Introducing and Investigating a New Micro-strategy for Teaching Spelling Patterns: Active Mental Photography

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Abstract

Spelling has become a remarkable aspect of learning and/or teaching English as a foreign language. This skill helps learners to write fluently without interruption in the flow of thinking caused by searching dictionary for the correct spelling. However, the number of practical simple strategies to learn and/or teach spelling is scanty. This study was an attempt to introduce a practical strategy to learn spelling and to investigate its effect on learners' progress in spelling. To this end, two groups of third-grade students of secondary school were studied as control and experimental groups. A pretest was given, then the new strategy was used on the experimental group, and then a posttest was given, and finally the data were analyzed by using a one-way ANCOVA. The results showed that this new strategy of learning spelling had a positive effect on learners' spelling performance. Findings show that this simple strategy can be effective in learning and/or teaching spelling. Implications are discussed.

Key words: L2 spelling, teaching strategy, effective strategy, micro strategy

1. Introduction

Spelling has become an important aspect of teaching and/or learning English as a foreign or second language. Spelling is a skill that helps students to write with fluency. When EFL students stop writing in order to ask for help in spelling or to look up a word in a dictionary, the flow of the students' thinking is interrupted and they often have difficulty picking up their track of thoughts (Lensk & Verbruggen, 2010).

This process is more commonly like that of driving a car. All the processes of coordination and control so laboriously learned during the training period are reduced to virtual automaticity, leaving the driver free to concentrate on surviving the hazards of modern traffic. Similarly, the person whose spelling-writing skill is perfectly developed is free to devote his attention to collecting and organizing what he wishes to express. Developing perfectly automatic spelling skill depends on two things: A perfect visual image of the words to be written and perfect motor function so that the desired word is correctly transcribed (Gentry, 2003).

Spelling, or orthography, is defined as the art of writing the proper letters according to standard usage that may be considered the process of translating the sounds of speech into written symbols (Foorman & Francis, 1994). Orthography is the standardized procedure of a writing system which includes punctuation, capitalization, word breaks, emphasis, etc. This means that spelling is only a part of orthography (spelling is part of a writing system), but orthography includes a lot more than just spelling. There are also some other definitions for orthography like the part of language study concerned with letters and spelling.

However, little is known about practical strategies of teaching and/or learning of spelling. In other words, these techniques have not totally found their ways into classrooms. Many teachers ask students to learn spelling by giving students a list of new words and want them to learn the spellings exactly for the next session. The students do not know what to do with those lists. There is still a crucial need for some strategies to mitigate the tiresome attitude of ELLs (English Language Learning) toward spelling.

The present paper, therefore, aims to introduce a practical strategy for teaching and/or learning of spelling. In addition, the effectiveness of this strategy is evaluated in the classroom contexts in which it is implemented. This paper presents a spelling strategy and investigates whether it influences learners' spelling qualification or not. This simple strategy can be used and evaluated in any class of language learning with the least facilities. All teachers and language learners can use it easily.

2. Literature Review

Practicing spelling in addition to helping learners in their writing skills also has other benefits such as helping to acquire word recognition skills, segmentation, decoding unfamiliar words, oral blending, and reading (Berninger, Abbott,

Rogan, Reed, Abbott, Brooks, Vaughn, & Graham, 1998; Ehri, 1989, 1997; Foorman & Francis, 1994; Graham, Harris, & Chorzempa, 2002; Uhry & Shepherd, 1993). Spelling instruction helps to form connections between the graphemes and phonemes of a word and to increase the knowledge about the alphabetic system, and, therefore, is related to reading and spelling (Ehri, 1989, 1997). Despite the relative importance of spelling instruction, some children regard spelling training as a rather boring subject. Therefore, showing a suitable strategy is probably more helpful than offering only information about the spelling of the word (Anderson, 1985; Butyniec-Thomas & Woloshyn, 1997). Gentry (2003) argues about the importance of spelling as follows:

> The latest research shouts out "spelling matters!" There's more evidence today than ever before that spelling is foundational for reading. Advanced research in cognitive science, including brain scan science, is demonstrating that spelling may be the missing link to reading success in America, where 66% of fourth graders read below proficiency levels (Annie E. Casey Foundation, 2014) – almost all of these kids are poor spellers. (p.3)

According to Dehaene and Cohen (2011), using a clear and straightforward language to describe the central role of spelling in the reading brain, there are two processes of decoding: sounding out words using phonics, which research shows is essential for beginning reading, and matching letters on the page with the spelling representations in the brain. These representations are processed in the occipitotemporal region, which houses the visual word form area. Logan, Olson and Lindsey (1989) provided some qualitative data from querying a group of children who were finalists in a North American National Spelling Bee. The two major strategies reported by the champion spellers were 'sheer repetition and concentrating on letter sequence', and 'visual memory', which they described as 'picturing the word in their head' and then attempting to remember what the word looks like (Holmes & Malone, 2004, p.540).

A growing number of studies reveal that spelling is a complex cognitive phenomenon relying on sophisticated linguistic knowledge (Caravolas, Hulme, & Snowling, 2001; Fischer, Shankweiler, & Liberman, 1985; Pollo, Treiman, & Kessler, 2009). It has been shown that learning to read and write is easier in transparent orthographies, i.e. orthographies where correspondences between letters and sounds are consistent, as in Italian, than in opaque orthographies, where these correspondences are inconsistent, as in English (Caravolas, 2004; Caravolas & Bruck, 1993; Juul & Sigurdsson, 2005; Wimmer & Landerl, 1997; Ziegler & Goswami, 2006). Therefore, this is an undeniable fact that English spelling for foreign learners is difficult, so the focus should be on how to teach it successfully despite its difficulty, and how to use additional strategies. Templeton's studies (1986, 1991a, 1991b) offer a rich resource for any researcher intending to pursue the research in spelling.

English learners need to learn what Frith (1980, 1985) has termed 'word-specific' orthographic information about individual words. In some cases, the additional information essential to reproduce all the words properly may be related to what Ehri (1980, 1986, 1997) has called 'orthographic footnotes'. These may include spelling analogies with other words, helpful information about the word's morphological derivation and explicit memory devices. In other words, it is a set of conventions for writing a language which includes norms of spelling, hyphenation, capitalization, word breaks, emphasis, and punctuation. Orthographic comes from the Greek root ortho, meaning correct, and graphos, meaning writing.

Knowledge of orthography is stored in memory in the form of rules and representations of words or parts of words. Orthographic processing, or coding, is the skill or facility to use orthographic knowledge to read and spell words. Graphical projection is a protocol, used in technical drawing, by which an image of a three-dimensional object is projected onto a planar surface without the aid of numerical calculation. An orthographic drawing, sometimes called a working drawing, is usually the last drawing produced by a designer. It normally has three accurate views of a product, a front view, side view and plan view.

In recent years, the teaching of spelling is in the center of attention. This demands teaching various strategies for spelling instruction and doing research on them. Fresch (2003) in this regard states that nowadays reading and writing in classrooms have moved out of the "fill in the blank" mode, so the very visible skill of spelling has come under scrutiny. He (p. 819) also argues that "as the research community continues to analyze how one becomes an efficient speller, varying viewpoints exist regarding how to best instruct". By the advent of learning strategy research the teachers and researchers work more on learning strategies, and this kinds of research instantiate various strategies for teaching and learning different skills of languages.

Researchers and classroom teachers have many different and controversial viewpoints with respect to spelling instruction. Some like Henderson (1990) believe in developmental learning of spelling based on the changing attitudes about how children learn to spell. Some thought skill in spelling rely on an ability to memorize while others has shown that while memory does play an important role in learning to spell, it is not the only strategy employed in the process (Templeton & Morris, 1999).

Rubin (1975) argues that "The inclusion of knowledge about the good language learner in our classroom instructional strategies will lessen the difference between the good learner and the poorer one" (p. 50). Rubin, Chamot, Harris, and Anderson (2007) in their studies related to language learning strategies suggest that teaching students learning strategies, increases not only their knowledge of strategies but also their motivation and performance. With these remarks, there is a log of research done regarding strategy instruction and their effects. One type of these strategies is the strategy of learning and teaching spelling.

According to Henderson and Templeton (1986), there are three layers of information in the spelling system: Alphabetic layer, Pattern layer, Meaning layer. 'Alphabetic layer' refers to the vowels and consonants in a language and knowing that each letter symbol of the alphabet represents at least one sound. 'Pattern layer' provides information about grouping of letters for example, syllables, phonograms and spelling rules. The 'meaning layer' is about exploration of the meaning elements within words, like finding the roots of the words and connecting it to related vocabulary which is called word study. Basner (2014) considers the process of English spelling as a complex one that must be explicitly taught. He argues that "The knowledge of this three layer system and determining which of these above three layers apply to the students at the time we start to teach and to determine a starting point for spelling tuition is essential" (p.2). He concludes that:

"To conclude this paper it has to be said, that after taking many studies into account, it seems that spelling outcomes can consistently improve by applying strategies which include explicit instruction by using an engaging and multisensory approach, with multiple opportunities for practice. The important part is, to find out after assessing, in which layer and level of the spelling system we find the student in and to guide him/her by using the recommended strategies to gain a spelling knowledge, so that seemingly unpredictable words can become predictable in order to develop a love for literacy and spelling" (P.4).

Most of the research in spelling has expanded in the fields of linguistics, cognitive psychology and developmental psychology (Henderson & Templeton, 1986). Each of those fields helps to clarify some aspects of spelling and shows the best way of handling its learning/teaching (Odisho, 1994). "In the not too recent past, educators viewed English spelling as arbitrary and unpredictable; thus, in relation to the learner, spelling was regarded as a short step away from nightmare" (Schlagal & Schlagal, 1992, p. 418).

The word method is so excellent for giving the child its first little stock of words, and for helping out in words whose spelling is quiet unphonetic or which presents anomalies. According to Leipzig (2000), word study is a learner-centered approach to spelling instruction that teaches students to recognize and understand patterns in words, as opposed to relying on memorization. Students participating in a word study program are actively involved in the process of discovering spelling patterns and examining the alphabetic, pattern and meaning layers of English words.

Some other techniques are required for learners in order to spell correctly. In other words, they must turn sounds into symbols. This process requires a clear-cut auditory image of the word and, in addition, knowledge of representing these sounds by symbols in English. However, one cannot confidently rely on correct pronunciation and the knowledge of representing each sound with a symbol in order to produce a correct result, because for some words there is no way out but to memorize the written form and relate it

to the spoken form. In spelling and spelling strategies, according to Read (1975; see also Ehri 1986; Gentry, 1982), very young, or beginning spellers, may depend on an alphabetic or letter-name strategy where the letter of the alphabet is used to directly represent the sound. There are instances where there is one sound to one letter, but there may also be one-to-many or many-to-one phoneme-to-grapheme relations (Treiman, 2000).

Studies by van Daal and Reitsma (1993) and Bosman and De Groot (1989) have examined the effects of copying words and writing words from memory. The first study found copying to be the most effective while the other study found writing from memory to be the most effective exercise. A recent replication study (Bos & Reitsma, in preparation) showed that in the short term, poor spellers profit most from copying but in the long term, both typing exercises – writing from memory as well as copying – have the same effect on spelling. Some other studies showed that several strategies, like visual and phonetic strategies, are helpful in improving spelling performance. Apart from visual and phonetic strategies (Lennox & Siegel, 1996; Steffler, Varnhagen, Friesen, & Treiman, 1998), emphasizing the meaningful elements that form words (morphology), providing a meaningful context (semantics), and instruction in how to use the different strategies have also shown to be helpful to improve the spelling of children (Butyniec-Thomas & Woloshyn, 1997; Foorman, Novy, Francis, & Liberman, 1991; Kernaghan & Woloshyn, 1995; O'Conner & Padeliadu, 2000).

Answers to the following questions are sought in this study:

1. Is the new strategy of practicing spelling introduced in this paper effective for EFL learners?
2. How does this new strategy of spelling affect language learners in the present study?

3. Method

3.1. Participants and Context

Two groups were chosen in this research: control and experimental. Some 15 students were in the experimental group and 14 in the control one. They were about 15 years old and were in the third grade of secondary school, in a mainstream educational system in Tabriz, Iran. In the present research, two groups of the participants were given a pretest of spelling, the new strategy of learning and teaching spelling was introduced and taught to the experimental group by the researchers, then a posttest was given.

This simple but effective spelling method is named Photography, as the students act as a camera and this name helps them to do it properly. It is implemented in the following three steps:

In the first step, the students are asked to pay special attention, focus on the word, and examine it thoroughly, while the teacher manages the time. This step is analogous to setting the camera to take the picture and zoom the target case.

In the second step, the students write the word in the air without any pen and paper just by using their fingers while they are asked to close their eyes, in order to avoid any distraction by the environment. If they recognize that they cannot remind some part of the word, they are allowed to go back to step one and take the picture of the word again. This step is analogous to the process of preparing the picture to appear by camera.

In the third step, the students write down the word on the paper and juxtapose it with the word in the book or on the board. If they are exactly the same, they have learnt it and to stabilize it they can practice more on this way, and if their written word is misspelled, they should repeat it from the scratch (first step). This step is analogous to developing the picture.

Students were so excited and willing to practice spelling with this method, first because they found it entertaining, and could help them free themselves from the problem of confusing spellings. Second, because they observe their obvious progress, so they are encouraged and eager to follow it. Also they learn the word as a whole at sight, and they discover the patterns themselves. So it is a learner-centered strategy that enables the learners to recognize and discover the patterns in words.

3.2. Procedure

This research intended to test the effects of a new strategy on spelling scores by taking a pretest of spelling from lesson two of *Prospect 3* (the English textbook for third grade of secondary schools in Iran). The tests were administered on the same day and at the same time to both groups, both tests were administered by a proctor other than the researchers in order to get rid of the probable effect or bias. To consider the degree of difficulty and also to avoid the effect of teachers' styles, the items of the test were designed in a teamwork of four teachers. In order to avoid inter-rater effect, each paper was separately investigated and marked by two teachers, then the mean of the two scores was considered as the final score.

After teaching the new method for the experimental group and practicing it for several sessions, the students were asked to study the same lesson again, but this time by practicing the words with the new method. The posttest was administered to both the control and experimental group again on the same day, with a proctor other than their own English teacher to avoid the differences in exam condition in both groups. The exam papers were scored by two English teachers and the mean of the two scores was considered as the final score.

3.3. Data Analysis

The data was analyzed by SPSS, version 22. Using a one-way ANCOVA, the score means of pretest and posttest for the two groups were measured and compared, and the probable effect of pretest on posttest was brought out and eliminated by considering it as a covariate.

4. Results and Discussion

4.1 Results

The results of the ANCOVA analysis on the effect of this new spelling strategy on students' spelling skill are presented through the following tables. Group 1 stands for the control group and Group 2 for the experimental group.

The normality of test distribution was tested, the distribution of pretest and posttest was normal. Table 1 shows that the variances of scores in both groups are homogeneous, because the p-value of F Levene in pretest and posttest is greater than 0.05.

Table 1
Test of Homogeneity of Variances

	Levene Statistic	*df1*	*df2*	*Sig.*
Pretest	.006	1	27	.940
posttest	.243	1	27	.626

Table 2 shows the pretest as covariant and posttest are reliable. The Cronbach's Alpha is greater than 0.70

Table 2
Reliability Statistics

Cronbach's Alpha	*No. of Items*
.833	2

As can be seen in Table 3, regression grade is homogenous. It is because the P value of group*pretest is greater than 0.05, P-value 0.80>0.05.

Table 3
Tests of Between-Subjects Effects

Dependent Variable: posttest

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	180.460[a]	15	12.031	6.703	.001
Intercept	4628.045	1	4628.045	2578.482	.000
Group	23.402	1	23.402	13.038	.003
Pretest	143.411	9	15.935	8.878	.000
group*pretest	4.040	5	.808	.450	.806
Error	23.333	13	1.795		
Total	6971.000	29			
Corrected Total	203.793	28			
a. R Squared = .886 (Adjusted R Squared = .753)					

Table 4 shows that the correlation between covariant and independent variant is linear because P-value of pretest is less than 0.05, P-value 0<0.05

Table 4
Tests of Between-Subjects Effects

Dependent Variable: posttest					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	154.174[a]	2	77.087	40.393	.000
Intercept	1.851	1	1.851	.970	.334
Pretest	123.671	1	123.671	64.802	.000
Group	45.376	1	45.376	23.777	.000
Error	49.619	26	1.908		
Total	6971.000	29			
Corrected Total	203.793	28			
a. R Squared = .757 (Adjusted R Squared = .738)					

According to Table 4, the P value of Group factor is less than 0.05, so it was concluded that there is a significant difference between the score means of the control group and experimental group, so the spelling strategy was effective.

According to the data analysis and the results, we can reach this conclusion that this strategy of spelling was effective. As for whether the effect was positive or negative, this can be disclosed by looking into and comparing the score means of posttest and pretest in the experimental group. Table 5 presents that the score mean in the experimental group has been significantly improved.

Table 5
Report of Means of the Experimental in Pre and Postests

group		pretest	posttest
1.00	Mean	14.2143	14.2143
	N	14	14
	Std. Deviation	2.32639	2.80600
2.00	Mean	13.7333	16.2667
	N	15	15
	Std. Deviation	2.08624	2.25093
Total	Mean	13.9655	15.2759
	N	29	29
	Std. Deviation	2.17917	2.69784

4.2 Discussion

This study displays a type of research which is in line with Allwright's (1993) exploratory teaching in which he tried to invite teachers to get practical ideas from classroom investigation, and in Kumaravadivelu's (2001) point of view, the strategy introduced in this paper is considered a "micro strategy" which is a classroom procedure. This paper aimed to present a micro strategy in teaching/learning spelling, and evaluated its effectiveness. The findings of this investigation showed that the new strategy has a positive effect on learning

spelling, the scores of participants in the experimental group increased significantly after treatment, thereby their writing improved. Lensk and Verbruggen (2010) suggest that improving spelling skills eventuates to an improved writing skill. Also the findings of this paper are in line with the rationale of 'word method', as Leipzig (2000) suggests, learning a word as a whole at sight.

Spelling is a visual skill, this new strategy benefits from this attribute and put more emphasis on visual skills, also by using hands and adding a variety other than just visual, hands-on learners who learn better by manipulating with letters can improve their skills. This is a simple but effective strategy in that it is easy to use and learners can implement it in every situation. Participants of this research considered this way of practicing spelling as a play, so it did not bore them easily. The findings of this study are in line with parts of the assertions of some previous research which hold that visual memory plays an important part in mastering the spelling of new words as well as checking and proofreading to confirm correct spelling. It aids in recall from our long-term memory of correct sequences of letters and patterns and learning to spell irregular words (Malatesha et al., 2008: Bissaker & Westwood, 2006)

5. Conclusion and Implications

This strategy has been used for about four years in English classes of secondary and high schools by the researchers, and it was mostly accepted by the students. The effectiveness of this strategy was tested through this study. Furthermore, some teachers, as colleagues of the researchers at school, were suggested to use this strategy in the class. They were also satisfied with it and reported learners' eagerness to practice in that way. After some sessions, learners were completely familiar with this strategy, they managed time by themselves, and there is not any need to allocate a lot of time to implement it. In other words, both students and teachers can save time. Replication of this study is convenient and it can be easily implemented and evaluated in the class.

Teachers and educators can use this strategy in their classes without any need for specific instruments and special facilities. Learners and teachers can modify, change or add some steps to it regarding their contexts of use or interests. This strategy also can be used either independently or as a stage of a more complex method.

This study was done just on a limited number of participants. Asking students to act on a new strategy needs an appropriate atmosphere in the class, and learners should be cognizant that the new way of learning aims to facilitate their learning process. Students in too strict classes tend to evade acting properly to a new strategy or at least they limit it to the class; on the other hand, students under a ramshackle situation try to take the strategy as mockery. Therefore, success of any new strategy in the class is interrelated with teacher-student relations and affective conditions in the class. This issue can be considered the second limitation of this strategy. In addition, implementation of this method by the researchers was limited to the learners with secondary and

high school, its effect on learners with advanced or upper-intermediate levels can be investigated in other studies. Adding variety to this strategy can be a subject of future studies. It is also possible to investigate its degree of effectiveness on different proficiency levels.

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