The Effect of Digital Stories on Enhancing Iranian Pre-intermediate EFL Learners' Listening Comprehension

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Received: 2013.1.20
Revisions received: 2013.9.11
Accepted: 2014.5.10

Abstract

Learning a foreign language is a challenging process in which learners need motivation and encouragement through the use of modern techniques. The present paper investigates the effects digital stories may have on Iranian pre-intermediate EFL learners’ listening comprehension. To this end, the researchers carried out a quasi-experimental research in a language institution in Tabriz (Iran). In total, forty, 11-14-year-old female students participated in this research. Twenty students were in the experimental group and twenty in the control group. The Preliminary English Test (PET) was administered at the beginning of the study to check whether all participants were homogeneous in terms of English language proficiency. A pre-test of listening comprehension was designed to gather initial data on the learners’ listening skill prior to the treatment. The experimental group was presented with digital stories in a technology-equipped classroom. After the treatment, a post-test was administered to both groups to test the learners’ progression in listening comprehension. Then, using an ANCOVA test, the performance of two groups was compared. The findings indicated that the experimental group outperformed the control group in the final test. The results raise interesting issues related to the use of technology in the context of foreign language learning, substantiating the link between technology rich environment and improved language learning.

Keywords: EFL context, listening comprehension, digital stories


Introduction

Today, few teachers rely solely on traditional aids in their teaching process. Over the years, more and more technical inventions have been incorporated in the teaching context, by which teachers attempt to make their teaching more effective. One of the most widely used of these technologies is undoubtedly the computer. In recent years, with the development of media and computer technology, educators have begun to make use of multimedia and technology to improve their teaching and consequently students’ language learning. As Chang (1991) puts it, the vast majority of the published research on the effectiveness of media and technology in language instruction is encouraging. Among other benefits, according to Chang, new technologies present opportunities to accomplish multiple instructional goals (e.g., integrated language skills, critical thinking, and cooperative skills). They may also be responsive to different learning styles (e.g., auditory, visual, tactile). Incorporating multimedia and computer technology into language instruction opens up a new horizon for EFL instructors to improve the overall quality of language instruction.

According to Von Wodtke (1993, as cited in Reeves, 1998), multimedia is the integration of more than one medium into some form of communication or experience delivered via a computer. Most often, he continues, multimedia refers to a computer-assisted technology that integrates media such as text, sound, graphics, animation, video, imaging, and spatial modelling into a computer system.

The potential of multimedia in education does have a theoretical foundation. Bagui (1998) and Daniels (1995) summarize the theory of multi-channel communication in support of the potential for multimedia. According to this theory, humans have several channels by which data is communicated. If information is presented via two or more of these channels, there will be additional reinforcement, and consequently increased retention and improved learning.

The information contained in pictures can mean that less cognitive energy gets expended on linguistic decoding, the energy that can be channelled to other critical processes—predication and elaboration, for example—of the input (Koisawalia, 2005). In sum, as Meskill and Shea (1994) discuss, aural processing can be viewed as supported and facilitated by visuals. Visual support provides the learner hints on which to get meaning and make sense of the aural stream.
The fundamental principle behind multimedia learning is best described by Mayer (2005), one of the leading researchers in this area. He claims that people learn better from words and pictures than from words alone. In this context, words include written and spoken text, and pictures include static graphic images, animation and video. That using both words and pictures is more effective than words alone should not be surprising in light of what we know about how the brain processes information. Research tells us that the use of both words and pictures lets the brain process more information in working memory (Sweller, 2003). Extending this basic principle, Mayer (2005) and his colleagues tell us that narration and video is much more effective than narration and text. Similarly, according to Baddeley (2003), narration and video appear to be more effective than narration, video and text. Narration and text rely on the same channel to process information.

Meskill (1996) stated that in face to face interaction listening entails complex interpretive processes. An intricate web of situational variables interacts to determine what meanings are derived in conversation. Processing requirements such as reciprocity of interlocutors’ perspectives, the etcetera principle (filling in the gaps of what one hears with knowledge of the language and the world), and combined retrospective and prospective meanings all come into play. As Meskill (1996) puts it, “this multi-faceted processing spells a heavy demand when the medium of communication is a foreign or second language” (p.180). Dunkle (1991, as cited in Meskill, 1996) found that theoretical models that attempt to capture the intricate nature of the listening process cannot hope to account for the myriad of cognitive and external environmental factors that influence reception, interpretation, and response construction. In short, rendering a complex activity like listening into a single construct has proved difficult. Models that have been attempted, however, share one underlying assumption: listening is not simply a receptive act – multiple physiological and cognitive processes are engaged simultaneously.

The view that listening is an active and interactive process has, for example, cast the learner in a role other than the passive receiver of aural input. Classroom emphasis is now an aural intake through active negotiation of meaning. In face to face interaction, the listener, and not just the speaker, engages in the active making of meaning. Rost, (1993, as cited in Meskill, 1996) argued that this mutual negotiation of meaning between speakers
activates the cognitive and sociocognitive processes necessary for language acquisition to occur. In short, listening has been recast as an activity central to the L2 acquisition process and a skill integral to overall communicative competence (Brown, 1994).

Meskill (1996) stated that multi modal processing is the engagement of more than one perceptual modality at a time. The opportunity for multimedia users to process combined media (text, sound, and video) simultaneously is a popular trend in software design in general, and in developing language learning materials in particular. He further noted that the increase of sensorial input which is provided via technology “coupled with the potential for active engagement in, and interaction with this input predicts that content will be more readily integrated into a learner's developmental system and, in turn, recalled more thoroughly” (p. 182).

Armstrong (2003, as cited in Park, 2011) defined digital storytelling as “an emerging form of storytelling that has the same capabilities as oral and written storytelling, but offers other unique characteristics for teaching and learning. Digital storytelling involves telling stories and sharing information through multimedia” (p. 12).

There seems to be a general consensus among scholars about the key role listening comprehension plays in foreign language teaching, especially with young learners (Rost, 1993, as cited in Verdugo, 2007). According to Van Scoter, Ellis and Railsback (2001), web sites for children, if appropriately selected and organized, can offer a range of opportunities to develop foreign language listening and proficiency in a playful and enjoyable context. Elley (2000) noted that tales and stories are effective listening materials for children to develop listening comprehension and literacy both in their first and foreign language. In fact, at the early stages of language acquisition, stories can offer a valuable way of contextualizing and introducing new language, making it meaningful and memorable (Wasik & Bond, 2001; Wright, 2000). According to Mallan (1997), stories are associated with feelings and memories, as they are a distinctive manifestation of cultural values and perceptions. Besides, they present linguistic forms, grammar, phrases, vocabulary, and formulaic speech within a meaningful and structured context that supports comprehension of the narrative world. This verbal information is commonly complemented with non-verbal information in the form of large pictures, which helps children reconstruct the storyline (Kellerman, 1992).
During the last few years, with the increase of more sophisticated multimedia technology, there is renewed interest in the complementary relationship of visual and auditory channels in listening comprehension (Brett, 1995; Felix, 1995). According to Brett (1995), multimedia applications for foreign language learning can provide a more realistic picture of the new language and culture in the classroom, including not only linguistic but also paralinguistic features such as body language, gestures, prosody, etc., which help to convey meaning to the learners. It is believed that digital stories, if appropriately selected, can prove to be very useful in developing learners' listening skills.

A number of studies have investigated the effect of using multimedia technology on language learning especially in EFL classes (Gunduz, 2006; Verdugo, 2007). Most of these studies have supported the positive effect of multimedia technology on different aspects of foreign language learning.

In a study conducted by Gunduz (2006), the effect of using multimedia and audiobooks on the motivation of a group of beginning language learners was examined through an experimental pre-post test design. According to his study, the use of audiobooks in the classroom increased the success of beginning English learners in general, and also served as an excellent aid to those who struggled with pronunciation. Verdugo (2007) also examined the effects that digital stories might have on the understanding of spoken English by a group of 6-year-old Spanish learners. To accomplish this aim, a quasi-experimental research study was carried out in six state schools in Madrid. A pre-post test design was used to investigate whether internet-based technology could improve listening comprehension in English as a foreign language. The findings indicated that the experimental group outperformed the control group in the final test administered. It was argued that these stories made the development of listening ability more effective and entertaining.

In his study of the effects of digital video in language classrooms, Shrosbree (2008) described that videos, as an alternative to more traditional cassette tape and CD listening comprehension activities, allowed learners to see the content of the discourse and the speakers' body language, as well as other visual aids to comprehension. Further, he contended that digital video technology allowed teachers to manipulate authentic videos, which can be edited, subtitled and simplified to make them more suitable for language learners.
Inspired by the above mentioned theoretical views and noticing the lack of such a study in Iranian EFL learning context, the researchers set out to investigate the effect of digital stories on enhancing Iranian pre-intermediate EFL learners' listening comprehension. Thus, the following research question was posed:
Does the use of digital stories have any effect on enhancing Iranian pre-intermediate EFL learners' listening comprehension?

**Method**

**Participants**
In order to conduct the study, the researcher selected two intact groups, each consisting of twenty female students from Sun Language Institute in Tabriz. The students in both groups were at pre-intermediate level and their ages ranged between 11 and 14. All the participants were Iranian whose official language was Farsi. The two groups were randomly assigned to the experimental and control groups.

**Instrumentation**
To measure the initial homogeneity of both experimental and control groups, the researchers used PET, which is a standardized English proficiency test assessing general English Proficiency of learners at intermediate level. As the focus of attention was on listening, the researcher used the reading and listening parts of the PET to assure the homogeneity of the two groups in terms of listening and reading. So, a sample of PET test with a ceiling score of 60, released by Cambridge ESOL exam (lower-intermediate examination) for learners of English, was conducted to select the participants on the basis of their test scores. The reading section included 35 multiple-choice questions on grammatical structures and vocabulary. The listening section included 25 multiple-choice questions which had to be answered after listening to a conversation or a monologue. According to Farhady (1995), to be more cautious and to avoid any potential differences between the groups under investigation, a pre-test needs to be administered. For this reason and for the purpose of estimating the initial homogeneity of the participants in terms of listening, the researchers utilized the listening part of another sample of PET. Moreover, as the post-test, again the listening part of another sample of PET was used.
In order to facilitate the integration of technology-based instruction, the experimental group was provided with an extra class per week in which they were presented digital stories in a technology-equipped classroom. There was a computer in the classroom which was connected to the internet and other equipment necessary in achieving the objectives of the study.

**Procedure**

At the beginning of the study, a standardized PET test was administered to check the learners’ proficiency level and to assure their initial homogeneity. As the focus of the study was on listening, only the reading and listening parts were administered.

Afterwards, the listening part of another standardized PET test was administered to gather initial data on the learners' knowledge prior to any research intervention and to check whether all participants had similar levels of English listening comprehension ability. These tests were taken from Cambridge ESOL exam center (lower-intermediate examination) for learners of English.

In keeping with the objectives of the study, both groups were provided with the same textbook (Interchange 1). The units of the book were presented according to the principles of the institute, comprising three phases of **Engagement**, **Study**, and **Activation**. The classes were met twice a week for both groups.

The experimental group, in addition, was provided with an extra class per week in which digital stories were presented as a supplementary material in a technology-equipped classroom. These stories were taken from a site containing digital stories appropriate for pre-intermediate learners (www.storylineonline.net). Sixteen digital stories were selected and classified according to their topics. The only criterion taken into account in story selection was the length of the stories (i.e., very long stories were excluded in order to avoid sheer boredom and to keep the learners enthused during the listening task). Inspired by Verdugo’s (2007) study, the researchers presented the digital stories in three stages, similar to the way the units of the textbook were presented, using a pre- and post-computer work. This pedagogical practice facilitated better integration of the digital listening activities into the teaching practice (Verdugo, 2007). The pre-
computer activities presented to the whole group were intended to activate prior knowledge about the topics covered in the story. The aim of the post-computer work was to reinforce language acquisition through pair work and peer-collaboration. For example, one of these post-computer tasks asked young learners to retell the story. The aim was to make learners practice lexis, functions and the pronunciation of simple formulaic phrases that they have been previously exposed to during the listening activities. The course lasted for six weeks for both groups.

At the end of the course, the listening part of another sample of the standardized PET test was administered as the post-test to both groups to examine the effect of the treatment. To analyze the data, the researcher used an ANCOVA test to estimate the difference between two groups.

**Design**

The researcher was concerned with the development of human behavior in an educational context where random sampling was not possible. Therefore, a quasi-experimental design with pre- and post-tests was selected for the present study to find the effect of the independent variable (i.e., instruction of digital stories), on the dependent variable (i.e., listening comprehension development of Iranian pre-intermediate EFL learners).

**Results**

This study was an attempt to scrutinize the effect of digital stories on the development of listening comprehension of Iranian pre-intermediate learners. The research question in this research addressed the impact of teaching digital stories on listening comprehension development of learners. Having collected the research data from the experimental and control groups through three standardized English Proficiency tests, the researchers used the Statistical Package for Social Sciences version 11.5 to analyze the data. Two independent samples t-tests were used to test the initial homogeneity of the groups in general proficiency and listening comprehension skill. Moreover, an ANCOVA was conducted to estimate the effect of teaching digital stories on the learners' listening comprehension. The results of the data analyses are presented in three distinct sections starting with the learners' general English proficiency, followed by the participants' initial
homogeneity in the listening comprehension ability in the pre-test, and then their performance on the post-test.

1. The Preliminary English Test

The researcher administered a 60-item standard Preliminary English Test with a ceiling score of 60 to estimate the general homogeneity of learners in both groups. The scores obtained from the PET proficiency test were analyzed using Independent Samples T-test. Since normal distribution of scores is the essential requirement for running Independent Samples t-test, the one-sample Kolmogorov-Smirnoff Test was used to test the requirement. Table 1 presents the results.

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kolmogrov-Smirnov test for the PET Test Scores</td>
</tr>
<tr>
<td>VAR00001</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Normal Parameters,a,b</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Most Extreme Absolute Differences</td>
</tr>
<tr>
<td>Positive Differences</td>
</tr>
<tr>
<td>Negative Differences</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
</tr>
</tbody>
</table>

*a. Test distribution is Normal  
b. Calculated from data*

As indicated in Table 1 the scores are normally distributed, P=0.11 > 0.05. Thus, the researcher administered the Independent-Samples T-test, the results of which are presented in Table 2 and 3.

<table>
<thead>
<tr>
<th>Table 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Statistics of the PET Test Scores</td>
</tr>
<tr>
<td>VAR00001</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>PET control</td>
</tr>
<tr>
<td>Experimental</td>
</tr>
</tbody>
</table>
Table 3
Independent Samples T-test of the PET Test Scores

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.124</td>
<td>.727</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-.770</td>
<td>37.85</td>
</tr>
</tbody>
</table>

The results reveal the homogeneity of variances between the control and experimental groups, P= 0.44> 0.05. Thus, there was no significant difference in the proficiency level of the participants at the beginning of the study.

2. The Pre-test (Listening)

The researcher used the reading and listening parts of PET just to estimate the general proficiency of the participants in the listening and reading skills and to assure the homogeneity of the participants in the experimental group and control group. To estimate the participants’ initial listening comprehension ability prior to the treatment and to check whether all participants had similar levels of listening ability, the researcher administered a the listening part of another sample of the PET test, including 25 items with a ceiling score of 25, released by Cambridge ESOL Exam (lower intermediate examination) as the pre-test.

Like the general proficiency test, a K-S test was also applied to check the normality of the distribution of the scores. The results are shown in Table 4.

Table 4
K-S Test of Normalness of the Pre-test Scores Distribution

<table>
<thead>
<tr>
<th>VAR00001</th>
<th>PET</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>40</td>
</tr>
<tr>
<td>Normal Parameters,a,b</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td>Absolute</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>2.139</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Test distribution is Normal
b. Calculated from data
As demonstrated in Table 4, the scores are normally distributed, $P=0.10 > 0.05$. Thus, the researcher administered an Independent-Samples T-test, the results of which are presented in Tables 5 and 6.

**Table 5**
*Group Statistics of the Pre-test Scores*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>PET</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>20</td>
<td>15.6500</td>
<td>1.14593</td>
<td>.25624</td>
</tr>
<tr>
<td>Experimental</td>
<td>20</td>
<td>16.3000</td>
<td>1.17429</td>
<td>.26258</td>
</tr>
</tbody>
</table>

**Table 6**
*Independent Samples T-test of the Pre-test Scores*

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
<td>df</td>
</tr>
<tr>
<td>PET</td>
<td>Equal variances assumed</td>
<td></td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-954</td>
<td></td>
</tr>
</tbody>
</table>

As regards the listening pre-test, both the control and the experimental groups performed very similarly in the test ($P=0.05$; Sig. = 0.34) and the homogeneity of two groups was indicated. As Table 6 shows, there was no significant difference between the groups regarding the two group’s listening skill before the treatment, $p=.66 > 0.05$.

3. The Post-test (Listening)

A post-test, which comprised the listening part of a standardized PET test with 25 items and a ceiling score of 25, was also administered by the researcher to examine the effect of the treatment on the learners’ progress in learning the linguistic structure, vocabulary, sound patterns and prosody of the foreign language. To analyze the results obtained from the post-test and to check whether digital stories had any positive effect on learners’ listening comprehension, the researcher used one-way ANCOVA analysis as shown in Tables 7 and 8.
As illustrated in Table 8, the results of the one way ANCOVA show that there was a significant difference between the adjusted means of the two groups on the posttest, $F(1, 37)=513.882$, $p=0.00$, Partial Eta Squared $= 0.96$. This means that the use of digital stories has improved the experimental group’s listening comprehension up to 96 percent. There is also a strong relationship between the language learners’ listening comprehension scores and the presentation of digital stories before and after the research intervention, implying that digital stories have increased language learners' scores up to 0.87 in comparison to their scores before the treatment, $F(1,37)= 255.670$, $p= 0.00$, Partial Eta Squared $= 0.87$. In this way, the null hypothesis stated in the study that ‘using digital stories has no significant effect on EFL learners’ listening comprehension’ was rejected.

**Discussion**

The results of the current study showed that using digital stories could enhance pre-intermediate EFL learners' listening comprehension. A number of studies (e.g., Gunduz, 2006; Verdugo, 2007) have investigated the effect of using multimedia technology on language learning, especially in EFL classes. The results of these studies can be compared with the results of the
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present research. Most of these studies have supported the positive effect of multimedia technology on different aspects of foreign language learning.

The findings of the present study are also in line with the findings of the research conducted by Verdugo (2007), who investigated the effect of internet-based stories on foreign language learning and discovered that children who were actively engaged in learning through internet-based stories could make remarkable progress in learning. Verdugo argued that these stories made the development of listening ability more effective and entertaining.

The findings of the present study are also in line with the findings of the research conducted by Al-Hammadi (2011), who did a research based on the effectiveness of using multimedia in developing listening skills and found that multimedia software could be a useful English language tool that could raise students' motivation by increasing their confidence, encouraging them and broadening their listening and oral skills. In addition, multimedia could be seen as a great treasure for teachers and students because it could exploit the authentic and contextual language situations and prepare the learners for further practice. Barani (2011) has also found that computer-assisted language learning (CALL) improved listening skills of Iranian EFL learners. The results of his study are in agreement with the present research, both indicating that there is a significant difference between CALL users and non-users in favour of the experimental group.

The outcome of the present study provided evidence for the usefulness of incorporating digital stories into curriculum. The learners in the experimental group improved their listening comprehension skills and outperformed the control group. Several reasons could help us explain these positive results. It could be argued that the pedagogical practice of digital stories promoted concentration and focused learners' attention on the oral input received. Moreover, using authentic multimedia material in foreign language leaning classes is generally considered to have a positive effect on listening comprehension. Multimedia, with the unique feature of providing audio-visual aids and authentic material would help develop a learning environment with the content rich contexts and a motivating atmosphere.
The results of this study also suggest that the combination of text, sounds and images represents a rich and stimulating environment that provides learners with many possibilities to comprehend and access authentic target language. The information presented simultaneously through multi-channels (audio, video and graphics) accounts for the efficacy in producing learning as compared to the same information in either channel alone. Thus, the use of rich contexts with visual, graphic, and oral/aural cues is strongly recommended in foreign language learning classes.

In sum, the research into the impact of using digital stories on language learning has revealed the usefulness of these stories in improving language learners' listening comprehension. Thus, incorporating them into language syllabi seems necessary for developing Iranian EFL learners' listening comprehension.

References


Biodata

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