

Improving Listening Comprehension among Malay Preschool Children Using Digital Stories

Dr. Mohamad Jafre Zainol Abidin
Majid Pour-Mohammadi (PhD Candidate)*
Thongma Souriyavongsa (PhD Candidate)
Chin Da d/o Bun Tiang (MA)
Nancy Ong Liew Kim (MA)

School of Educational Studies
University Sains Malaysia
Penang, Malaysia

Abstract

This study investigated the effects of digital stories on the understanding of spoken English by a group of 6-year-old Malay preschool children. To realise this aim, a quasi-experimental research study was carried out in a suburban school in Penang, Malaysia. A pretest and a posttest were utilised to find out whether internet-based technology could improve listening comprehension in English as a Second Language. Results signified that the experimental group outshone the control group in the final test administered. The findings broached interesting subjects related to the use of technology in the context of second language learning. It is hoped that future research continues exploring the ways of how Information and Communication Technologies can be taken seriously in the teaching of English to the young children in Malaysia.

Keywords: digital story, preschool children, Internet-based technology, listening comprehension

1. Introduction

The ability to read and comprehend is important not only for lifelong learning, but also for adequate functioning in society. Despite enormous efforts from researchers, educators, and policymakers to promote reading for all children, many children fail to reach functional levels of literacy (Paris & Stahl, 2005). Thus, it is essential to understand the nature of young children's early developing language comprehension skills, how they differ from other language skills, and how one can stimulate the development of these skills so that children will be better prepared to excel in reading comprehension when they are formally learning how to read in school. Listening comprehension plays a main role in second language teaching, especially with young learners (Grabielatos, 1995). Websites for children can offer a range of opportunities to develop foreign language listening and proficiency in a playful and enjoyable context if appropriately selected and organized (Van Scoter, Ellis & Railsback, 2001). Tales and stories are effective and useful listening materials for children to develop listening comprehension and literacy both in their first and second language (Zevenbergenn & Whitehurst, 2003). This study seeks to explore the ways Internet based technology, more especially digital stories, may promote second language learning by Malay young learners of English.

1.1 Statement of Problem

There is not much research on how Internet-based technology contributes to improve children's listening comprehension (Haddad & Jurich, 2002). Nearly all of the research on the use of computer-based technology as an instructional tool for second language learning has concentrated on teenagers and adults (Salaberry, 2001; Zhao, 1999). As for primary school settings, the majority of studies focus on the positive developmental and motivational effects that access to technology may have on children's second language learning (Clements, 1994). Only a small number of 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). Based on the above findings, the study on the Internet-based technology and listening comprehension among preschool children is still scarce.

1.2 Research Objectives

This study attempted to examine the effects that digital stories have in improving the understanding of spoken English by six-year-old Malay pre-school children.

* Corresponding author

Hence, focusing on the usage of digital stories in teaching listening comprehension, the study considers two objectives:

1. To find out if digital stories improve the children's listening comprehension skills.
2. To verify whether there is a significant difference between the mean scores of the experimental and control groups in their listening comprehension tests.

1.3 Research Questions and Hypotheses

Thus, this study seeks to research the following questions:

1. Do the digital stories improve the children's listening comprehension skills?
2. Is there a statistically significant difference between the mean scores of the experimental and control groups in their listening comprehension tests?

Accordingly, from the above questions, the following null hypothesis can be derived:

1. The digital stories would improve the children's listening comprehension skills.
2. There is a significant difference between the mean scores of the experimental and control groups in their listening comprehension tests.

2. Literature Review

It is believed that digital stories can prove to be very useful in developing children's listening skills if appropriately selected. They tend to be visual, interactive and reiterative. Generally, 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 may assist learning since children are actively involved in decoding and understanding the story (Donato, 1994). Students are allowed to progress at their own pace which also affords a high level of individual control. Besides, the reiterative nature of such stories could also help children progressively learn the second language. Lastly, gains in listening skill and understanding seem to bring benefits to improve children's reading comprehension (Biemiller, 2003; Sticht, 2003).

The reason for this situation may be that computer-based technology in the primary classroom is underutilized (Cuban, 2001). This reality is most obvious in the language classroom in Malaysia. Many English language educators might be attracted by the resources because 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 incorporate those materials within a more traditional methodology demands an extra effort many full-time teachers cannot afford. In this matter, practical guidelines are being published to help teachers with this task due to the increasing demands for educators to include technology into the curriculum (Dudeney, 2000; Warschauer, Shetzer & Meloni, 2000).

2.1 English Language Curriculum for the Malaysian Preschools

The English Language Curriculum by Ministry of Education of Malaysia (2001) aims at enabling preschool children to actively communicate with others in their immediate environment and develop an enjoyment of the language through the use of stories, rhymes, poems, songs and games. Through language play, they will also imagine and recreate experiences. Vocabulary development will be aided through exposure to and use of language related to familiar experiences and things in the environment as well as simple selections from children's literature. Language development will be assisted through the use of context including objects from the real world, pictures, puppets and other props so that language experiences will be meaningful.

English will also be acquired through meaningful interactions with others. Listening and speaking will consist of verbal and non-verbal communication including the use of body language, facial expression and eye contact. Language activities will also assist the development of emergent literacy. The written language will be exposed to children through a variety of materials such as word cards, books including big books, charts, labels, signs and posters. However, it is believed that real adaptation of the Internet-based resource books into the classroom has not taken place yet, especially in Malaysia. Many pre-school teachers are not very sure on how to take advantage of the Web to bring that part of the world into the language classroom, particularly when working with young learners. Due to this, there is a need to conduct further research on the use of Internet-based content and methodology in language learning settings.

3. Methodology

3.1 Research Design

A quasi-experimental analysis was carried out at a primary school located in suburban Penang, Malaysia for 6 weeks. All participants received four 30-minute English lessons a week, as established by the Ministry of Education of Malaysia. During the four sessions per week, the control group was told the stories chosen by their teacher apart from the normal lesson based on teacher instruction and the exploitation of the workbook. No Internet-based material was given to this group. The experimental group also received English lessons during the four weekly sessions. In two of the sessions, children received the same kind of instruction as the control group, based on teacher instruction and the exploitation of the workbook. The other two sessions were devoted to work on a selected number of digital stories. In order to verify this hypothesis on the effect that Information and Communication Technologies (ICT) may have on children's listening comprehension, a number of statistical analyses were carried out using SPSS program. The scores in each group were studied to check that they were normally distributed. The homogeneity ($p > 0.05$) and heterogeneity ($p < 0.05$) of variances were decided on the results shown by the Levene test. To compare the performance of the two groups on the post-test measures of listening comprehension and linguistic skills, a T-test for independent samples was applied.

3.2 Sampling

50 children participated in this research project. They were all the pre-school children in a government-run school in Penang, Malaysia. They were of the Malay ethnic who were learning English as a Second Language (ESL). English was rarely spoken at home and most of the parents were fishermen, hotel workers or odd job labourers. The decision to select six-year old children came up from the fact that this is the age when most of Malaysian children officially start their ESL instructions at schools. Regarding group composition, children could not be assigned at random to either the control or the experimental group, since groups are predetermined by the school authorities at the beginning of each academic year and cannot be altered. Therefore, in this school two groups were selected: a control group and an experimental one. The groups had two different English language teachers, so a total of two teachers took part in the project. It was the teachers who decided which group would be either experimental or control. The number of students per class was 25.

3.3 Instrumentation

For this study, 2 digital stories in the BBC website were used. Children listened to the story and could move on at their own pace. The narrator, for example, asked the children to click on the bear' to see what happens next. By participating in the narration of the story, children became more independent in their learning, enabling teachers to monitor them individually. Thus, children played an active role in the listening comprehension of the story and teachers functioned as facilitators. In most of the stories, written text supported the oral input. Sticht (2003) asserts that children are not expected to read at this stage. However, in the set of selected stories, there was a clear link between phonics and graphics which created a framework for literacy development. A pre-test was administered to both experimental and control groups before they were exposed to the digital stories and the stories in printed version told by their teachers. After the exposures, which were approximately six-week long, they were given a post-test. A pilot test was done with a group of preschool children similar to the target groups to determine the content validity of the tests.

To assess the pre-test and post-test reliability, the Cronbach alpha coefficient was calculated. The value acquired was considered satisfactory for the test internal consistency ($\alpha = 0.846$ and 0.851). All items appeared to be worthy of retention: the greatest increase in alpha would come from deleting items 3 and 2 (in pre-test) respectively, but removal of these items would increase alpha only by 0.005 to 0.007. All items correlated with the total scale to a good degree ($r > 0.30$).

In order to assess the stability of the assessment results over time, pre and post-test correlations were also calculated. The frequencies for pre and post tests are related as shown in the values obtained from Pearson (0.552 , $p = 0$) and Spearman (0.598 , $p = 0$). Consequently, the statistical analyses applied indicated that test internal consistency reliabilities were generally higher than test-retest reliabilities.

Tables 1 and 2 present the analysis and classification of two stories ("Eeny, Meeny, Miny, Mo" and "The Three Bears") to illustrate the type of digital activities utilised in the classroom, in terms of the topics and concepts covered, the language functions presented, the main grammatical and lexical elements worked on, and the required interface abilities.

Both of these stories followed a simple narrative line the young learners needed to understand to comprehend the story.

An instant context for the lexis and actions presented in the narration were being created by the multi-sensory character of these digital materials. Children were asked to carry out 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....* Then, they were requested to respond to simple questions by selecting the right object after listening to simple questions such as: *Can you find a bowl?/ What colour is it?* The oral input was reinforced by the visual cues that were highlighted as the child rolled the mouse over the screen, which could facilitate scaffold learning. The two tests elaborated to find out children's progress in their listening comprehension skills had the following characteristics:

3.3.1 Pre-test

A pre-test was designed to collect initial data on children's knowledge previous to any research intervention and to check that all participants had similar levels of English. The pre-test was divided into two sections:

Part I. In this section five items were presented to test children's knowledge about animals and colours. Children were required to listen and circle the right option.

Part II. In this section, another five items were presented to test children's knowledge about numbers and animals. Children were required to listen and colour the right option.

3.3.2 Post-test

A post-test was also designed to test children's progressive understanding of the linguistic structure, vocabulary, sound patterns and prosody of the language. The post-test is divided into two sections. Each part poses five questions similar to those presented in the pre-test, but are cognitively more complex and concern some new vocabulary (new animals, new colours, new numbers). Both tests were evaluated by the researchers using the following marks: 1: Correct and 0: Incorrect.

4. Findings

In order to compare the listening comprehension of the two groups, a T-test for independent samples was applied. Results obtained through the Levene test showed that there was homogeneity of variances between the control and the experimental groups ($F= 0.241$; $p= 0.626$) in the beginning. Hence, there were no significant differences among the two groups at the start of the study. Regarding the pre-test, both control and experimental groups performed very similarly in Part I and Part II. The mean score acquired by the experimental group in both parts of the pre-test (3.44) was lower than the mean of the control group (3.48), as Table 3 illustrates. Table 4 shows the results from the T-test ($p \geq 0.05$). Therefore, these differences were not statistically significant.

Thus, both groups set out from a similar previous level of English. Children at this level were able to understand simple statements and basic vocabulary about numbers, colours and animals. Data obtained in the analysis of the post-test, however, showed that the control group increased the test mean by 1.60 if compared with the one obtained in the pre-test (3.48 vs. 5.08), whereas the experimental one increased the test mean sharply by 3.20 (3.44 vs. 6.64). This tendency applied to both Parts I and II, as shown in Table 5. Table 6 illustrates the results obtained in the T-test for independent samples in the post-test. The differences between the two participating groups were statistically significant ($p < 0.05$) except in Part II.

5. Conclusions and Discussions

The outcome of the present study, thus, has validated the research hypothesis by demonstrating that there were significant differences between the two groups. Participants in the experimental group improved their listening comprehension skills and outperformed those in the control group. These positive results could be because of several reasons. 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 for several times also guaranteed a longer time of exposure to the target language. However, some difficulties were found. For example, some children had problems using the web during the very first sessions of the lesson, and some problems with access to the Internet were reported. Fortunately, these initial limitations were soon overcome with the support of their teachers. Those technical problems seem to remain unavoidable nowadays. Another difficulty refers to the fact that most of the available Web materials on the Internet have not been created by language and pedagogy experts. The storytelling pace, for instance, is sometimes too fast even for native speakers. This, obviously, causes further difficulty for non-native learners, especially the Malay preschool children in this study. Therefore, the selections of digital stories for this research were being carefully chosen bearing in mind the aforementioned restriction.

The objective criteria such as the simplicity of grammar, vocabulary and narrative structure were taken into account to make the story predictable and to facilitate comprehension. Nonetheless, the results imply that the differences between the two groups were very significant. There may be several explanations for this. One of them might refer to numerous exposures to the digital stories chosen. As suggested by Verdugo and Belmonte (2007), a longer time of exposure to the digital materials would further increase the outcome obtained. This research confirmed the suggestions. The outcomes of this study reinforced that participants in the experimental group were able to comprehend basic linguistic structures and vocabulary and outperformed the control group. However, in order to obtain a better result, it is believed that existing materials and resources should be adapted into slower story-telling pace for the non-native young learners to be able to follow better. More studies, specifically longitudinal ones, are needed in order to determine the long lasting effects and effectiveness of multimedia and digital content in the acquisition and learning of languages. At the same time, it seems necessary to continue analysing the existing Internet-based content in order to design a coherent syllabus which may respond to young learners' needs.

Acknowledgement: This work was supported in part by the fellowship scheme of University Sains Malaysia.

References

- Biemiller, A. (2003). Vocabulary: Needed if more children are to read well. *Reading Psychology*, 24, 323-335.
- Clements, D. H. (1994). The uniqueness of the computer as a learning tool: Insights from research and practice. In J. L. Wright and D. D. Shade (Eds.), *Young children: Active learners in a technological age* (pp. 31-50). Washington DC: National Association for the Education Children.
- Cuban, L. (2001). *Oversold and underused: Computers in schools 1980-2000*. Cambridge, MA: Harvard University Press.
- Donato, R. (1994). Collective scaffolding in second language learning. In J. P. Lantolf and G. Appel (Eds.), *Vygotskian approaches to second language learning* (pp. 35-56). Norwood, NJ: Ablex Publishing Corporation.
- Dudeney, G. (2000). *The Internet and the language classroom: A practical guide for teachers*. New York: Cambridge University Press.
- Eeny, Meeny, Miny, Mo (from BBC). [Online] available: <http://www.bbc.co.uk/cbeebies/fimbles/stories/eenymeenyminyo/> (January 3, 2010)
- Grabielatos, C. (1995). Two birds with one stone 2: Listening skills development using testing materials. *Current Issues* 6, pp. 15-19.
- Haddad, W. D. & Jurich, S. (2002). ICT for education: Potential and potency. In W. D. Haddad and A. Draxler (Eds.), *Technologies for education: Potential, parameters and prospects* (pp. 28-40). UNESCO and Academy for Educational Development.
- Melmed, A. Ed., (1995). *The costs and effectiveness of educational technology: Proceedings of a workshop*. DRU-1205-CTI, Santa Monica: RAND Corporation.
- Ministry of Education of Malaysia (2001). *Preschool curriculum*. Kuala Lumpur: Pusat perkembangan kurikulum.
- Paris, S. & Stahl S. (2005). *Children's reading comprehension and assessment*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Salaberry, M. R. (2001). The use of technology for second language learning and teaching: A retrospective. *The Modern Language Journal*, 85(1), pp. 39-56.
- Schacer, J., (1999). The impact of education technology on student achievement: What the most current research has to say. [Online] available: <http://www.mff.org/publications/publications.taf?page=161> (Dec. 20, 2006)
- Sticht, T. G. (2003). From oracy to literacy. *Literacy Today* [Online] available: <http://www.literacytrust.org.uk/Pubs/sticht.html> (Dec. 28, 2006)
- The Three Bears (from BBC). [Online] available: <http://www.bbc.co.uk/cbeebies/fimbles/stories/threebears/> (January 3, 2010)
- Van Scoter, J., Ellis, D., & Railsback, J. (2001). *Technology in early childhood education: Finding the balance*. Portland, OR: Northwest Educational Technology Consortium.
- Verdugo, D. R. & Belmonte, I. A. (2007). Using digital stories to improve listening comprehension with Spanish young learners of English. *Language Learning & Technology*, 11(1), pp. 87-101.
- Warschauer, M., Shetzer, H. & Meloni, S. (2000). *Internet for English teaching*. Alexandria: TESOL.
- Zevenbergenn, A. A. & Whitehurst, G. J. (2003). Dialogic reading: A shared picture book reading intervention for preschoolers. In A. Van Kleek, S. A. Stahl and E. B. Bauer (Eds.), *On reading books to children: Parents and teachers* (pp. 177-200). Mahwah, JJ: Lawrence Erlbaum Associates.
- Zhao, Y. (1999). Recent developments in technology and language learning: A literature review and metaanalysis ELLS technology review. [Online] available: <http://ott.educ.msu.edu/elanguage/about/literature.asp> (Dec. 28, 2006)

Tables

Table 1. Analysis and classification of the digital story “Eeny, Meeny, Miny, Mo”

| Eeny, Meeny, Miny, Mo (from BBC) http://www.bbc.co.uk/cbeebies/fimbles/stories/leenymeenyminy/mo/ | | | | | |
|--|----------|-----------------------------------|------------------------------------|-----------------|--|
| Topics | Concepts | Functions | Grammar | Language Skills | Required Interface Abilities |
| Animals, colour, number | Actions | Following instructions, narrating | Simple Present and Present Perfect | Listening | Listen, watch and react by clicking on objects |

Table 2. Analysis and classification of the digital story “The three Bears”

| The Three Bears (from BBC) http://www.bbc.co.uk/cbeebies/fimbles/stories/threebears/ | | | | | |
|--|----------|-----------------------------------|-------------|-----------------|--|
| Topics | Concepts | Functions | Grammar | Language Skills | Required Interface Abilities |
| Things in the house, sizes, numbers | Actions | Following instructions, narrating | Past tenses | Listening | Listen, watch and react by clicking on objects |

Table 3. Mean Score Obtained by the Experimental and Control Groups in the Pre-test.

| Pre-test | Groups | N | Mean | SD |
|----------------------------|--------------|----|------|-------|
| Part I | Control | 25 | 1.92 | 1.077 |
| | Experimental | 25 | 1.96 | 1.060 |
| Part II | Control | 25 | 1.56 | 0.870 |
| | Experimental | 25 | 1.48 | 0.770 |
| Total (Part I and Part II) | Control | 25 | 3.48 | 1.531 |
| | Experimental | 25 | 3.44 | 1.387 |

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

| Pre-test | t | p |
|----------------------------|--------|-------|
| Part I | -0.132 | 0.895 |
| Part II | 0.344 | 0.732 |
| Total (Part I and Part II) | 0.626 | 0.923 |

Table 5. Mean Score Obtained by the Experimental and Control Groups in the Post-test

| Post-test | Groups | N | Mean | SD |
|----------------------------|--------------|----|------|-------|
| Part I | Control | 25 | 2.52 | 0.872 |
| | Experimental | 25 | 3.68 | 1.215 |
| Part II | Control | 25 | 2.56 | 0.821 |
| | Experimental | 25 | 2.92 | 0.812 |
| Total (Part I and Part II) | Control | 25 | 5.08 | 1.152 |
| | Experimental | 25 | 6.64 | 1.551 |

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

| Post-test | t | P |
|----------------------------|---------|-------|
| Part I | -3.878 | 0.000 |
| Part II | -1.559 | 0.126 |
| Total (Part I and Part II) | - 4.037 | 0.000 |