

USING DIGITAL STORIES TO IMPROVE LISTENING COMPREHENSION WITH SPANISH YOUNG LEARNERS OF ENGLISH

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ABSTRACT

This paper examines the effects that digital stories may 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 launched 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 (henceforth, EFL). Findings indicate that the experimental group outperformed the control group in the final test administered. These results raise interesting issues related to the use of technology in the context of foreign language learning. Future research which includes other age groups and digital materials and which explores other linguistic areas could further substantiate the link between Information and Communication Technology (ICT) rich environment and improved language learning.

INTRODUCTION

It is well known that listening comprehension plays a key role in foreign language teaching, especially with young learners (Anderson & Lynch, 1988; Brewster, 1994; Brown, 1986, 1989; Grabelatos, 1995; Phillips, 1993; Rost, 1990; Shorrocks, 1994). 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 (Van Scoter, Ellis & Railsback, 2001; Wright & Shade, 1994). This paper reports on the results of an ongoing research project¹ that explores the ways Internet based technology, and more specifically digital stories, may promote foreign language learning by Spanish young learners of English. Tales and stories are effective listening materials for children to develop listening comprehension and literacy both in their first and foreign language (Dickinson, 2001; Elley, 1989; Isbell, 2002; Penno, Wilkinson & Moore, 2002; Raines & Isbell, 1994; Richards & Anderson, 2003; Zevenbergenn & Whitehurst, 2003).

At an early stage of language acquisition, stories can offer a valuable way of contextualizing and introducing new language, making it meaningful and memorable (Wasik & Bond, 2001; Whitehurst & Lonigan, 1998; Wright, 2000). They 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 (Glazer & Burke, 1994; Jennings, 1991; Koisawalia, 2005; Mallan, 1991). This verbal information is commonly complemented with non-verbal information in the form of large pictures, which helps children reconstruct the storyline (Kellerman, 1992; Meyer, 1990; Mueller, 1980; Neu, 1990).

During the last few years, with increasingly more sophisticated multimedia technology, there is renewed interest in the complementary relationship of visual and auditory channels in listening comprehension (Brett, 1995; Felix, 1995; Hoven, 1999). 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 (Brett, 1995; Fidelman, 1997; Gassin, 1992; Hurley, 1992). It is believed in this study that digital stories, if appropriately selected, can prove to be very useful in developing children's listening skills. They tend to be visual, interactive and reiterative. Usually, learners have to listen to and understand a simple order in order to proceed with the story by clicking on parts of the screen or the picture. The interactivity of Internet-based stories, we assume, may facilitate learning since children are actively involved in decoding and understanding the story (Donato, 1994). Students are allowed to proceed at their own pace which also affords a high level of individual control. The reiterative nature of the kind of stories used here could also help children progressively learn the foreign language. Finally, gains in listening skills and understanding seem to bring benefits to improve children's reading comprehension (Biemiller, 2003; Sticht & James, 1984; Sticht 2003).

In despite of all these potential benefits, however, there is insufficient research on how Internet-based technology contributes to improve children's linguistic comprehension (see Haddad & Jurich, 2002 for discussion). Most of the research on the use of computer-based technology as an instructional tool for foreign language learning has concentrated on teenagers and adults (e.g., Salaberry, 2001; Zhao, 1999). As regards primary school settings, the majority of studies report on the positive developmental and motivational effects that access to technology may have on children's foreign language learning (Clements, 1994; Clements, Nastasi & Swaminathan, 1993). Only a few studies suggest that the use of computer-based technologies in the classroom is correlated to positive academic outcomes, including higher test scores (Melmed, 1995; Schacer, 1999).

One of the reasons for this situation may be that computer-based technology in the primary classroom is under utilized (Cuban, 2001). And this reality is most evident in the modern foreign language classroom. Many English language teachers might be attracted by the resources the Internet can bring into the classroom but are often overwhelmed by a large quantity of sites and materials that often exceed the linguistic level and the technological abilities of their students. Deciding how to use and integrate those materials within a more traditional methodology demands an extra effort many full-time teachers cannot afford. In this sense, and given the increasing demands for educators to include technology into the curriculum, practical guidelines are being published to help teachers with this task (Dudeney, 2000; Warschauer, Shetzer & Meloni, 2000). Unfortunately, real adaptation of these resource books into the classroom, we believe, has not taken place yet. Many professionals feel uncertain on how to take advantage of the Web to bring that part of the world into the language classroom, especially when working with young learners. All of this suggests the need of conducting further research on the use of Internet-based content and methodology in language learning settings. Only with sufficient objective data and results will we be able to assess the effects that computer-mediated instruction actually exerts on language acquisition processes.

RESEARCH DESIGN AND METHODS

This study was designed to examine the effects that digital stories have in improving the understanding of spoken English by six-year-old Spanish young learners. A quasi-experimental analysis was carried out at six different schools of Primary Education in Madrid (Spain) during 22 weeks in the second semester of the academic year 2005 (January to June). All schools are located in the suburban Northern area of Madrid and share similar social and cultural characteristics with very homogeneous groups of Spanish speaking learners (information available at: <http://www.educa.madrid.org>).

Working with state schools constrained some of the decisions taken in the design of the present study. For example, as regards the timing of the study, all students participating in the research project could only receive two EFL sessions of 45 minutes a week, as established by the Spanish General Law of Education (LOCE, available in Spanish at: <http://sid.usal.es/idocs/F3/LYN6125/3-6125.pdf>). Regarding group composition, learners could not be assigned at random to either the control or the experimental group, since groups are usually arranged by the school authorities at the beginning of each academic year and

cannot be altered. Hence, in each school two natural groups were selected, a control group and an experimental one. Both groups had the same EFL teacher, so a total of 6 EFL teachers participated in the project. In each school it was the teacher who decided which group would be the experimental and control one. The average number of students per class was 20 (ranging from 16 to 25 children per class).

As far as the kind of instruction students received during the project, the control group received English language lessons based on teacher instruction and the exploitation of an EFL textbook specifically targeted at Spanish learners (*Zoom 1*, by Richmond Publishing-Santillana, 2003) during two sessions per week. No use of Internet-based technology was contemplated for this group. The experimental group also received EFL lessons during two weekly sessions. However, while during one session learners received the same kind of instruction as the control group, based on teacher instruction and the exploitation of the text book, the other session was devoted to work on a selected number of digital stories, as explained below.

As mentioned in the introduction, the use of digital stories, we believe, could show greater improvement in children's progressive understanding of the linguistic structure, vocabulary, sound patterns and prosody of the foreign language as compared to that obtained by children receiving language instruction without the use of Internet-based technology. Therefore, we aimed to verify whether there is a significant difference between the mean for the control and experimental groups in their listening comprehension score.

In order to validate this hypothesis on the effect and effectiveness that ICT may have on children's listening comprehension and language learning process, several statistical analyses were carried out with the assistance of SPSS for Social Sciences. The scores in each group were examined to check that they were normally distributed. The homogeneity ($p > 0.05$) and heterogeneity ($p < 0.05$) of variances were decided on the results obtained by Levene test. Then, a T-test for independent samples was applied in order to compare the performance of the two groups of subjects on the posttest measures of listening comprehension and linguistic skills.

Participants

In total, 220 children participated in the research project. The decision to select six year old EFL students arises from the fact that this is the age when Spanish children officially start their EFL instruction at schools. Even though we were well aware of the difficulties of initiating research with very young learners, we were interested in investigating the effects that the access to digital content might exert on these children from the very start of their EFL learning process. Besides, with some exceptions (e.g. Lewis, 2004), there are no didactic proposals of how students at this age could do foreign language work using Internet-based technology.

As regards the selected Primary schools, some of them have previous experience as participants in several national and international research and European *Comenius* teaching projects in recent years. Concerning the type of instruction they offer, it is based on learner-centered pedagogies for foreign language in which teachers are seen as learning facilitators. The six schools of Primary education where the research project was developed are endorsed by the *Kindersite* Project (www.kindersite.org), an international project-based Internet site, hosted in the UK, with the global objective of providing free access to primary schools around the world to good graded educational and entertainment content as an aid to an early introduction to EFL, and in a safe and secure environment. *Kindersite* offers hundreds of direct links to graded content in the form of games, songs and stories that teachers and children can use in the primary English classroom in a distance-learning scenario.

Materials, Contents and Tasks

Creating an Internet-based syllabus

In order to facilitate the integration of Internet-based instruction in daily teaching practice, the research leaders designed and provided an Internet-based syllabus which was meant to support and develop the common objectives, contents and skills worked on at this age in any primary school in Spain, according with the present Spanish Law of Education. The activities included in the syllabus, reflected the same typology as those presented in the textbook used.

Sixty-nine digital stories from [Kindersite](#) were selected according to their degree of difficulty (adequate for 6 year old Spanish children) and were classified according to two main parameters: topics or major themes arranged in semantic groups and notions and concepts such as actions, abilities, etc. For this classification we took into account and adapted to our context the guiding principles used in the *Cambridge Young Learners English Tests and Handbook* (2003). Each digital story was characterized according to the language functions presented (i.e., narrating, following instructions, requesting, etc.), the main grammatical, lexical or phonetic points worked on, the language skills (e.g., listening) demanded and also the required interface abilities (listen, watch and react by clicking on arrows; click on the arrows to follow the story; click on parts of picture; watch and listen; etc.). The list of topics, notions and concepts covered by the selected digital stories appear in [Table 1](#).

Table 1. Topics, Notions and Concepts Covered by the Selected Digital Stories.

List of topics		List of notions and concepts
Animals	Illness	Abilities
Body	Mathematics	Actions
Family	Places	Appearance
Fairy tales	Safety	Colors
Food	Seasons	Feelings
Friends	Sports	Numbers
Games	Time	Size
Home & House	Weather	Graphs & Phonics

The analysis and classification of the digital stories was carried out with the help of an Access Database and was later edited and printed for the teachers participating in the project ([Figure 1](#)).

The screenshot shows a Microsoft Access database form titled "STORIES". The form contains the following fields and values:

- ID:** [Empty]
- Site/Product:** BBC
- Genre/Site:** Fimbles
- Name:** Sunil the strippy Tiger
- Web:** <http://www.bbc.co.uk/cbeebies/fimbles/co>
- HTML Flash:** F
- Age:** 3 - 8
- Sex:** A
- Educational Value:** 2
- Fun Value:** 3,5
- Playability:** 4
- Sound:** M T Fx
- Movement:** 4
- Description:** Illustrated interactive Story
- Print to play:** [Empty]
- Number:** 39
- Topic:** Animals; the weather
- Adequate:** Y
- Notion/concept:** Appearance (spots and)
- Commentaries:** [Empty]
- Function:** Narrating
- Grammar:** Past tenses
- Language Skills:** Listening and reading
- Required Interface Abilities:** Listen, watch and react by clicking on objects.

Figure 1. Project digital stories database display.

Therefore, educators participating in this study connected to www.kindersite.org during their lessons, selected the specific digital stories according to the common objectives, contents and skills worked on at this age in any primary school in Spain and placed them into a password protected personal page (*My Page*, within the Kindersite domain). Children, then, could work with the Internet as part of the lesson. For this pilot study, only 12 out of the 69 digital stories included in the Internet-based syllabus were used. Children responded to the story and could proceed at their own pace. The narrator, for example, asked the child to 'click on the tree to see what happens next.' By collaborating in the 'narration' of the story, learners became more autonomous in their learning, enabling teachers to monitor children individually. Therefore, learners took an active role in the listening comprehension of the story. In most of the stories, the oral input was supported by written text. Even though children were not expected to read at this stage, in the set of selected stories there is a clear link between phonics and graphics which creates a framework for literacy development (Sticht, 2003; Sticht & James, 1984).

Pre- and post computer work was agreed on and designed by both researchers and teachers. This pedagogical practice facilitated better integration of the digital listening activities into the teaching practice. Pre-computer activities presented to the whole group were intended to activate prior knowledge about the topics and notions covered in the story. The aim of 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. Our aim was to make children practice lexis, functions and the pronunciation of simple formulaic phrases that they have been previously exposed to during the listening activities, such as *Can you find the apple? Is it a butterfly?*

Some examples of digital tasks and activities

To illustrate the type of digital activities utilized in the Internet-based syllabus, [Figures 2](#) and [3](#) present the analysis and classification of two stories ("The adventures of Debbie-Duck" and "The Butterfly Trail") in terms of the topics and notions covered, the language functions presented, the main grammatical and lexical elements worked on, and also the required interface abilities.

The Adventures of Debbie-Duck (from BBC) http://www.bbc.co.uk/cbeebies/tweenies/storytime/stories/debbieduck/					
Topics	Notions/Concepts	Functions	Grammar	Language Skills	Required Interface Abilities
Animals; Places; Friends;	Actions; Feelings;	Following instructions; narrating	Present simple & present perfect	Listening	Listen, watch and react by clicking on objects

Figure 2. Analysis and classification of the digital story "The adventures of Debbie-Duck".

The Butterfly Trail (from BBC) http://www.bbc.co.uk/schools/laac/story/butterfly/sound.shtml					
Topics	Notions/Concepts	Functions	Grammar	Language Skills	Required Interface Abilities
Places (countryside); Animals;	Colors; Actions;	Following instructions; narrating	Past tenses	Listening	Listen, watch and react by clicking on objects

Figure 3. Analysis and classification of the digital story "The Butterfly Trail".

The selected stories followed a simple narrative line the young learners needed to understand to continue with the story. The multi-sensory character of these digital materials helped to create an immediate context for the lexis and actions presented in the narration. Children were requested to perform two different types of tasks. First, they were asked to follow the narrator's instructions, reacting to commands such as *Roll the mouse on the screen .../ Click on the screen, object or character to ...* And then, they were requested to respond to simple questions by selecting the right object after listening to simple questions such as *Can you find + an object?/ Is it really + object? / What do you think it is?* The oral input was reinforced by the visual cues that were highlighted as the child rolled the mouse over the screen, which could facilitate scaffolded learning.

Working with the Textbook: Contents and Activities

The textbook used, *Zoom 1*, is specifically designed by EFL Spanish authors and targeted at young learners in the first Primary years in the Spanish educational system (from 6 to 8 years old). This textbook's main goal is to develop oral communicative competence through listening and oral activities such as songs, games and short stories based exclusively on visual input. The basic contents of the textbook are organized into three main areas: topics, notions/concepts and functions. This syllabus is illustrated in [Table 2](#).

Table 2. Summary of *Zoom 1*'s Table of Contents (pp. 2-3).

Unit	Aim	Vocabulary	Language
<i>Hello</i>	Classroom instructions	People: girl, boy, teacher. Actions: stand up, sit down, listen, look and stop.	<i>Hello!</i> <i>I'm...</i>
<i>My class</i>	Naming objects	Numbers: one, two Objects: pencil, book, table, chair. Colors: red, blue.	<i>A pencil, please.</i> <i>Thank you.</i> <i>Look! A book!</i>
<i>Me</i>	Describing objects	Face: eyes, ears, mouth and nose. Numbers: three and four. Shapes: triangle and star.	<i>It's green!</i> <i>It's a nose!</i> <i>Look! Three stars!</i>
<i>You and me</i>	Revision		Poem: <i>You and me!</i>
<i>My family</i>	Expressing feelings	Family: mother, father, sister. Emotions: Happy and sad. Colors: White, black. Numbers: five and six.	<i>What's your name?</i> <i>How are you?</i> <i>Look! Five red stars!</i>
<i>My pets</i>	Talking about pets	Pets: fish, cat, bird and dog. Numbers: seven and eight. Actions: fly, swim, run.	<i>It's a brown dog.</i> <i>It's big.</i> <i>A dog can run.</i>
<i>My house</i>	Revision		Poem: <i>My family!</i>
<i>Day and Night</i>	Describing actions	Nature: day, night, sun and moon. Action: sleep and play. Emotions: Tired Numbers: nine and ten.	<i>Your turn!</i> <i>Let's play!</i> <i>Two birds!</i>
<i>A picnic</i>	Talking about preferences	Food: Apples, hamburgers, salad. Drinks: milk and lemonade. Clothes: shorts, skirt and hat.	<i>I like apples.</i> <i>A hamburger, please.</i> <i>A blue hat.</i>
<i>Let's play</i>	Revision		Poem: <i>I'm seven today!</i>

The main listening activities found in the textbook include the following tasks: *listen, point and say, look, listen and act, listen and circle, listen and color, listen and draw*. In other words, as mentioned above, these activities also follow the sequence: *listen + 'do something' or 'carry out a task'*. These tasks were mainly presented to the class as a whole group where students individually and, again, as a whole group respond to the oral input received.

Data and Method of Analysis

Several research instruments were designed to gather relevant data. As quantitative research tools, two pre and post tests were created and administered in a printed version, since they guaranteed equity between the groups. Once more, in the design of these tests, the criteria established in *Cambridge Young Learners English Tests and Handbook* (2003) were considered, adapting their principles to six-year-old learners of English. Teachers' weekly diaries and initial and final questionnaires were also devised, together with classroom observation in all groups, as qualitative instruments. In this paper we specifically report on the results of the pre and post tests.

The two tests elaborated to trace learners' progress in their listening comprehension skills had the following characteristics:

1. **A pre-test**, designed to gather initial data on learners' knowledge previous to any research intervention and to check that all participants had similar levels of English. The initial pretest was divided into two sections:

a. *Part I. Listening*. In this section seven items were presented to test children's knowledge about animals and colors. Children had to listen and circle the right option (see [Figure 4](#)).

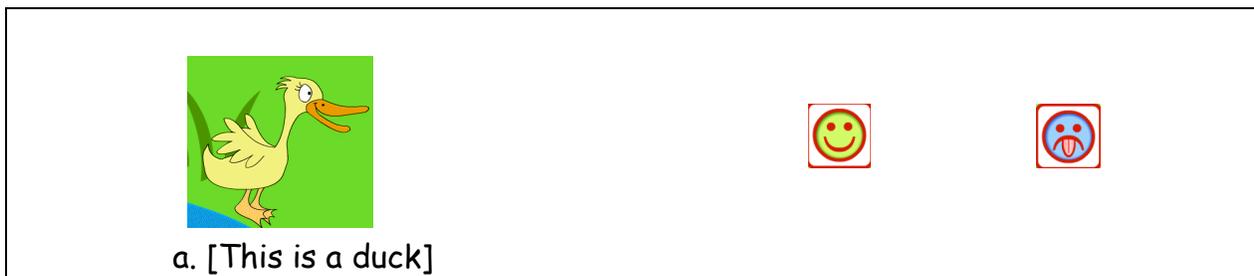


Figure 4. Example from initial test, part I.

b. *Part II. Listening*. In this section seven items were presented to test children's knowledge about numbers and animals. Children had to listen and circle the right option (see [Figure 5](#)).

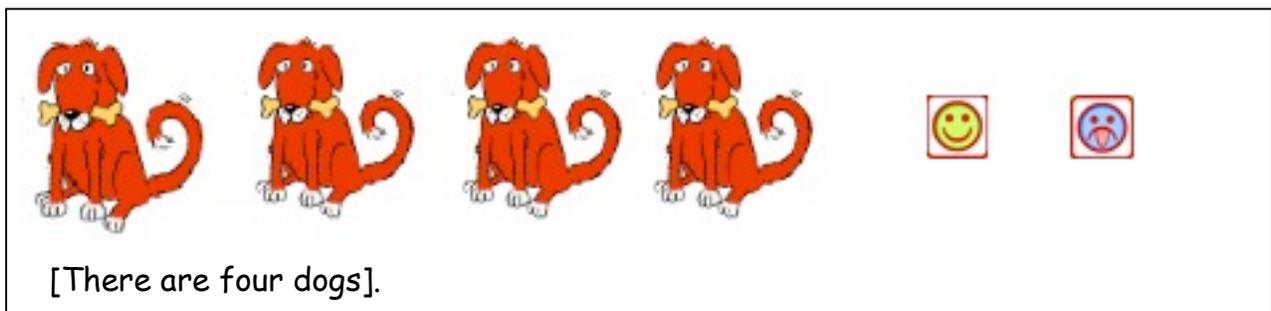


Figure 5. Example from initial test, part II.

2. A **post-test** was also designed to test children's progressive understanding of the linguistic structure, vocabulary, sound patterns and prosody of the foreign language. The post-test is divided into three sections. The first two parts, with seven items each, pose very similar questions to those presented in the pre-test, but are cognitively more complex and concern some new vocabulary (new animals, new colors, new numbers) A third section (eight items) was added to test whether the students were also able to understand YES/NO general questions in English, built up on some new vocabulary of actions, colors, animals, size, descriptive adjectives, etc., taught during the semester to both groups (Figure 6).






[6. Can you see trees and flowers in the forest?]






[7. The girl with a blue dress is reading a book]

Figure 6. Examples from final test, part III.

Both tests were evaluated by the research team using the following marks: 1: Correct and 0: Incorrect.

RESULTS AND DISCUSSION

As mentioned previously, 220 children and 6 EFL teachers participated in the research study: 112 students in the control groups and 108 in the experimental ones. Data obtained through classroom observation and teachers' diaries provide very positive feedback to the implementation of the project (Ramírez & Alonso, in preparation).

During the days in which the tests were administered, 9 students in the control groups and 3 learners in the experimental ones were absent. The total sample then was reduced to 103 students in the control groups and 105 in the experimental ones. To analyze quantitative data, a T-test for independent samples was applied in order to compare the listening comprehension of the two groups of subjects. Results obtained by Levene test indicate that there was homogeneity of variances between the control and the experimental groups ($F = 1.124$; $p = 0.290$) at onset. Thus, there were no significant differences among the participating groups at the start of the study.

As regards the initial test, both control and experimental groups performed very similarly in Part I and Part II. The mean score obtained by the experimental groups in both parts of the initial test (11.09) was lower than the mean of the control groups (11.57), as Table 3 illustrates:

Table 3. Mean Score Obtained by the Experimental and Control Groups in the Initial Test.

Initial Test	Groups	N	Mean	SD
Part I	Control	103	5.51	1.392
	Experimental	105	5.48	1.448
Part II	Control	103	6.06	1.539
	Experimental	105	5.61	1.678
Total (Part I and Part II)	Control	103	11.57	2.432
	Experimental	105	11.09	2.704

However, these differences were not statistically significant, as the results from the T-test ($p \geq 0.05$) show in Table 4.

Table 4. T-test for Independent Samples Results in the Initial Test.

Initial Test	<i>t</i>	<i>p</i>	Effect-size - <i>Cohen's d</i>
Part I	0.195	0.846	0.02
Part II	2.008	0.046	0.2
Total (Part I and Part II)	1.365	0.174	0.19

Effect sizes, as the values of *Cohen's d* indicate, are small. The distribution of scores for the experimental and the control group largely overlaps (7.7% percent of non-overlap) (Cohen, 1988).

We concluded that both groups departed from a similar previous level of English. Students at this level were able to understand simple statements and basic vocabulary about numbers, colors and animals. To assess the initial test reliability, the Cronbach alpha coefficient was calculated. The value obtained was considered satisfactory for the test internal consistency ($\alpha = 0.814$). Data obtained in the analysis of the final tests, however, show that the control groups slightly decreased the mean if compared with the one obtained in the initial test (11.22 vs. 11.57), whereas the experimental ones increased the test mean (11.09 vs. 12.24). This tendency applied to both Part I and II, as Table 5 shows.

Table 5. Mean Score Obtained by the Experimental and Control Groups in the Final Test.

Final test	Groups	N	Mean	SD
Part I	Control	103	5.22	1.481
	Experimental	105	5.88	1.199
Part II	Control	103	6.00	1.534
	Experimental	105	6.36	0.761
Total (Part I and Part II)	Control	103	11.22	2.364
	Experimental	105	12.24	1.667

In this case, the differences between the two groups were statistically significant ($p < 0.05$).

The effect sizes, as the values of *Cohen's d* indicate, were medium to large (0.6). That is, there was a non-overlap of 38.2% in the distribution of scores for the experimental and the control group (Cohen, 1988). Table 6 shows the results obtained in the T-test for independent samples in the final test.

Table 6. T-Test for Independent Samples Results in Parts 1 and 2 of the Final Test.

Final Test	<i>t</i>	<i>p</i>	Effect-size - <i>Cohen's d</i>
Part I	3.490	0.001	0.5
Part II	2.149	0.033	0.4
Total (Part I and II)	3.572	0.000	0.6

Interestingly, this tendency also applies to Part III in the Final Test which was intended to assess whether the students were also able to understand YES/NO general questions in English and had learned new vocabulary of actions, colors, animals, size, descriptive adjectives, etc. Table 7 shows that the experimental groups again outperformed the control groups.

Table 7. Mean Score Obtained by the Experimental and Control Groups in Part 3 of the Final Test.

Final test	Groups	N	Mean	SD
Part III	Control	103	5.16	1.523
	Experimental	105	6.25	0.852

These differences were statistically significant, as the results from the T-test for independent samples indicate. The effect size, as the value of *Cohen's d* shows, was large (1.008). In other words, there was a non-overlap 58.9% in the distribution of scores for the experimental and the control group (Cohen, 1988), Table 8.

Table 8. T-Test for Independent Samples Results in Part 3 of the Final Test.

Final Test	<i>t</i>	<i>p</i>	Effect-size - <i>Cohen's d</i>
Part III	6.336	0	1.008

To check the final test reliability, the Cronbach alpha coefficient was computed. A value of 0.779 was considered satisfactory for the test internal consistency. Finally, pre and post-test correlations were also calculated to assess the stability of the assessment results over time. The values obtained from Pearson (0.301, $p=0$) and Spearman (0.340, $p=0$) measures reveal that the observed frequencies for pre and post tests are related. Hence, the statistical analyses applied indicate that test internal consistency reliabilities were generally higher than test-retest reliabilities.

The outcome of the present study, thus, has validated the research hypothesis by demonstrating that there were significant differences between the two groups. 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 children's attention on the oral input received. The ability for each child to play the story several times also guaranteed a longer time of exposure to the target language. In addition, classroom observation reports, interviews with the teachers and the study of their weekly diaries provide positive feedback on learners' collaboration in the performance of the tasks. Some interface difficulties, however, were expressed. Some children had problems using the web autonomously during the very first sessions of the project, and some problems with access to the Internet were reported. Fortunately, these initial shortcomings were soon overcome with the support of their teachers and classmates. Those technical hitches seem to remain inevitable nowadays.

Nevertheless, the results obtained suggest that the differences between the two groups are significant but could be regarded as moderate. There may be several explanations for this. One of them might refer to the

short time of exposure to the target language that children often receive at school. Spanish General Law of Education establishes a mean range of two periods of 45 or 50 minutes a week for EFL lessons. The relatively large ratio of pupils per classroom, ranging from about 18 to 25, may also represent a disadvantage. Further studies will attempt to examine whether a longer time of exposure to the digital materials further increases the outcome obtained. Follow up work with additional measures of listening comprehension will also be used.

Another limitation refers to the fact that most of the available web materials on the Internet have not been created by language and pedagogy experts. The story-telling pace, for instance, is sometimes too fast even for native speakers. This, obviously, entails further difficulty for non-native learners. This restriction was carefully considered when selecting digital stories for this project. Therefore, objective criteria such as the simplicity of grammar, vocabulary and narrative structure were taken into account to make the story predictable and facilitate comprehension.

CONCLUSION

The outcome of this study substantiates our initial belief regarding the fact that experimental group learners were able to comprehend basic linguistic structures and vocabulary and provide a correct answer. In fact, even though the experimental group learners started from a slightly lower level of English, they improved their listening comprehension skills and outperformed the control group. However, in order to obtain better results, we believe that there is an urgent need to develop new materials and resources adapted to both native and non-native young learners. If the existent materials are to be used in the foreign language classroom, and just to mention some of the paths to explore, they need to include higher quality sound and slower story-telling pace. Graded pedagogical tasks responding to the learners' age and developmental stage would also be necessary. In this respect, as Gabrielatos (1998) argues, "texts for native speakers of the same age may be too demanding, but simplified pedagogical texts should at least try to simulate them" (p. 56). Finally, suitable interface displays for children are needed, both from a cognitive and an ergonomic perspective, and, perhaps more importantly, to ensure a safe and secure Internet environment for children.

In sum, we feel it is necessary to continue analyzing the existing Internet-based content in order to design a coherent syllabus which may respond to young learners' needs. Lesson plans and didactic guidelines based on digital content would be very useful for full-time schoolteachers and instructors. Multimedia content can be integrated with the dynamics of conventional methodologies and instructional practices. As Lewis (2004) suggests, there hardly exist any didactic proposals of how young learners could do foreign language work using Internet-based technology. We believe the present pilot study has initiated this trend, but future research, both quantitative and qualitative, needs to be conducted in several important areas. More longitudinal studies are needed in order to determine the long lasting effects and effectiveness of multimedia and digital content in the acquisition and learning of languages. We also need to explore whether the development in listening is also transferred to literacy and to speaking. In fact, most of the stories include both oral input and written text. Even though young learners were not expected to read at this stage, they, as their teachers reported, had started to perceive the differences between the sound and spelling of some of the lexis in the stories. It is, hence, interesting for Spanish learners of English to be exposed to the idiosyncratic links between graphics and phonics in English, so different from the straightforward sound-spelling correlation in their L1.

It would be necessary, therefore, to investigate whether there is a co-development of listening and reading proficiency as suggested by several scholars (Sticht, 2003; Sticht & James, 1984). Improving listening comprehension might facilitate and improve reading comprehension as well (Biemiller, 2003). Further research needs to be conducted on the transferability of formulaic speech learnt in the context of a story to young learners' classroom discourse and, perhaps, to other settings. Storytelling is essentially a social experience. Therefore, it would be valuable to explore the ways digital storytelling can come to support

oral competence integrating the learner-computer interaction with the teacher-learners retelling and story-based tasks. We hope future research continues exploring the ways that Information and Communication technologies, both on and offline, can be brought into the scenario of language teaching and acquisition.

NOTES

1. This research forms part of a wider research project (*Learning English with the Internet at school: A longitudinal research study in Madrid*) aimed at investigating whether the combination of both teacher-based and Internet-based instruction causes a substantively pedagogical improvement on six-year-old children's linguistic outcome in EFL, as compared to solely teacher-based instruction (UAM financed research project no. 1007030002/36).

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