An Investigation of the Effect of Hypermedia on Improving EFL Learners' Spelling

Zahra Taziki (M.A)1, Seyed Jalal Abdolmanafi-Ronki (Ph.D)2
1. Department of English Language Teaching, Gorgan Branch, Islamic Azad University, Gorgan, Iran & Department of English Language Teaching, Golestan Science and Research Branch, Islamic Azad University, Gorgan, Iran
2. Department of English Language and Literature, Golestan University, Gorgan, Iran
Email: j.abdolmanafi@gmail.com

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ABSTRACT

This study was an attempt to investigate the effect of using Tell Me More software on improving EFL students’ spelling skill. The spelling improvement of students exposed to multimedia English lessons was compared with the spelling improvement of students not exposed to multimedia lessons. Thirty-four EFL students from two classes sharing a similar social and educational background chosen by a background questionnaire and a language proficiency test took part in the research. Then seventeen students in each class at the elementary level of proficiency were randomly assigned into either experimental or control group. Next, the two classes were administered a spelling test. For a period of four weeks in eight sessions the educational software Tell Me More was offered to the experimental group. After eight sessions both groups were retested through a spelling test to examine the effect of software on users’ functions and its influence on the spelling ability of the participants in the experimental group. The findings indicated an important increase in the learning outcomes of experimental group from pretest to posttest in which their scores were significantly higher than those of the control group. In addition, the participants in the experimental group perceived using hypermedia as a useful tool for language learning, particularly spelling skill.

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1. Introduction

Spelling is a sub-skill of writing. Reading depends on recognition, while spelling depends on the recall of an exact sequence of letters. Spelling is very significant in written language. Essinger (2006) maintains that writing and spelling permit us to conserve language and thought eternally, and so is probably the most exciting technology we have ever invented. A good speller can see if a word looks right and will have integrated the conventions of English spelling to enable them to recommend an option if it looks wrong.

Spelling is one of the most difficult areas in English language. Native and non-native learners have difficulties in learning how to spell English words. The chief reason that makes English spelling such a difficult skill to acquire is that there is no direct relationship between sounds and letters in English. There are forty-four sounds and only twenty-six letters to represent them. That intends knowing the pronunciation of a word does not enable one to foretell its spelling with confidence. In fact, English words very often do not look like they sound. Ehri (2000) holds that learning to spell is significant as it is unintelligibly joined with learning to read. Further, according to Venezky (1970), it is a complex developmental task due to the fact that it needs students to learn the sound-symbol connection as well as more than 2000 rules of the language. Treiman (1993) stipulates that it may be a hard task in the English language which is composed of about 44 units of sound with just 26 letters utilized to signify them. When student are learning to spell in a foreign or second language in addition to their first, spelling can become
even more complex. Moreover, Davis (2011) states that learners are not learning to spell efficiently and traditional methods are not supplying sufficient prop for learners. The traditional methods to teaching spelling – memorize this list and take a test at the end of the week – is not efficient for a lot of learners. Spelling is a sub-skill of writing; it is a primary visual motor skill. Spelling is very significant in written language. "Any mistake in spelling can influence the written product and may lead to misunderstanding" (Allen & Vallette, 1972, p. 226). Spelling is a significant activity in the process of learning a foreign/second language. Also, "Spelling is necessary for composition and composition writing strengthens the mastery of correct spelling though spelling is different from composition" (Al-Hamash, 1984, p. 124). Moreover, the mastery of spelling requires the mastery of English spelling patterns at the level of recognition (reading) and at the level of production (writing). Spelling is an important activity in the process of learning a foreign language. It is also a vital element for efficient communication between the writer and the reader. Al-Khaffaji and Al-Shayib (1987) express that "to spell correctly makes written communication easier while misspelling might lead to interruption of communication and misunderstanding" (p.7). In addition, Beverly (2010) stipulates that in order to communicate efficiently, a person requires to develop the ability to spell fast and accurately the words he utilizes in his everyday writing. Cook (2007) expresses that "English is not a phonetic language, i.e., it is not written as it is spoken or it does not have closer phoneme – grapheme correspondence" (p. 11). Therefore, spelling difficulties are expected to rise for foreign students learning English as a foreign language, but also for native speakers. Foreign language learners also may have a range of difficulties with spelling and the most difficult aspects of English spelling for them are complex correspondence between sound and letters. An individual native speaker may know the English language, but L2 learners may not know the actual system of English, and will appear to utilize the wrong letter (Cook, 2007). Spelling is not an easy task for a lot of learners. Therefore, teaching spelling, especially to children facing spelling difficulties, is a vital component of literacy instruction. Besides the social prestige surrounding high or low spelling performance, there are some other reasons related to schooling for explicit spelling instruction. First, difficulties in inferring the correct spelling may interfere with the execution of higher-order processes that could result into text writing constraints (Graham, 1999). Second, spelling difficulties seem a persistent phenomenon. If these difficulties stay untreatable, it is quite possible to insist throughout the elementary school (Juel, 1988) and high school (Shankweiler, Lundquist, Dreyer, & Dickinson, 1996). Foreign language learners likewise have difficulties with spelling particularly they face difficulty in association between sound and letters and with English vowels. The English orthography has merely 26 letters that can be utilized for representing 44 phonemes. Therefore, since there is no direct relationship between sounds and letters, English words very often do not resemble what they sound. Hence, English spelling is a very problematic area because knowing the pronunciation of a word does not allow one to predict its spelling. The same letter may be pronounced differently in various words. Croft (1983) indicates that accurate spelling is vital for efficient writing and this is only possible justification for learning. The center of attention in this research is on English spelling.

2. Review of the Literature

According to Fagerberg (2006), English spelling is unquestionably a hard matter, and students around the world have problem obtaining the letters right. Even then native speaker are not free from committing errors. Students are still producing spelling errors in large number in their writing after a lot of drilling and training in the schools and institutes. Even an instructor cannot comprehend whatever they need to communicate in the form of writing. Second language teachers have been reluctant to execute the utilization of computers in their instruction for different reasons. Some teachers follow the adopted textbook of their district, which indicates a behaviorist approach to learning (Mitchell & Myles, 1998). According to Heinich, Molenda, Russell, and Smaldino (2002), textbooks have been the establishment of classroom instruction. These instructors may not have sufficient training in computer applications. This makes them uncomfortable utilizing technology as a part of their instructional collection. Zhao and Cziko (2001) confirm that the absence of instructor involvement in the utilization of technology is focused around the absence of training that will supply technological skills that could lead to technology integration. Outdated and behaviorist approaches are the solely methods that some teachers were taught in their undergraduate coursework. Language teaching has changed in recent years. The utilization of multimedia plays a major role in teaching. Therefore, the multimedia software can be included into the foreign language classroom to develop the spelling ability. Technology can be the bridge between the behaviorist instruction of the past and the new instructional methods lately developed. Technology in second language classroom has become the new tool of communication and requires to be seen as a process on what to teach, how to teach, and how learners can learn most efficiently (Stone, Rennebohm & Breit, 2005). Foreign or second language teachers who become instructed in the profits of utilizing technology as a valid and efficient teaching tool will find that it increases learner’s understanding. In light of the potential of technology, Iranian EFL teachers at high school level are utilizing computers that are the substitution of
tools of education (e.g., blackboards, chalk, and overhead projectors) due to the fact that they supply them new and better means of instructional ways and therefore enhance their English spelling teaching and learning. This does not intend that they don’t have any problems toward the utilization of computer technology or are able to use it well or that students’ learning has been increased substantially by such technology (Fathiyan, 2004). This study contributed to the body of knowledge by adding to the understanding of how multimedia/hypermedia is a viable tool to utilize in teaching and improving spelling skill in a foreign language. It likewise aided to determine how technology influences students’ attitudes and motivation, and if this tool will assist motivate them to learn another language more effectively. The review of the research showed that multimedia, with all the variety of media that it supplies, is becoming a significant tool to improve learning with innovative ways. Multimedia offers advantages to students and teachers as a catalyst for change in the instructional environment (Heinich et al., 2002). Learners play an active role in their learning, investigating the different paths necessary to learn, and strengthening their learning as necessary (Qu & Hewitt, 2003). It is said that instructors had the tools to guide their curriculum with a purpose and a particular direction. Multimedia additionally allowed the instructors to act as facilitators of learners’ learning rather than experts of knowledge (Vygotsky, 1978). Multimedia can be incorporated in any subject, having the same effect on learners’ learning; expanding interaction, concentrating on meaning, and amplifying the positive effect of education on learners (Chapelle, 2001). Yeh and Wang (2003) investigated the effectiveness of three types of vocabulary annotations on vocabulary learning for EFL college students in Taiwan: text annotation only, text plus picture, and text plus picture and sound. They also determined whether learners with certain perceptual learning styles benefited more from a particular type of vocabulary annotations. The perceptual learning styles investigated were auditory, visual-verbal (with text), visual-nonverbal (with pictures), and mixed preferences. The results of the study showed that the version with text plus picture was the most effective type of vocabulary annotation. Perceptual learning styles did not seem to have a significant influence on the effectiveness of vocabulary annotations. The initial goal of this study was to determine whether or not the use of multimedia in an English course accommodates the achievement and attitude among elementary level students at Cheraghali high school in Gorgan, Iran. The goal of this study was to identify, describe, and compare any relational differences in achievement and attitude alterations that occur among English spelling students using hypermedia as an instructional delivery tool with those learners who partake in traditional methods classroom environment. Clark and Creswell (2006) expressed that mixed method procedures give researchers with a rigorous approach to respond their research questions. The utilization of quantitative and qualitative methods was proper to concentrate on contrasting two groups in both the area of achievement and in the area of attitude. The goal of this study also was to identify the best teaching strategy which may be useful in learning spellings of words. English spelling is a problem for most learners of English. This study was planned to examine the utilization of multimedia technology, as a tool for improving spelling at Cheraghali high school. This study was intended to discover quantitative and qualitative results related to achievement from a control group and an experimental group, and then to follow up with an interview and questionnaire to discover results related to attitude in experimental group. Quantitative results addressed the comparison of instructional methods as related to academic achievement with elementary level foreign language students at Cheraghali high school in Gorgan, Iran. An interview was used to identify differences in attitudes associated with different instructional methods of elementary foreign language students at high school. Qualitative results addressed the reactions of instructional methods with elementary foreign language students at Cheraghali high school in Gorgan, Iran.

2.1. Research Questions
1. Does using hypermedia enhance spelling ability of Iranian elementary students?
2. What are Iranian elementary learners’ perceptions of using hypermedia for improving spelling ability?

3. Methodology
3.1. Participants
For the purpose of conducting this study, thirty four students from two classes were randomly divided into two groups, namely as the experimental group and control group (each 17). All of the participants were studying English at Cheraghali high school in Gorgan, Iran. They were at elementary level determined by a proficiency test. The participants involved female students only. Their age range varied from 15 to 17. The native language of all the participants was Persian. After the selection of the participants, the English language proficiency, oxford test was administered to the participants of the study. The aim of the administration of this test was to ensure, as a triangulation procedure, the homogeneity of the learners in terms of general language proficiency prior to the treatments.

3.2. Instrumentation
3.2.1. Background Questionnaire

Corresponding Author: Department of English Language and Literature, Golestan University, Gorgan, Iran
Email: j.abdolmanafi@gmail.com

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In order to elicit subjective information of participants, a background questionnaire was developed by the researchers. It covered issues such as the participants' age, gender, and first language status.

### 3.2.2. Proficiency Test
In order to be assured of the homogeneity of the control and experimental groups in terms of English language proficiency, Oxford test was given to the students. It included grammar and structure as well as reading comprehension section so that students can be scaled in a continuum, arranged by their proficiency level. It proved to have a reliability of 0.73. It consisted of 40 multiple-choice items. The time allotted was 60 minutes.

### 3.2.3. Spelling Test
The other test that was used in the process of the research was the spelling test. The participants in both experimental and control groups took a pre and post spelling test which consisted of 25 items. The participants finished the test in 30 minutes. The items of the test were chosen from the achievement tests provided by the researcher. The items chosen were based on the contents of level 2 of Tell Me More software which involved spelling. As a triangulation procedure, the content validity of the selected items was approved by three colleagues involved in teaching English as a foreign language at the same high school. All of them maintained that the test covered the contents of the mentioned lessons and was both representative and comprehensive. In order to estimate the reliability of the test, it was administered to a group of 15 students who were studying English at the same level at same high school, i.e., Cheraghal high school, Gorgan, Iran, where the same lessons were taught. The reliability of the test was estimated through Cronbach's alpha was 0.75, which is highly reliable.

### 3.2.4. Interview
Another instrument used in this study was semi-structured interview which were asked to answer at the end of utilizing hypermedia software. The interview questions consisted of four open-ended items. The amount of time required to respond to the open-ended items was approximately 15 to 20 minutes. The open-ended items were intended to elicit the participants’ opinions regarding the hypermedia software and how it could be improved the students' spelling. In effective communication, "a question must be understood by the respondent in the way the researcher intended, and the answer must be understood by the researcher in the way the respondents intended" (Foddy, 1993, p.24).

### 3.2.5. Tell Me More Software
The hypermedia software used in this research was Tell Me More, which is one of the most popular computer-based instructional software. It has the characteristic of having an interactive interface which benefits the students by allowing them to get extra information about the subject or the unknown word simply by clicking it. Another feature of this software is the capability of being easily adapted to the needs of the user. Therefore, it can be used particularly to bolster the listening skill. It also uses the immersion technique that does not allow using any sort of translation in any level of the teaching. Moreover, the lessons that are presented in the Tell Me More are divided into five parts. This feature helped the students find the exact level of the lesson based on their capabilities.

### 3.2.6. Treatment
In order to carry out the research, the learners were required to practice English with the aid of the software in the classroom and their homes. Their practice sessions were about 45 minutes in the classroom and half an hour each day at home. The treatment lasted four weeks in eight sessions. They were asked not to use the dictionary but the interface of the hypermedia that gives the extra needed information. They could access the information simply by clicking the words or paying attention to the pictures that aid the students get the context. For the control group, the same teaching material was used as that of experimental group. Actually hypermedia program was not administered in this group.

### 4. Procedure
At the beginning of the study, two classes were selected. Then, they were assigned into two groups. One of the classes randomly was selected as control group and the other served as the experimental group of the study. The study was carried out in the academic year 2014. In the first step, the students were administered the background questionnaire as well as the proficiency test in order to determine their overall level of English proficiency. Both groups in the present study were at elementary level determined by the proficiency test that corresponded to the level two of the software. In the second step, their spelling proficiency was evaluated in order to determine their spelling proficiency before practicing with the hypermedia. After the spelling proficiency test they were required to work with the software half an hour every day. In the final step their spelling proficiency level was evaluated again in order to determine the impact of working with the hypermedia. The final step was to do an interview with experimental group at the end of utilizing hypermedia software. The interview questions consisted of four open-ended items. The amount of time needed to respond to the open-ended items was approximately 20 to 25 minutes.

**Corresponding Author:** Department of English Language and Literature, Golestan University, Gorgan, Iran  
**Email:** jabdolmanafi@gmail.com
The open-ended items were intended to elicit the participants’ ideas regarding the hypermedia software and how it could be improved the students’ pronunciation accuracy. The designed semi-structured interview referring to the objectives of this research with the students were recorded, transcribed.

5. Results and Discussion

5.1. Findings from Tests

Having collected the data through the tests, the researchers applied the t-test formula to measure the differences, if any, between the experimental group and the control group. It is important to note that the researchers employed all the formulas with the level of significance set at 0.05 in all their applications. The following Table 1 and 2 illustrate descriptive of means of data. Table 1 illustrates the results of the independent samples t-test in the pretest.

### Table 1: Independent Samples T-Test Results of Experimental and Control Groups for Spelling Test in Pretest

<table>
<thead>
<tr>
<th>Scope</th>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. Error Mean</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>Experimental</td>
<td>17</td>
<td>12.0000</td>
<td>1.22474</td>
<td>.29704</td>
<td>0.605</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>17</td>
<td>12.2353</td>
<td>1.39325</td>
<td>.33792</td>
<td></td>
</tr>
</tbody>
</table>

As revealed in Table 1, the computed significance is equal to 0.605 which is bigger than the significance level set for the study (0.05). This indicates that there was no statistically significant difference between the two groups in the pretest. Table 2 illustrates the results of the independent samples t-test in the posttest.

### Table 2: Independent Samples T-Test Results of Experimental and Control Groups for Spelling Test in Posttest

<table>
<thead>
<tr>
<th>Scope</th>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. Error Mean</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posttest</td>
<td>Experimental</td>
<td>17</td>
<td>22.2941</td>
<td>1.86295</td>
<td>.45183</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>17</td>
<td>17.2941</td>
<td>1.26317</td>
<td>.30636</td>
<td></td>
</tr>
</tbody>
</table>

As represented in Table 2, the computed significance equals 0.000 which is smaller than the significance level set for the study (0.05). This substantiates the fact that there was a statistically significant difference between the experimental group and the control group in the posttest confirming the effect of hypermedia on improving the learners’ spelling.

5.2. Findings from Interview

The interviewees who partook in this research gave very special, clear and detailed answers for each question. The questions related to the characteristics and disadvantages of Tell Me More, the characteristics that assisted those most to improve English spelling, what improvement was required to the software, comparisons between the real teacher and the software, opinions regarding the learning without correction feedback. From the description of the characteristics of Tell Me More, it can be claimed that certain students found this software acceptable. Five of 10 opinions said that it allowed them to listen, record and practice again and again. It was helpful for them. The arrangement of its learning processes, vocabulary and sentences for the text practice was suitable for elementary learners. The functions of playing, listening and recording were useful. The pictures illustrating meanings, real people’s spelling and various practice drills were its different and special features and these were attractive to certain students. In this study, the students’ English proficiency was at the elementary level. Generally, they thought this software was satisfactory for learning spelling, but it had some disadvantages. The drills for practice or tests were useful for them. They also focused on the vocabulary and sentences practice instead of the whole text. They could listen and practice spelling English words again and again, and this feature was the most helpful. The disadvantages of this software and the improvements it needed were presented in the answers of the students. It did not have Persian translation and explanation of the vocabulary, sentences, text, and the operation icons and therefore students thought it was not easy for students to use. The comparisons made between a teacher and the software showed some features which the real teacher had or did not have, and which could be compensated for by the software. The students could practice with the software anytime and as long as they wanted, and the software could allow them to repeat as many times as they wanted. They were less shy when they faced the computer to speak English.

**Corresponding Author:** Department of English Language and Literature, Golestan University, Gorgan, Iran
**Email:** j.abdolmanafi@gmail.com
However, they would have liked the software to be like the real teacher, who can listen to and answer their questions, know their problems, give them examples and explanations, and joke with them sometimes. Students expressed that teachers could not be with them all the time, teachers could be tired and angry sometimes, and they felt shy and nervous when they spoke to their teacher. These problems could be overcome by the software. The findings indicate a significant difference between the control and experimental groups confirming the effect of hypermedia on improving the learners' spelling. The participants in the experimental group performed significantly better than the ones in the control group who did not use the Tell Me More software. When Tell Me More software was introduced to the students in experimental group, it was noticed that the students were encouraged as they were actively involved in the spelling activities. There are further confirmations for the results of the previous studies which concluded that the use of software has significant effects on spelling. This research indicated the improvement in the performance of the experimental group in the posttest, so the effectiveness of Tell Me More software in developing spelling of the elementary students has been proved. The results of this study are in accordance with some previous studies (e.g., Abdolmanafi-Rokni & Hamidi, 2015; Abdolmanafi-Rokni et al., 2014; Ayres & Melear, 1998; Marzbani, 2011; Vaughan, 2004) which asserted that the positive effects of hypermedia instruction are more than non-hypermedia instruction. The results of this study regarding this research question are not consistent with some previous studies (e.g., Yeh & Wang, 2003; Zarei & Gilanian, 2013) which asserted that there are no significant differences between effects of hypermedia instruction and non-hypermedia instruction. The analysis of the interviewees' responses indicated that attitudes of students towards multimedia curriculum were significantly different from the attitudes of students towards traditional curriculum. The students' attitude responses varied, creating a consistent thematic pattern in the responses. Students' statements were specific about the difference between the conventional instruction and the multimedia instruction in the classroom.

6. Conclusion & Pedagogical Implications

The results from this study suggest that the effects of using hypermedia in instruction are positive over non-hypermedia instruction as a whole in which the experimental group' performance in the posttest was significantly better than the control group after the practice session with the software. So, it can be concluded that the software proved to be effective in developing some spelling abilities among elementary students in the experimental group. Using software also helped the students concentrate more on the input, and consequently it resulted in better spelling performance. This paper indicated that the improvement of skills through the authentic material and varied tasks such as hypermedia raised the learner's interest in the experimental group. Hypermedia is assumed as a valuable tool for teachers and students because they can practice a particular skill as an activity in class, or out of a classroom. Students in the control group and the experimental group were exposed to the same lesson, similar activities. The only difference was the instructional delivery method. The control group was exposed to book, paper, and pencil activities during the instruction; whereas, the experimental group was exposed to multimedia presentations. Student's comments reflected the general attitude of the students in the English class regarding the use of technology in the English classroom. Students are eager to learn and understand how to use multimedia to improve learning, increase productivity, and promote creativity (Green & Brown, 2002). Some practical implications are presented which are on the basis of the results and findings of this study and suggest that foreign language teachers should be aware of the benefits that multimedia technology can bring to their curriculum and the advantage that multimedia can bring to the students' learning process by using strategies that can reach all students learning styles. The students who participated in this research showed that they had never been exposed to multimedia presentations during elementary level, but now they find multimedia a new appropriate tool for improving spelling.

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