The Contribution of Imagery to the Learning of English Spelling

La contribución de las imágenes en el aprendizaje de la ortografía en inglés

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Abstract

The advent of the Communicative Approach to language learning has highlighted the importance of developing students' oral skills. However, this emphasis on orality has relegated the written skills to a second place and children often have trouble when learning how to write in English. The present article aims to show how visuals can enhance children's learning of English spelling since the acquisition of an accurate orthography can be helped by means of using imagery.

Key words: imagery, learning, spelling, skills.

Resumen

La llegada del Enfoque Comunicativo al ámbito de la enseñanza de idiomas ha subrayado la importancia de desarrollar las destrezas orales de nuestros alumnos. Sin embargo, este énfasis en la oralidad ha relegado a las destrezas escritas a un segundo plano y los alumnos/as, a menudo, tienen problemas a la hora de aprender a escribir en Inglés. El presente artículo pretende demostrar cómo las imágenes pueden mejorar el aprendizaje de la ortografía en los alumnos/as, ya que, la adquisición de una correcta ortografía puede ser ayudada a través del uso de elementos visuales.

Palabras clave: imágenes, aprendizaje, ortografía, destrezas.

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1. Introduction

The main aim of Education is to provide students with the required strategies and skills that will allow them to become autonomous adults and that will permit their integration into society. This intention is implicit in the heart of our standing legislation; accordingly, as educators in the 21st century, we are aware of the fact that globalisation demands individuals who are able to speak English, as this is still the language for international communication.

Therefore, the teaching of English to young learners has become an issue of great significance and social concern to the extent to which educational and methodological trends have been mainly intended to shed some light on how teachers can teach students to communicate competently in a foreign language (Halliwell, 1992; Hadfield & Hadfield, 1999; Slattery & Willis, 2001). In this light, with the advent of the Communicative Approach to Language Teaching, the importance of developing oral skills in the classroom was highlighted and both the listening and speaking skills were brought to the front line, with the result that all the efforts have been oriented to develop these linguistic skills in our learners (Bailey & Nunan, 2005; Lightbown & Spada, 2006; Ur, 1984).

However, it seems that this urgent emphasis on orality may have overshadowed the relevance of the reading and writing skills since they tend to be relegated to second place and to be considered linguistic skills with less importance within the educational sphere. In particular, I advocate for an approach in which oral skills are worked and developed from day one but in which, written skills would also be as important as the former ones.

In this context, the present article aims to shed some light on how visual aids can contribute to the correct writing of words. Learning how to write words correctly implies knowing the correct spelling of words, but in order to learn this spelling, visual memory can be a great help. In this sense, the overall aim of this study is to analyse if the learning of English spelling can be enhanced by means of visual aids. In order to do so, the following explorative research questions guide the present project: a) Can the use of imagery reinforce children's learning of spelling forms?; and b) What kind of visual aids can be used to improve their learning of English spelling?

These research questions have led me to the following hypothesis: given that each and every pupil has his/her own learning styles and the opportunity to

be exposed to diverse sources of learning empowers the outcomes (Oxford, 2001), I hypothesise that the use of specific visual aids can be a useful resource to consolidate the learning of English spelling forms-without making students think so consciously about their writing.

In order to test this hypothesis, the following objectives have been identified: a) to compile data on how students learn spelling: both with the help of visual aids and without the support of this resource; b) to analyse the effects that the inclusion of the designed visual aids and the dynamics introduced by the teacher with them have on our pupils' performance; c) to examine these results in the light of how visual aids have contributed to the learning of spelling.

In what follows, *Section 1* introduces a literature review to contextualise the present study. *Section 2* presents the methodology and work plan followed to carry out this research in a classroom. *Section 3* includes the different steps taken to gather and analyse data as well as the principal findings. Finally, *Section 4* compiles the main conclusions related to the research already carried out in the academic world.

2. Literary review

As it has been outlined in the introduction, there is a tendency to teach the written skills with less consistency than the oral ones. However, this belief should be reconsidered since the development of reading and writing is a vital part for the acquisition of communicative competence. If these four language skills are taught systematically, we may be achieving the integration of all them in our teaching practice, thusly reaching a balance in our pupils' learning of the foreign language. Especially relevant is what happens with pronunciation. While children are exposed to the language orally, their pronunciation is almost brilliant- as opposed to what befalls when the written form is introduced. When learners face the written part of language, they focus so much on the graphemes that their pronunciation is distorted. Nevertheless, writing is an essential part of language and, for this reason, it should not be considered as a hindrance for pronunciation; indeed, it is a skill which must receive more attention and its teaching should be planned from the very beginning, without leaving children to struggle when writing

words and extrapolating their own strategies for writing in their mother tongue to writing in their second language (Harmer, 1983; Bueno González, 2005).

According to this need to teach writing to students in a consistent and progressive way, the teaching of writing should be taken into account from the beginning; that is to say, when children start to join letters to create words. At this initial stage, spelling is key and it is the first step that pupils must learn in order to write correctly in a language. O'Hare and Brown (1989, p. 79) define it «as the production of a correct sequence of graphemes to correspond to a word of spoken speech as dictated by the rules of the particular language». As can be deduced from the definition, there are two elements that play an essential role when dealing with spelling, and they are that of the joining of graphemes and the specific rules of the language that govern these associations.

In relation to this, the English language has always been characterised by having a complex system of rules that dictate how graphemes are arranged to create words. Indebted to Cook's (2001) claim, I believe that «English is far from having a straightforward, transparent system in which one letter stands for one sound» (Cook's, 2001, p. 91). This situation entails that English learners have many difficulties when writing words in the foreign language.

In my experience, this lack of correspondence between sounds and graphemes is what makes students get in trouble when pronouncing and writing words. However, very little attention has been paid to this phenomenon and «spelling is hardly ever covered systematically in language teaching» (Cook, 2001, p. 100), except for a few studies oriented towards analysing the difficulties when writing words that foreign language learners usually find. Among these studies, particularly relevant is the research carried out by Quiñones (2005), who highlighted the necessity to create new methods to learn and write vocabulary words accurately and the central role that visual memory plays in this process. As far as my professional experience in the language teaching world is concerned, pupils normally write words as they hear them, thus transferring sound-and-graphemes connections from their own mother tongue- or they write them perfectly but without articulating their sounds properly.

Additionally, none of these studies and strategies suggests using imagery and visual aids to bridge this existing gap between the acquisition of a correct pronunciation and the correct writing of words. They are all in the direction of using language to reinforce the learning of language, leaving aside the importance that vision has in learning. Nonetheless, Caviglioli, Harris and Findall (2002, p. 39) suggest that «a major part of the brain's activity is processing visual information». For this reason, visual elements must be included in the teaching of languages to reinforce learning.

If we present spelling through visual aids, we are increasing the opportunities for learning, due to the fact that both hemispheres will be working at the same time. In our brain, the diverse functions required to learn are located in the two hemispheres but, in general terms, «evidence from research shows the left hemisphere dominant in processing language, with the right hemisphere crucial to visual and spatial processing» (Fisher, 2005, p. 7). Consequently, if students are presented the language through linguistic and visual materials, the likelihood to improve their learning and retention would be higher.

Likewise, if we combine these kinds of resources, we will also be activating more different types of intelligences, not just the linguistic one. In Fisher's words (2005, p. 6):

> Humans are unique in their ability to process information through these different facets of their intelligence. And human learning is most effective when it brings all its different capacities into play. The psychologist Howard Gardner argues that people have different ways of learning about the world and each of these reflects a different aspect or type of intelligence.

According to the theory of Multiple Intelligences put forward by Gardner (1983), the human mind encompasses nine different kinds of intelligence[1]. With this description, every single scope of human capacity is covered and

1 These are: the Linguistic Intelligence, the Logical-Mathematical Intelligence, the Visual/Spatial Intelligence, the Physical Intelligence, the Musical Intelligence, the Interpersonal Intelligence, the Intrapersonal Intelligence, the Naturalistic Intelligence and the Philosophical Intelligence (Gardner, 1983).

this explains the fact that we all have different strengths and weaknesses when learning. Furthermore, if a learner shows difficulty in a specific aspect, he can be taught with activities that are in line with his strengths, with the result that learning can be more efficient and achievable.

This idea of taking into account the diverse facets of intelligence and being exposed to a combination of sources for learning favours the development of learning styles. Knowing our pupils' learning styles is vital to foster their learning and providing students with different activities that deal with the diverse types of intelligences is crucial to educational success as it will keep the students' motivation at a high level, since they would be aware of the fact that they are learning satisfactorily. Furthermore, if materials are attractive to them, we will be appealing to their attention, making the most of their limited attentive times.

In a nutshell, with the introduction of visual aids in the task of learning English spelling, the intention is to help students in this task as they are being offered with a material that relates to different kinds of intelligences, not only the linguistic one –and therefore, to diverse learning styles– and that favours the processing of information in the brain.

3. METHODOLOGY AND WORK PLAN

Bearing all these theoretical considerations in mind, the next step was to devise a work plan to check if visual memory can enhance the learning of English orthography. In order to do so, I first consulted the Annual Curricular Plan for Year 1 of Primary Education and became familiar with the didactic units that were programmed to be taught between December and April of the academic course 2012/2013 –the months in which this investigation was developed. Once they were thoroughly studied, I extracted the target words and structures. They were selected in accordance with their importance to attain the pedagogical objectives established for each of these four didactic units. Since these lexical items and utterances are the core of the teaching, pupils need to use them correctly in both an oral and written context.

With this material highlighted, I started to analyse the most recurrent consonant graphemes that appear in those utterances. At this point, I realised that

the graphemes <nd>, <th>, <sh> and <ch> were quite repetitive and I also chose them because, in my learning career, I have noticed that they appear in a great deal of English words. Although they are present in many words of English language, I have always had problems when writing these words, especially when writing these graphemes, since I was not used to using these graphemes in my mother tongue or because they sound in a different way depending on the place in which they are in a word. In other words, if we are to write in English, the likelihood of having to write words with these graphemes is strong; but, on the other hand, these spellings can be a bit problematic due to the fact that they are not used in the same way in our mother tongue, there is not a rule to apply to the graphemes since the number of exceptions is quite vast or simply because we underestimate the effort that learning to write these graphemes entails.

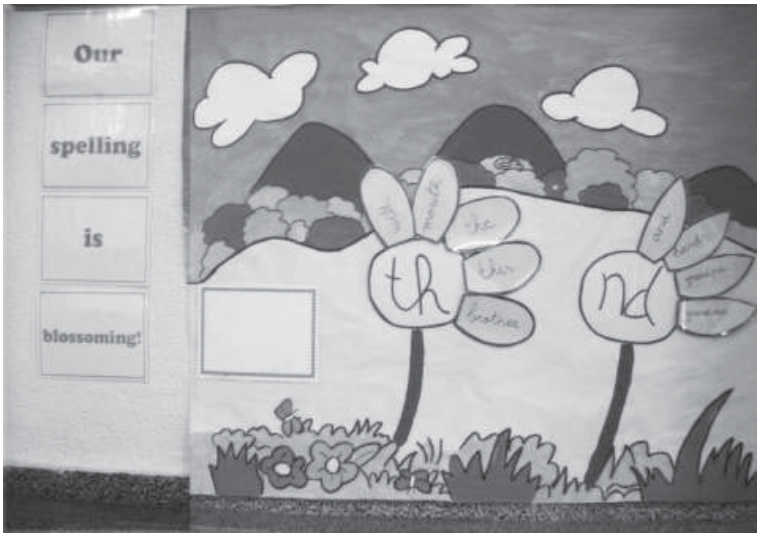
Among these four, the graphemes <sh> and <ch> were decided to be taught only by using oral and written input, whereas the teaching of the combination of letters <nd> and <th> was going to be supplemented with visual aids. This division was made taking into account that, in each case, there was a grapheme which was stable in terms of pronunciation (<sh> and <nd>), and another which was variable depending on the place in which it appears in the word (<ch> and <th>). For instance, the graphemes <sh> and <nd> are pronounced in the same way in words like *shop, fish, island* or *end*. They sound the same no matter if they are at the beginning, in the middle or at the end of the word. In contrast, the graphemes <ch> and <th> are pronounced differently according to their position in the word. As a matter of example, in the word *stomach*, the grapheme <ch> placed at the end of the word sounds like a /k/ but in *chest,* we hear /tʃ/ at the beginning. In the same token, the grapheme <th> at the start of the word *thick* stands for /θ/, whereas at the end, as in *with*, it sounds as /ð/.

Afterwards, the following task was to create a visual support with which children could get reinforced the learning of words and structures that contained the graphemes <th> and <nd>. Balancing the pros and cons of several alternatives, I believed that the best option was to design a big bulletin board as this may allow pupils to see the words more clearly and to interact with it, checking their progress with spelling. Apart from determining the visual convenience of a bulletin board, I also had to think about its layout. With regard to its format, I was strongly convinced that I wanted something in which they

could see how much they were learning throughout the months but also, a format that permitted learners to be aware of their mistakes.

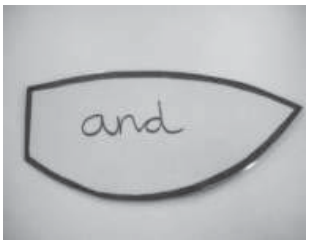
Taking this demand into consideration, I came across the idea of elaborating a spring-like landscape in which two flowers were the centre of attention. Each of these flowers would stand for one of the aforementioned graphemes. In the pollen, I would write the corresponding grapheme and each of the petals may represent a word that has the target grapheme.

Figure 1. An overall view of the bulletin board.
Source: Author.



Once I had the pollen, I began to draw the petals and to write a word on each of them

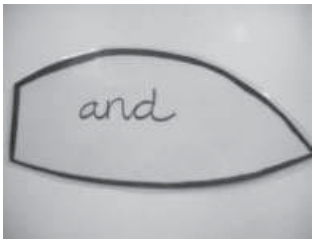
Figure 2. An example of a petal with a word with <nd>.
Source: Author.



Nonetheless, these pink petals were not only petals due to the fact that they were also going to be used on the other side as leaves.

Figure 3. On the other side of the petal, there was green cardboard paper with the same word.

Source: Author.



The idea was that if children knew how to write that word correctly, the card board paper would be pink and we would place it next to the pollen as a petal. On the other hand, if learners did not know the appropriate spelling of a word, the card board paper would be green and we would put it in the stem as a leaf.

When all these materials were prepared, I introduced this dynamics to my pupils. I continued using the same strategies to teach them all the words of each didactic unit but if those words contained the <th> or the <nd> graphemes, I showed them the corresponding petal/leaf and they placed it on the bulletin board. In every unit, they found words with the target graphemes (<nd>, <th>, <sh> and <ch>) but if they did not contain the graphemes <th> or <nd>, they were taught without the visual aid, using the same materials prior to this research. If they contained these graphemes, I showed them the petal/leaf and depending on if a volunteer knew how to write the word, we placed it next to the pollen or the stem.

Pupils were quickly motivated and this technique was perfectly embedded in the routines of every lesson. From that moment on, my research task consisted of gathering data using their daily work as the evidence and having a grid in which I jotted down their progress with these four graphemes.

In addition to this, in order to check their performance before and after the development of each unit, I created some simple tests that have been used as pre-tests and post-tests. These tests have a very similar structure and they all contain the main words and structures which appear in the units. The intention is that at the beginning of the unit, they show how much previous knowledge about the unit they have, especially in terms of the graphemes selected. At the end, they will take the same test to see how much they have learnt over this period and I will focus my attention on how they write the graphemes in question.

Figure 4. Illustrates how words were placed depending on if pupils knew how to write them or not.
Source: Author.

4. Analysis

As it has been outlined, in order to register data and see my pupils' progress as well as the effectiveness of the bulletin board, I created a grid in which I could gather all the information I needed. In order to do so, this grid contained the target words that were the core of my study organised in units and reflecting seven moments in which pupils wrote these words, as it can be seen below:

Pupil:

	Words	Pretest	1st writing	2nd writing	3rd writing	4th writing	5th writing	Postest	Performance
Unit 1 nd	grandpa								/7
	grandma								/7
Unit 1 th	brother								/7
	the								/7
	this								/7

	Words	Pretest	1st writing	2nd writing	3rd writing	4th writing	5th writing	Postest	Performance
Unit 2 nd	hands								/7
Unit 2 th	mouth								/7

	Words	Pretest	1st writing	2nd writing	3rd writing	4th writing	5th writing	Postest	Performance
Unit 2 sh	wash								/7
Unit 2 ch	touch								/7

	Words	Pretest	1st writing	2nd writing	3rd writing	4th writing	5th writing	Postest	Performance
Unit 3 nd	and								/7
Unit 3 th	with								/7

	Words	Pretest	1st writing	2nd writing	3rd writing	4th writing	5th writing	Postest	Performance
Unit 3 sh	fish								/7
Unit 3 ch	spinach								/7

	Words	Pretest	1st writing	2nd writing	3rd writing	4th writing	5th writing	Postest	Performance
Unit 4 nd	under								/7
Unit 4 th	feather								/7

	Words	Pretest	1st writing	2nd writing	3rd writing	4th writing	5th writing	Postest	Performance
Unit 4 sh	shell								/7
Unit 4 ch	chicken								/7

I printed one grid for each child with the intention of collecting the same data for all of them and with this, to be able to draw valuable conclusions about the usefulness of imagery in the learning of English spelling. I cannot deny that this task of gathering so much data about their writing accuracy was difficult at the beginning, since it required I plan when I was going to analyse their productions and who was going to be observed. Nevertheless, not only did this grid allow me to take notes about their learning, but it also gave me the possibility of collecting data in a very short period of time.

The data was collected with reasonable promptness because it was done in terms of correct or incorrect –writing a tick in the first case and a cross in the second one. Measuring how well pupils write words requires objective data and this is the reason why I decided to reflect their performance with these simple –and so used– symbols.

The word had been correctly written if the student had had zero spelling mistakes; however, if the learner had had some mistakes or even just one, the word was considered to be wrongly written.

In addition to deciding how I was going to mark pupils' writing, I had to establish when I should take notes. As it can be seen in the grid, every word

has been tested seven times. The first and the latter ones refer to the tests (pre-tests and post-tests that I previously mentioned) and it was quite easy to write their performance because I passed these tests as activities in class and, later on, I analysed them quietly. On the contrary, the other five times took place in class and, for these cases, the organisation had to be very clear knowing when to ask and to whom.

In these five times in which data was collected, learners had to write by heart, that is to say, without seeing the word written in any place as they did in the tests. I made the decision to choose three times while students did the routine of writing on the bulletin board's whiteboard, and the other two were related to activities that they did in their notebooks.

Once I had made all these decisions regarding what to do in class, there was another premise not to be transgressed and this was that of making pupils be completely unaware of my research. My intention was to check how this bulletin board was contributing to my students' learning but they had to see it as another strategy, not as something really special that might provoke on them a state of mental warning. I was satisfied to see that after a few days, learners considered it as another part of the routines, treating the task in the same way as they had to hand out books, set the date or the weather.

Although the planning of this data collection may seem a bit complicated, it was mainly a question of consistency and cyclical organisation. Thanks to the use of the first unit as a springboard for this research, I quickly organised my classroom practice adapting my usual procedures and classroom dynamics to give room to this experience.

In order to examine all the data gathered in the grids, I decided to use percentages for each unit since I believe that this way of quantification is the most suitable to express the results for this research due to the fact that it perfectly reflects the performance of pupils when writing graphemes as well as being very useful to compare outcomes. Moreover, as the data has been collected in terms of correct or incorrect, percentages can be calculated without difficulty and they give us a precise idea of the students' written accuracy with a simple look. In this sense, as it can be seen in the aforementioned grid, the spelling of each word has been analysed seven times being the first one and the last ones, the tests.

Although every word has been examined seven times, only six of them have been used as data for this research. For the sake of objectivity, the results of the pre-tests have not been included in the percentages due to the fact that there was no previous teaching.

Over this number of times, I have seen how many correct answers students had and thus, I have obtained the percentage of accuracy that my learners reached in every case. Once this was done for every word, I compared the percentages of those words that were visually enhanced to those which were not so that I can draw relevant conclusions for this study.

At this point, it may be important to recall that the first unit, as it has been pointed out, was used to check if the bulletin board was having any influence on my pupils' writing, as a springboard, and I did not collect data of the graphemes which were not represented on the bulletin board (<sh> and <ch>). Whereas, the other three units constitute the core of the research and they were worked both systematically and consistently. For each of these three units, there were four words which had the graphemes selected in this project (<nd>, <th>, <sh> and <ch>). Following the procedure explained above, I have calculated the percentage of accuracy for each word in these three units and afterwards, I have contrasted the percentages of the words visually enhanced to those of the words that were not worked with imagery.

5. Results and conclusions

Following the procedure explained above, the following results were generated:

Table 1. Results from Unit 1. Percentage of accuracy for each of the words and the average.
Source: Author.

Words	***Percentage of accuracy***
Grandma	75%
Grandpa	83.3%
Brother	79.76%
The	67.86%
This	53.57%
Average of accuracy	***71.9%***

As it can be seen in Table 1, the introduction of the bulletin board and its dynamics in the classroom was quite fruitful since the results show that pupils wrote the words perfectly 71.9% of the time. If we analyse each of the words in isolation, it can be highlighted that, apart from the word this, the other ones had a high percentage of correctness, which is indeed more remarkable if we underline that they are in Year 1 of Primary Education and they are starting to write words in English. Combining the fact that they are getting used to writing in another language and the certainty that they showed with these words, the beginning of this research was considerably rewarding and it made up for all the efforts dedicated to thinking how to implement this dynamics in my usual English lessons.

In this sense, Table 2 shows how pupils wrote the words containing the different graphemes. In general terms, it grabs my attention that the first two words (with <nd> and <th> graphemes) were well written the vast majority of times as opposed to the other words (with <sh> and <ch> graphemes) which were written correctly less often. Not only can we notice this great difference, but also it is important to point out that the four words were introduced together as they were part of the topic of the five senses and children had to make sentences with them to express different situations in which we use our senses. Giving thought to this noteworthy evidence, I reached the conclusion that my pupils could have been unconsciously influenced by what is generally known as the Hawthorne effect (González Pérez & Criado del Pozo, 2003). This implies that they were indulged in auto-suggestion since they could see the bulletin board every day; they used to play with the petals while they were queuing up with the result that these simple actions culminated in a higher attention on the spelling of these words, which made them write more accurately.

Table 2. Results from Unit 2. Percentage of accuracy for each word.
Source: Author.

Words	***Percentage of accuracy***
Hand**s**	79.76%
Mouth	73.81%
Wash	29.76%
Touch	45.24%

As it can be observed the percentage of accuracy was incredibly different. Those words, which were supplemented with visuals, were well written in more of the double of occasions. On the other side, words that were worked through writing and orally were only correct in the 37.5% of times.

Table 3. Average of accuracy for words which were visually enhanced andfor those which were not in Unit 2.
Source: Author.

Average of accuracy	
Words reinforced with imagery	76.78%
Words which were not visually enhanced	37.5%

Even when these data are much more telling than the ones obtained from Unit 1 simply because I can compare results, I believe that they are so different due to the fact that children had got the hang of this new strategy and they were more focused on these words than on others. Although the outcomes are part of this enthusiasm, I cannot deny that the bulletin board was having an effect on my pupils' writing and this was very positive. Children started to like writing words and they were doing this task with great security and success.

After the second unit, we started the third one dealing with the topic of food. In this case, the main aim of the unit was to express their likes about food and to say what is good for our health. Having as a reference the results found in Table 4, it can be said that, as happened in the previous unit, the words with the combination of letters <nd> and <th> were correctly written a lot of the time. Nonetheless, the word *fish* which contains the grapheme <sh> is the one which was best written, although the difference is slight compared to the word *and.* What is more significant is the fact that the word *spinach,* that was not visually reinforced, was not so well written and this can be explained due to the fact that it is a longer and more difficult word than *fish*.

Table 4. Results from Unit 3. Percentage of accuracy for each word.
Source: Author.

Words	*Percentage of accuracy*
And	77.38%
With	67.86%
Fish	78.57%
Spinach	40.48%

Nevertheless, the fact of writing *fish* so well made me think and after pondering several possibilities, I came to the conclusion that it had been a word with a great repetition in this unit, not only in the book but also in their activities. They had liked it a lot and every time I asked for a contribution in oral exchanges, it was strange if someone did not say that word. Consequently, as they learnt it orally very quickly, when writing was introduced, the cognitive effort of joining letters was eased thanks to the knowledge of how to say that word in English.

Apart from considering this, it may be important to highlight that the acquisition of spelling is also influenced by the meaning of words. In this sense, *fish* was so well written because it is meaningful to children and they can easily relate this particular spelling to a picture. Nonetheless, in Table 4 it is shown that other words like *and* or *with,* which are abstract words, were also well written a lot of the time and they are not as meaningful as *fish*. Evidence shows that the introduction of the bulletin board allowed children to write them correctly. Even though *with* and *and* represent abstract concepts, they have been better written than *spinach*, which can be easily depicted. This seems to point to the fact that the improvement of students' spelling does not go hand in hand with meaning and argues in favour of using visual reinforcement.

There is a general tendency to think that those words which can be associated with a picture are better learnt and written by pupils when, in fact, it has been proven that the visual image of spelling plays a much more decisive role. As deduced from the data collected in this unit, *and* and *with* have been written quite correctly due to the fact that pupils *saw* their spelling. They are abstract words but their spelling was enhanced visually and students wrote these terms more accurately than *spinach*, which was presented with a picture.

Although the accuracy of *fish* was the highest, the average tells us that words supported with imagery have a higher accuracy than the words which were not visually enhanced (Table 5). The percentage is in line with the previous ones (72.62% while in the other units, we had 71.9% and 76.78% respectively) and I believe that they are a signal of continuity in their learning process. The bulletin board is marking a difference: the words in the petals are better written than the others. As it was outlined above, the visual reinforcement of spelling is making pupils write better, no matter if the words are concrete or abstract words.

Table 5. Average of accuracy for words which were visually enhanced and for those which were not in Unit 3.
Source: Author.

Average of accuracy	
Words reinforced with imagery	72.62%
Words which were not visually enhanced	59.52%

So far, the percentages provide a clear evidence of improvement of spelling by means of imagery. In the last unit, this trend is continued and confirmed as deduced from the analysis of the percentages included in Table 6. As it has happened in the previous units, the words visually enhanced have been written more correctly than the other ones and this difference is due to the visual support that learners are offered.

Table 6. Results from Unit 4. Percentage of accuracy for each word.
Source: Author.

Words	***Percentage of accuracy***
Und**er**	84.52 %
Feath**er**	84.52 %
Sh**ell**	67.86%
Ch**icken**	51.19%

Calculating the average for each case, it is obvious that words visually enhanced have a higher percentage than the others. These results are reflected in Table 7. At this point, I would like to highlight that the percentage of accuracy for the words which have not been visually reinforced is the same as in Unit 4. On the contrary, the percentage for the words worked with imagery is around ten points higher. From my point of view, this data is due to the fact that children are getting familiar with the process of writing.

Table 7. Average of accuracy for words which were visually enhanced and for those which were not.
Source: Author.

Average of accuracy	
Words reinforced with imagery	84.52 %
Words which were not visually enhanced	59.52%

When I finished this process, I felt that my research was not wholly completed because I had the impression that in order to get a deeper insight into the learning consequences of this dynamics I had to carry out a final test. With this idea in mind, I elaborated it with all the words which have been the subject of study in this project and my students took it by surprise. As I pointed out above, one of my premises was that my learners had to be unaware of the contribution that this bulletin board was having on their learning of spelling. I wanted to see if this dynamics of using imagery to improve their writing was valid to be used in a class and this is the reason why children should see that implementation as another strategy not as something really special that made them be more cognitively awake. With this final test, the main goal was to check their accuracy when writing these target words over a period of time to see the effects in their long-term memory. The results of this final test were the following ones:

Table 8. Results from the Final Test. Percentages of accuracy of each word.
Source: Author.

Word	*Percentage of accuracy*
Grandma	57.14%
Grandpa	57.14%
Brother	42.86%
The	64.28%
This	35.71%
Hands	57.14%
Mouth	57.14%
Wash	21.43%
Touch	28.57%
And	64.28%
With	64.28%
Fish	64.28%
Spinach	35.71%
Under	71.43%
Feather	78.57%
Shell	50%
Chicken	35.71%

Although this list of words with their corresponding percentages may seem a bit complicated, its analysis is quite fruitful. Having a look at the first five words (*grandma, grandpa, brother, the, this*), it can be said that even when these words were studied in December and January, children still remember them four months later. Since these five words belong to the first unit of research, they were all worked with imagery and with this final test, I am checking how visual support has helped to fix these images in their long-term memory. In relation to these percentages, it can be affirmed that *grandma, grandpa* and *the* are still written quite accurately. However, *brother* and *this* have lower percentages but these percentages are higher than other words which have been studied in subsequent units but not visually enhanced.

These two words may have lower percentages because they were worked at the beginning of this research and they did not appear so much as the other three. In any case, I believe that they have been written quite well taking into consideration that at this point, children were not used to the process of writing in a foreign language and now, four months later, they have managed to write them correctly in an acceptable number of times.

If we move to the next four words, the evidence is clear. In this final test, the words visually enhanced in the second unit (*hands* and *mouth)* are better written than *wash* or *touch.* When I analysed these words in Unit 2, they were also written with a higher accuracy and in this final test, the results are quite similar. Children have benefited from the use of the bulletin board not only during the lessons that this unit lasted, but also three months later. *Hands* and *mouth* have been learnt much better than *wash* and *touch* and this learning persists in time. The introduction of the visual element in the learning of orthography is having a positive effect.

Continuing with this detailed examination, the next four words go in line with this affirmation. The words worked with imagery in this third unit of research (*and, with*) have a higher accuracy than the other two. Nevertheless, the word *fish* has the same percentage of accuracy but in this case, it is exactly the same, not higher as it was when the data for this particular unit was studied. This means that this word, which had not been studied with imagery, has lowered its percentage of accuracy. In the same way, the term *spinach* has a low percentage of accuracy even when it was not studied too much time ago.

Finally, the last four words reaffirm this tendency and shows that words visually enhanced (*under, feather)* were better written than those which were not supplemented by visuals (*shell, chicken*). In this case, the percentages of *under* and *feather* are even higher because it was the last unit of research and pupils still remember these words quite easily. Nonetheless, what is important here is the fact that they are much better written than the other two and this clearly points to the confirmation that the bulletin board has contributed to a better learning of spelling.

The data analysed unit per unit is extremely useful, but it may also be needed to include the overall average for all the words. In this sense, the following table (Table 9) shows the average of accuracy obtained in the final test in both cases. Due to the fact that the first unit of research did not encompass data of

words which were not visually enhanced, the percentages of the words which were worked with imagery has not been taken into account to calculate this average.

Table 9. Average of accuracy for words which were visually enhanced and for those which were not based on the results of the final test.
Source: Author.

Average of accuracy: Final Test	
Words reinforced with imagery	65.48%
Words which were not visually enhanced	39.28%

With this chart, the statement that visual support has improved the acquisition of English spelling is corroborated. This initial hypothesis has been confirmed thanks to the data obtained from each unit and thanks to the use of this final test, which has also affirmed the fact that this improvement has affected both types of memory: the short-term and the long-term ones.

After having examined the data thoroughly, it is clear that the introduction of the bulletin board has made a difference in my pupils' learning. Supplementing their process of writing with a visual element has enhanced their accuracy as regards the spelling of words and this experience can be extrapolated to other graphemes in subsequent years. The analysis of the data gathered throughout the four months of investigation was just the confirmation of my feelings and observation in class. They demonstrate how much visual aids can help learners in the process of learning English spelling and we, as teachers, should bear in mind the importance of allowing students to see orthography.

As it was stated in the Literature Review, the introduction of visual elements may have a positive effect on the learning of orthography and after carrying our this research, it can be affirmed that imagery has contributed to a better spelling accuracy due to the fact that children are exposed to more sources of learning and they activate several kinds of intelligences.

Bibliographical references

Bailey, K. M., & Nunan, D. (2005). *Speaking.* New York: McGraw Hill.

Bueno González, A. (1996). Writing. In N. McLaren & D. Madrid (eds.), *Handbook for TEFL* (pp. 279-305). Alicante: Marfil.

Caviglioli, O., Harris, I., & Findall, B. (2002). *Thinking Skills and Eye Cue: Visual Tools for Raising Intelligence.* Stafford: Network Educational Press Ltd.

Cook, V. (2001). *Second Language Learning and Language Teaching.* London: Hodder Education.

Fisher, R. (2005). *Teaching Children to Learn.* Cheltenham: Stanley Thornes Ltd.

Gardner, H. (1983). *Frames of Mind. The Theory of the Multiple Intelligences.* New York: Basic Books.

González Pérez, J., & Criado del Pozo, M. J. (2003). *Psicología de la Educación para una Enseñanza Práctica.* Madrid: CCS.

Hadfield, J., & Hadfield, C. (1999). *Simple Speaking Activities.* Oxford: OUP.

Halliwell, S. (1992). *Teaching English in the Primary Classroom.* London: Longman.

Harmer, J. (1983). *The Practice of English Language Teaching*. London: Longman.

Lightbown, P., & Spada, N. M. (2006). *How Languages Are Learned.* Oxford: OUP.

O'Hare, A., & Brown, J. (1989). Childhood Dysgraphia. Part 1: An Illustrated Clinical Classification. *Child: Care, Health and Development, 15*(2), 79-104.

Oxford, R. (2001). Language Learning Strategies. In R. Carter & D. Nunan (eds.), *The Cambridge Guide to Teaching English to Speakers of Other Languages* (pp. 166-172). Cambridge: CUP.

Quiñones Wolff, E. (2013) *El Efecto de la Lectura Visual en el Proceso de Adquisición de Vocabulario en una Lengua Extranjera* (Retrieved 18th February).

Slattery, M., & Willis, J. (2001). *English for Primary Teachers.* Oxford: OUP.

Ur, P. (1984). *Teaching Listening Comprehension.* Cambridge: CUP.

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