of errors, this being the sole category which tended, although very slightly, towards an exact association ($V=0.21$). This could mean that in this type of errors, the errors committed by one group and by the other were more strongly related. On the other hand, the direction test did not provide evidence of a dependency relationship between the variables. Thus, the teaching method did not allow predicting the type of error (lambda=0.36) nor did the type of error allowed predicting the teaching method (lambda=0).

5. Discussion and Conclusions

As previously mentioned in this study, there is scarce empirical research on the acquisition of early writing skills with SP due to its recent implementation in formal education in the region of Madrid, Spain.

Regarding the general objective of this research, it can be stated that according to the results obtained, the instruction in SP does not guarantee spelling success. These findings are supported by the research performed by Bowers (2020) and McQuillan (2018) carried out with native children, which point to "fading out" effect of SP instruction with age. Furthermore, in the comparative analysis of high frequency words reading with SP instruction and the intensive teaching in Grade 1, Watts and Gardner (2013)"type":"article-journal","volume":"41"},"uris":["http://www.mendeley.com/documents/?uuid=2492e8a6-b7d9-4140-86a3-83cac09d5889"]}],"mendeley":{"formattedCitation":"(Watts & Gardner, 2013 concluded that SP was less efficient.

The instruction in SP takes place in kindergarten and the 1st and 2nd of Primary in Spain, and in further courses the effects might fade quickly. Furthermore, the children start the writing instruction in their mother tongue in 1st of Primary, and the orthography of L1 interferes in L2 writing, thus creating confusion in spelling. However, L1 interference can be a help rather than an obstacle in emergent L2 writing skills (Bialystok et al., 2009; Hui, 2010; Oller & Eilers, 2002). The latter can be the reason why the children in NSMG group were more proficient in spelling as they committed fewer errors compared to those in SPG. The same results were observed in all error types, except PH.

In relation to specific objectives, to compare the most common types of spelling errors committed by Spanish children with and without SP instruction as well as to determine the most common types of errors, it can be stated that, regardless of the methodology used, the dominant error was phonetic spelling (PH) followed by letter omission error (LO) and letter substitution (LS). Children in both NSMG and SPG did not present relevant differences in PH, albeit significant differences were found in LO and LS-types. Nevertheless, the teaching method cannot predict the type of error and *vice versa*.

In PH-type, there were no significant differences between the two groups. The children's writing from both NSMG and SPG was affected by their L1 phonological processing. In their majority they applied the rules of the shallow orthography of the Spanish language: while segmenting the word into phonemes they tended to attach one grapheme to one phoneme. In the same vein, Linan-Thompson et al. (2018) concluded in their research about bilingual

children that at early stages of writing most PH errors could be attributed to the influence of the Spanish orthography. Furthermore, English vowels, especially complex GPCs, presented noticeable difficulty for the children in both groups, for example *friend – frend*, *football – futbol*. The same findings were encountered in the research of Lindner et al. (2022), Linan-Thompson et al. (2018), Anguita (2018), Sun-Alperin (2011) and Llach et al. (2005). Whilst the children tended to represent a complex GPC by one vowel letter, diphthongs, in turn, were represented by two vowel letters: *home - houme*, *favourite – feivorit*. The words that posed a significant challenge for writing were *because*, *usually*, *sometimes*. All these three words are recurrent in print and familiar to the children since they are included in the unit "Daily Routines." In addition, the word *because* forms part of a tricky word list in *Jolly Phonics*. Surprisingly, these words accumulate most types of errors, which inevitably points to its lack of instruction.

Although significant differences were found in LO-type, there was no dependence relationship in any of the errors committed. There were four words that had meaningful differences in their spelling: *favourite*, *usually*, *watch*, *kitchen*. The children from NSMG made less LO-type errors in *favourite* and *usually*, which may be attributed to the stronger memorization techniques that they used, albeit the diagraph "tch" (*watch, kitchen*) was the most difficult for NSMG. Moreover, *dinner* (which accumulated most LO-type errors in both groups) and *usually* are other instances of clear interlanguage issues that show interferences from L1 into L2. As in the Spanish language the same consonant graphemes are not replicated, the children represented diagraphs by one consonant letter. Despite the frequency in print of the word *school* in all the Primary school textbooks, the children committed different LO-type errors in its spelling. Llach et al. (2005) also highlighted the misspelt version *scool* in Spanish 4th graders writings. In their recent research on the typology of spelling mistakes in English among Spanish Primary school learners, Lindner et al. (2022) arrived at the conclusion that LO are the most prevalent errors influenced by the differences of Spanish and English orthographies. However, this type of errors is not exclusive of Spanish students; in the study carried out by Al-Saudi (2013), the author recorded *wach*, *scool*, *frind* among the most frequent misspellings committed by Jordan students. This suggests a possibility that this type of misspelling points to a "universal" nature of errors committed by all L2 students and, thus, be considered as a specific interlanguage stage.

As for LS-type of errors, there were significant interferences from L1. The words that accrued higher percentage of LS errors were *because*, *father*, *favourite*, *kitchen*, *sometimes*, and *very*. Complex GPCs presented special difficulty (Llach et al., 2005; Niolaki et al., 2014) for both groups, as in their spelling the students tended to substitute them by a simple correspondence, like "o" instead of "au" in *because*. Although NSMG students made less mistakes in this category, their spelling was more affected by L1 orthography. The students in this group committed more mistakes by substituting English GPCs, non-existent in their mother tongue, such as "b" instead of "v" and "z" instead of "th" ([θ]). These findings are supported by the comparative study of native English and native Spanish children living in California (Campion & Mann, 2004), as well as by Linan-Thompson et al. (2018) and Lindner et al. (2022) studies. Surprisingly, the initial "k" in *kitchen* was also substituted by "c", or even "ck", by SPG students. Perhaps, they were influenced by GPC [k] – "c" (initial unit of *Jolly Phonics* (Lloyd, 2007)), which points to L2 interference, or English approximation (Linan-Thompson et al., 2018). Moreover, tricky words (*sometimes*, *because*, *very*)

presented difficulty in writing for both groups with slight variations, which again indicates the inconsistency of tricky words instruction. Nevertheless, further research is required, and it can be suggested that the learning of these tricky words should be interiorised and made part of writing instruction on a permanent basis.

It may be striking that despite the 3 years of SP instruction the learners from SPG demonstrated worse spelling performance than their NSMG counterparts. However, among various reasons apart from the already mentioned, confusion of codes, the effectiveness of synthetic phonics materials must be put in the spotlight. Since the SP content and didactic resources were initially elaborated for native learners, the peculiarity of the Spanish language was not taken into account. Therefore, further adaptation of this method and its didactic materials is required attending to the specificity of the Spanish language. Moreover, the results of alternative methods to teach reading/writing to Spanish children should be also delved into.

Learning to write in L2 is a complex process and its mastery is conditioned by the learner's L1, as it serves as scaffolding for L2 orthography in monolingual societies, Spain is only one example. Thence, while learning a foreign language, each interlanguage stage the students go through, does not only depend upon individual's inherent factors but also upon a series of extrinsic factors impossible to disengage from.

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