

Integrating Computer Assisted Language Learning into Out-of-class Extended Learning: The impact of iPod Touch-supported Repeated Reading on the Oral Reading Fluency of English for Specific Academic Purposes Students

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ABSTRACT

By using the formative experiment, this study investigated how an instructional intervention, consisting of a Repeated Reading (RR) technique and an iPod Touch, helped achieve a valued pedagogical goal, that of enhancing the Oral Reading Fluency (ORF) of sixteen English for Specific Academic Purposes (ESAP) first-year university students. Students used iPod software such as a Voice Memo and DropVox to access reading material, practise RR and upload their recorded repeated readings. Curriculum-Based Measurement (Rasinski, 2004) was used to measure students' automaticity (speed and accuracy) and an adapted version of Zutell and Rasinski's (1991) Multidimensional Fluency Scale to measure their prosody; an online questionnaire was also used to establish the learners' feelings regarding the whole experience. Data analysis revealed that the iPod-supported RR activity helped students increase their automaticity and improve their ORF prosodic features. It also revealed that students appreciated the use of an iPod in the development of their ORF, pronunciation and listening comprehension and their ability to use new technologies.

INTRODUCTION

Current literature reveals that most activity in Oral Reading Fluency (ORF) has been conducted mainly in primary education, with first language students, and involved old technologies. It is only recently that the concept has started being applied and researched in secondary and tertiary education second language teaching programmes, and with the use of new technologies. This study explores the use of Repeated Reading (RR), supported by the use of an iPod Touch, for the development of the ORF of English for Specific Academic Purposes (ESAP) university students, improvement of their knowledge and skills in new technologies and increase of their confidence in ORF.

Although researchers have not come up with one single (Kuhn & Stahl, 2003) definition for 'fluency', most agree that it consists of different "proficiencies" (Oakley, 2003). These include rate of reading, accuracy of the level of the percentage of words a reader is able to decode and types of error made as well as prosodic features (expression and volume, smoothness, phrasing, information and expressiveness) (Worthy & Broaddus, 2001-2002). It is of great importance for people to be fluent for many reasons: fluency helps comprehension. Oral reading fluency develops and improves other skills such as listening comprehension, vocabulary and speaking. Fluent readers tend to read more and learn more. People are more and more required to engage in oral reading professionally (report and presentation delivery). Fluent readers tend to be more positive towards reading and become more confident themselves as readers (Rasinski & Padak, 2000). In addition, fluent readers may end up enjoying, rather than being afraid of, reading in general and reading aloud to an audience in particular. For these reasons, students need to be fluent in Oral Reading Fluency

(ORF). Therefore, it is of vital importance to explicitly and systematically teach it. However, research reveals that teachers themselves often do not dedicate time for ORF in their teaching, either because of lack of time for ORF teaching, learning or practice, or because of lack of expertise (Munro & Derwing, 2007; Ramirez-Verdugo, 2006).

The literature also reveals that research has been carried out in ORF mainly at primary level with first language (L1) students, less at secondary level and second language (L2) and even less at tertiary level and L2 (Kuhn & Stahl, 2003; National Reading Panel, 2000). Although technology has been used in oral reading fluency instructional models (audio tape), mostly in classroom settings, in recent years, new technologies such as an iPod Touch offer more flexibility in tools, ways of learning and learning environments.

This project aimed to address the potential role of more systematic teaching of ORF with the use of iPod Touch technology as part of an activity beyond the classroom setting which can contribute significantly to the improvement of students' ORF, knowledge and skills in new technologies, and increase their confidence in ORF.

READING FLUENCY

In order to treat the ORF of these ESAP students, it was important to establish the current theories and practices in the area and choose the best approach that would fit the specific context and needs. According to research, reading fluency has been a focal issue in first language (L1) settings for many years and has recently become one in second language (L2). In L1, fluency is thought to be the ability to read a text accurately and quickly and with appropriate expression (Grabe, 2004; Kuhn & Stahl, 2003; The National Reading Panel, 2000; Rasinski, 2004). According to literature, when fluent readers read silently, they recognise words automatically (La Berge & Samuels, 1974; Samuels, 2002; Stanovich, 1991) and group them quickly in ways that help them gain meaning from what they read. When fluent readers read aloud, they do so effortlessly, rapidly and accurately, and with phrasing and expression or prosody (Dowhower, 1989, 1991; Schreiber, 1980, 1991; Schreiber & Read, 1980).

Most definitions of fluency have been proposed for L1 reading, and the researchers' discussion on methods to assess fluency development generally focused mainly on L1 reading fluency and much less on L2/FL reading (De La Colina, et al., 2001). Studies in L2 reading commonly adapted the theories of L1 reading fluency as their underpinning theoretical basis. In second and foreign language learning, fluency has been defined as "the ability to speak or write a particular foreign language easily and accurately" (Pearsall, 1998: 707) and to make "the most effective use of what skills are already known" (Nation, 1997: 30).

Reading Fluency Indicators

Although researchers approach reading fluency from different perspectives, a consensus on the indicators of reading fluency has been established. There is popular agreement that the three fundamental dimensions of reading fluency are: automaticity in reading speed and accuracy in decoding words read, and prosody, the expressive meaningful interpretation of text (Grabe, 2004; Tompkins, 2003).

Automaticity in reading speed is defined as the focus on quick and automatic recognition and processing of words in connected text; automaticity in reading speed or the appropriate reading pace for learners' reading level is measured quantitatively by counting the number of correct words read per minute (CWPM) compared to related benchmarks.

Automaticity in accuracy is the ability to accurately recognise or decode the meaning of words and read them correctly.

Prosody is also an important indicator of fluency in oral reading. Research in first language (L1) has established a set of spoken language features that comprise prosody. These features include pace, smoothness, phrasing and information, expression (stress or emphasis, pitch variations, intonation, pace, pausing and other elements in oral expression) and volume (Dowhower, 1987; Johns & Berglund, 2002; Osborn, Lehr, & Heirbert, 2003; Rasinski, 2003; The National Institute of Child Health and Human Development, 2000). When readers embed all these aspects in their oral reading, they are giving evidence of actively interpreting or constructing meaning from the passage. According to Rasinski (2004), “These dimensions are related to one another—accurate and automatic reading creates the conditions for expressive reading. All three are important for effective comprehension and overall good reading. All must be taught, and all must be monitored.” It is, therefore, evident that reading fluency is essential to reading proficiency and lack of fluency contributes significantly to reading difficulties (The National Institute of Child Health and Human Development, 2000) and comprehension (Allington, 1983; Schreiber, 1980).

Reading Fluency in First (L1) and Second Language (L2)

Researchers have regarded L2 reading fluency as the ability to read and comprehend a text in the foreign language at an adequate speed and, like in L1, two observable signals of this aspect they discuss are speed and accuracy in comprehension (Nation, 2005; Segalowitz, Segalowitz, & Wood, 1998). According to research, there are some similarities in L1 and L2 reading (Lems, 2005). L2 readers resemble L1 readers in substance, but process more slowly. The more proficient an L2 reader becomes, the more his or her processing strategies resemble those of an L1 reader. The differences are of degree not kind. However, this indicates the necessity for the L2 reader to practise and develop ORF in order for that to resemble the L1 one.

Conversely, there are some differences in L1 and L2 reading. According to Lems (2005) there are at least three factors, which play their role when an L2 adult reads a text aloud and make L1 to L2 reading different. These factors are: (a) Decoding without comprehension, (b) Comprehension without decoding, and (c) Decoding and pronouncing with negative transfer. These factors make it necessary for L2 learners to practise and develop their ORF in the target language.

Although fluency is considered to be important and consists part of reading instruction from a young age, many students in all levels up to university level struggle with it. According to Blevins (2002), the reasons for poor fluency are lack of:

- (a) Exposure to fluent models
- (b) Attention to meaning—focus on figuring out words
- (c) Appropriate level text
- (d) Practice time

Students who are not fluent readers spend more time on decoding than they do on understanding the meaning of a text. Choppy, inaccurate reading impedes reading comprehension (Snow, Burns, & Giffin, 1998, cited in The National Reading Panel, 2000b: 3-1). Reproducing the rhythm that the author of a text intended helps a reader understand the author’s intended meaning.

REPEATED READING (RR) FOR ORF IMPROVEMENT

Numerous studies have been conducted and published on reading fluency (The National Institute of Child Health and Human Development, 2000), many in L1 and others increasingly in L2. Researchers have found several specific oral reading fluency instruction models to teach reading fluency. These models typically fall into two main categories, each with several variations:

- (a) Independent silent reading or extensive reading with minimal guidance and feedback (The National Institute of Child Health and Human Development, 2000: 12; Reading Rockets, 2000);
- (b) Guided Repeated oral readings or Oral reading with guidance and feedback, or repeated and monitored oral reading.

In L1, these support that repeated reading improves student's oral reading automaticity and prosody (Carver & Hoffman, 1981; Rashotte & Torgesen, 1985; Samuels, 1979; Young et al., 1996). Analogous studies support similar findings in L2 (Blum, et al., 1995; Lems, 2005; Taguchi, 1997).

Guided Repeated Oral Reading

Repeated Reading devised by Samuels (1979) is a research-based instructional intervention, shown to be effective in developing reading fluency. Repeated Reading emerged from the theory of automatic information processing in reading (Samuels, 1997). It gives the opportunity to students to practise and work on all areas of reading fluency, word recognition accuracy, reading speed and prosody. These are used as indicators of desired fluency achievement (Samuels, 2002).

Repeated Reading is one of the most-studied methods for increasing reading fluency (Meyer & Felton, 1999). Glass and Zygouris-Coe (2005) summarise what research has shown regarding Repeated Reading:

- Improve both fluency and comprehension (Samuels, 1997).
- Increase word recognition (Johns & Berglund, 2002) and decrease word recognition errors (Samuels, 1997).
- Lead to faster processing of text (Dowhower, 1989).
- Increase factual retention (Dowhower, 1989).
- Help comprehension and encourage deeper questioning and insights (Dowhower, 1989).
- Help struggling readers break out of word-by-word reading to read with more meaningful phrasing (Dowhower in Rasinski, 2003).

Also,

- As a study strategy, Repeated Reading is equal to if not better than other more complicated strategies (Dowhower, 1989).
- Students read new selections at a faster pace than the initial speed on the previous reading selection (Samuels, 1997).
- The number of re-readings required reaching criterion-reading speed decreases as students continue the technique (Samuels, 1997).

Scientific-based research reviews have established that reading fluency is a critical component of learning to read and that an effective reading programme needs to

include instruction in fluency (Chard, Vaughn, & Tyler, 2002; The National Institute of Child Health and Human Development, 2000).

ORF RR Instructional Techniques

Since repeated reading method was first developed, a number of effective variations have been introduced (Meyer & Felton, 1999; McKane & Greene, 1996; Tan et al., 1994):

- (a) Unassisted RR does not involve a reading model;
- (b) Assisted RR uses a live (adult or peer) or audio-taped reading model;
- (c) The Reading-While-Listening Method (Carbo, 1978; Chomsky, 1976; Rasinski, 1990).
- (d) The *Readers' Theatre* Students read scripts and rehearse a play to prepare for a performance.

As in L1, linguists and language practitioners have also explored activities to promote fluency in L2/FL reading. Some of these techniques include repeated reading, paired reading, extensive reading aloud, and the like. (Day & Bamford, 1998; Nation, 1997, 2005; Taguchi, Takayasu-Maass, & Gorsuch, 2004).

TECHNOLOGY-ENHANCED LITERACY LEARNING

Another claim by researchers is that new technologies have influenced and changed the definition of literacy (Leu et al., 2004). New technologies should be integrated in students' learning as part of their literacy, not only in, but also out of class. One such technology is Podcast or Vodcast. It can be posted on the Internet or uploaded on a mobile device, such as an iPod Touch, accompanied by a script (McQuillan, 2006), where students can have access to it. An iPod Touch can be a valuable learning tool because it provides flexibility (Doolittle and Mariano, 2008), mobility and an alternative learning environment beyond the traditional one. Students can use the iPod Touch out of class at any location they wish, and work on improving their ORF independently. The ability to take a model of fluency with them to a comfortable spot is important to promote ORF.

Devices such as iPods have been used in various ways in language learning. Hardly any studies were found specifically related to the use of iPods in developing ORF independently and out of class. Thus, the teaching of ORF in L2 in this research project was designed with these observations in mind. Based on the review of the literature on ORF, this project explored the Repeated Reading technique with the use of iPod technology to improve ORF of L2 tertiary ESAP students as part of an independent activity beyond the classroom.

RESEARCH THEORY AND METHOD

Research Theory: Appropriation

According to appropriation theory, something is foreign to us until we appropriate it, in other words, we adopt it to our own purposes and it becomes our own. The concept was first utilized to describe language acquisition (Bakhtin, 1895-1975). In recent years, it has also been used to analyse how learners encounter new technologies. In this research project, appropriation constitutes the theoretical basis for the description of how and to what extent ESAP students' ORF improved with the use of iPod technology and the RR technique.

Research Method: Formative Experiment

A method based on the Appropriation Theory is the Formative Experiment. Formative experiments address questions clearly relevant to practitioners. They employ forms of experimentation similar to those used by practitioners. They are also more directly related to practice than to other forms of research. As a result, according to Reinking & Bradley (2004, p. 154), they are more likely to appeal to practitioners. With this method, changes in goals and uses can be tracked, for example when a new technique or piece of technology becomes part of a learning environment.

Formative experiments aim to improve instruction through the combination of qualitative methods of investigation and interventions in learning situations (Jacob, 1992). Data collection, analysis, and interpretation are focused on the pedagogical goals (Oakley, 2003).

Formative experiment method is also a potentially valuable means of exploring the use of technology to enhance literacy learning. The formative experimental design was used in this project because it was found well suited to the purpose of the research project. It addressed the question of how an out-of-class independent and autonomous RR activity, supported by the use of an iPod Touch would help university students in appropriating native-like pronunciation, in other words, improving their ORF and in appropriating the use of new technologies.

iPod ESAP ORF PROJECT DESIGN AT CUT LC

Setting

During the first semester of the academic year 2011-2012, at CUT LC it was noticed that first year ESAP: Communication and Internet Studies (CIS) students needed more instructional time to practise and improve their ORF. For this reason, an interventional treatment was planned for Spring 2012. The aim was to explore whether and to what extent the provision of beyond the classroom practice through the use of repeated reading instructional technique supported by iPod Touch technology could improve ESAP: CIS first-year students' ORF. This was an effort to complement class work with homework, independent study and out of class systematic practice and exposure to the target language.

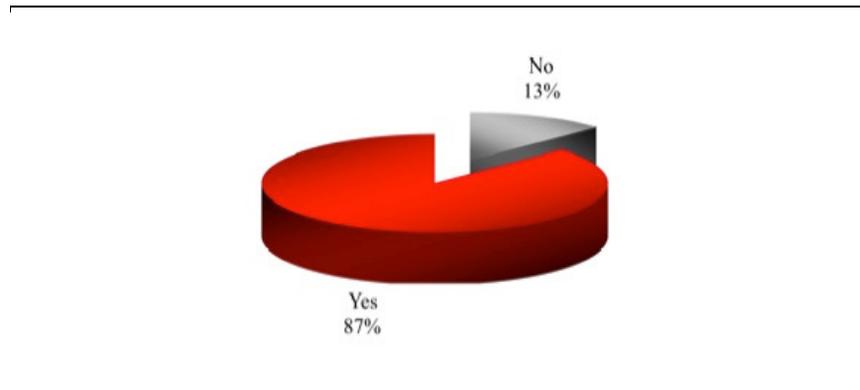
New technologies constituted an integral part of the ESAP programme in and out of class (use of Moodle, Wiki, Internet, email, etc.). The iPod Touch was added to support students' independent practice and improve their ORF out of class. As it was established by the pre-activity questionnaire, students were familiar with and used new technologies in their everyday life, and particularly mobile technology, therefore the iPod was considered to be a useful and affordable instructional tool to turn fluency instruction into an appealing and independent activity. These were the assumptions that this research project hoped to support.

Participants

The fifteen participating students had an average English learning background of about 4 to 12 years and an average level of language competence of B1 of the Common European Framework of Reference (CEFR) for languages, but needed to improve their ORF. To do so, it was decided to use new technologies. For this reason, therefore, before starting the RR treatment, students were asked to answer a web-based questionnaire accessed via the Internet in order to establish their digital literacy.

The vast majority had both a mobile phone (93%) and a laptop computer (87%). Every participant said they had access to a computer at home in a private space (100%); the majority of these were located in their bedroom (80%). Only 20%, however, had used an iPod. All students (100%) reported that they used a computer at the university and nine out of ten also used it in other areas as well (87%) (Figure 1).

Figure 1. Places Where Students Use a Computer



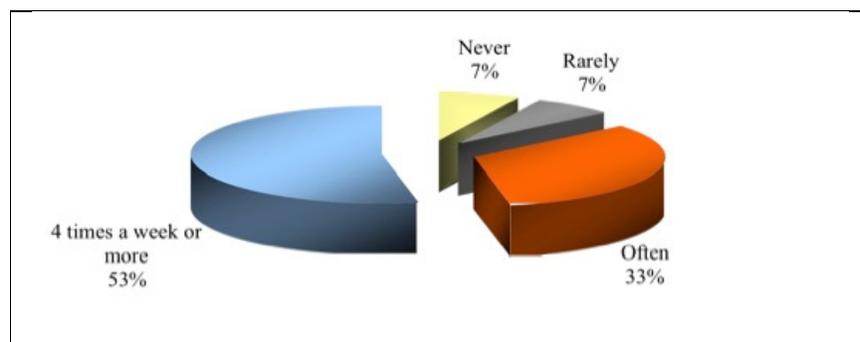
Students answered that they had been using computers in the last 7 years (average 7.3). All students had Internet access at home (100%) for about 5 years (mean 5.1); one in two (53%) were connected several times during the day and one in five (20%) once daily. The vast majority used the Internet just to surf or to use Moodle for educational purposes (93% respectively). The greatest use was made mainly at home (93%) using a laptop computer (80%). One in two students owned a Smartphone (50%), and the rest had a standard mobile phone (50%). Text messaging (93%), listening to music (86%) and talking with friends (79%) had the highest reporting rates.

Table 1. Mobile Phone Highest Use Rates

Text messaging	93%
Listening to music	86%
Talking to friends	79%

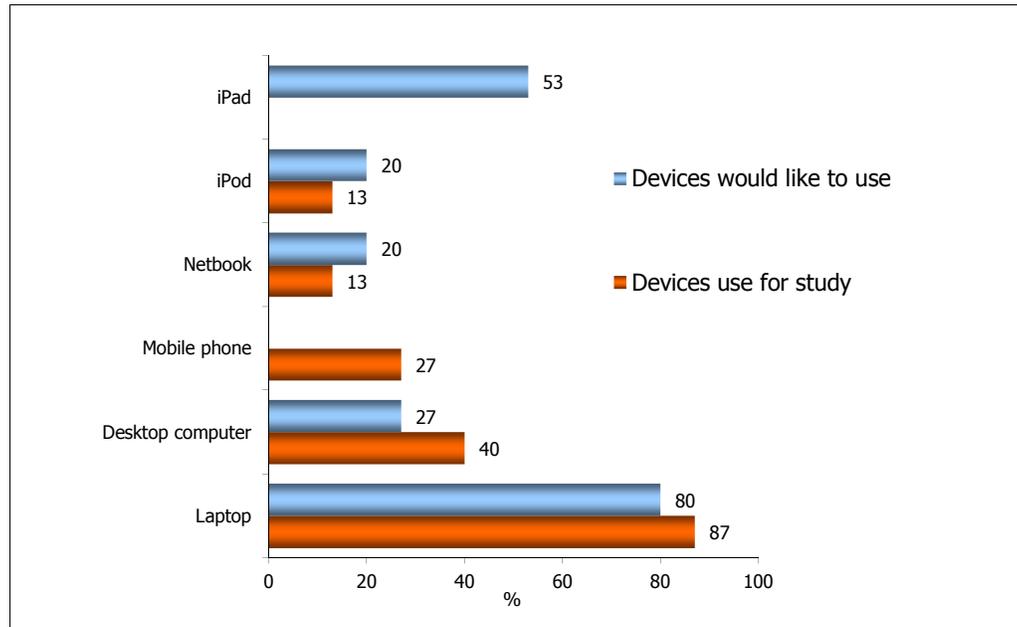
More than five out of ten students watched videos on YouTube four or more times a week (53%) (Figure 2):

Figure 2. YouTube viewing frequency



Nine out of ten had heard a Podcast or watched a Vodcast (93%). During their study, 87% of the students primarily used a laptop computer, 40% a desktop computer, 27% a mobile phone, and 13% Netbook and iPod respectively. When asked what they would prefer to use, the laptop computer came first (80%), followed by the iPad (53%), desktop computer 27%, and iPod and Netbook 20% respectively. Students had the opportunity to give more than one answer as to what device they used (Figure 3).”

Figure 3. Students’ Preferences in Using Different Devices



The data analysis revealed that students were satisfactorily digitally literate to be able to use an iPod Touch to practise and improve their ORF.

Repeated Reading Activity and tools

After examining the various RR models, which, according to literature are more successful than Student Individual Silent Reading, it was decided to use the one that involved the use of technology. Taking it a step further, the iPod was used to give the opportunity to students to work independently and out of class, thus extending exposure to the target language, practise in their own time and as much as they wished, using Mobile Technology.

Three contextualised (Jenkins, Fuchs, van den Broek, Espin & Deno, 2003) authentic texts from the students’ field of study of B1 CEFR level in digital form were used for the treatment-activity. A class set of Apple iPod Touch and Voice Memo, DropBox, DropVox, and Email were used. With these tools, students accessed the native speaker models, practised, recorded and uploaded their readings.

Procedures

Students completed online pre and post research questionnaires and had an ‘iPod Touch’ training session at the LC Research and Cooperative and Interactive Language Learning Centre (ReCILLC). Communication with the researcher was carried out through email and text messaging.

Students practiced independently and out of class (at home, at ReCILLC, or any other place they liked) for six weeks. They used one text for every two weeks. During the first week, they recorded and uploaded using DropVox a first unpractised loud reading of the text. During the second week, they watched and listened to the text in the form of a YouTube video clip, performed by a native speaker, and repeated after the speaker, recorded and listened again and again, using the iPod Touch software Voice Memo, for as many times as they needed to, until they felt their oral reading fluency was as close as possible to the native speaker. Then they recorded and uploaded it using DropVox. This was repeated three times with three different texts. At the end of the recordings, students' reading fluency was evaluated: The changes in ORF from the first to the last recording were compared.

ORF Assessment and Measurement Tools

Since ORF researchers suggest that reading fluency consists of reading automaticity (speed: the number of correct words read per minute, and accuracy: the ability to decode the words read per minute, in other words their reading performance level) and prosody (the ability of readers to appropriately use phrasing and expression to convey the meaning), this research aligned its approach to assessment and measurement with these fluency dimensions.

After a thorough literature review on measurement tools, the following broadly accepted valid measurements tools were used in order to assess student fluency reliably, validly and efficiently, and determine students' ORF improvement, and the effectiveness of the iPod ORF technique:

- (a) Curriculum Based Measurement (CBM) developed by Stanley Deno (1985) and adapted by Rasinski (2004); this generates quantitative scores and gathers qualitative, diagnostically useful descriptions of performance in decoding words read.
- (b) Multidimensional Fluency Scale (MFS) developed by Zutell and Rasinski (1991) and adapted by others, and the researchers of this project; MFS gathers qualitative descriptions of performance in expression or prosody.

Validity and Reliability of Instruments

Words correct per minute (WCPM) is a well-established and validated (Deno et al., 1982, p. 44) measure by which reading fluency has been measured and shown to correlate with silent reading comprehension. The Multidimensional Fluency Scale (MFS) (Zutell & Rasinski, 1991) using three criteria in its rubric (pace, smoothness, and phrasing) (Moskal, 2002; Pinnell et al., 1995), and the adapted version which includes expression and volume have been extensively used in research to measure reading fluency.

FINDINGS AND DISCUSSION

Measuring of Speed or Rate quantitatively

CBM was used to measure speed or rate of Correct Words per Minute (CWPM) quantitatively. Table 2 sums up the findings. The student total average Word read Per Minute of the First Reading (R1) of all 3 texts was 137 words and of the Second Reading (R2) 149 words. This indicated that student average number of Words read Per Minute improved. The Student total average of Correct Word read Per Minute of R1 of all texts was 128 words and of Reading 2 142 words. This indicated that student average number of Correct Words read Per Minute improved. Participants showed significant reading rate growth from the first (R1)

to the second (R2) reading of each text in Words Per Minute (WPM) and CWPM. This was also evident from the average WPM and WCPM from R1 to R2 of all three texts.

Table 2. Average Words Per Minute and Correct Words Per Minute

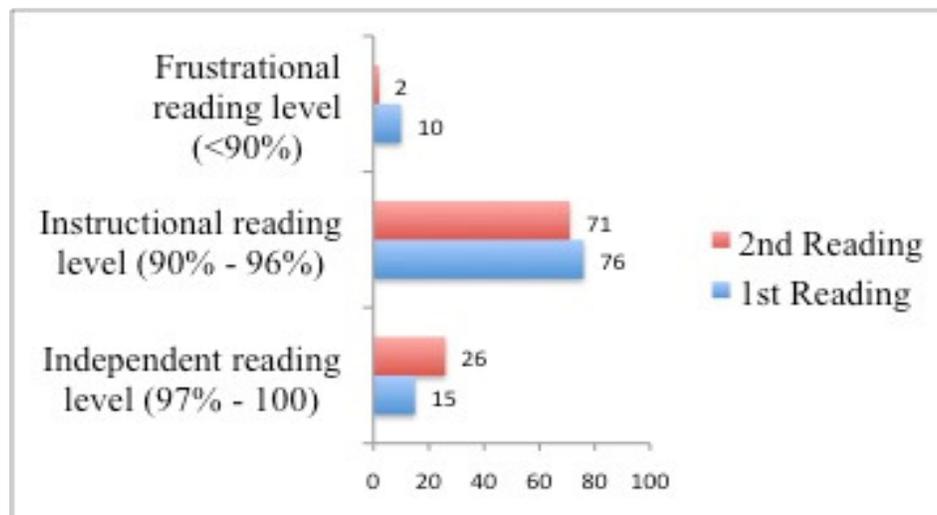
	Average WPM			Average WCPM		
	Total (R1 & R2)	R1	R2	Total (R1 & R2)	R1	R2
1 st text	125	119	132	116	108	144
2 nd text	158	152	164	151	144	159
3 rd text	145	139	150	137	131	144
All texts	143	137	149	135	128	142

MEASURING AUTOMATICITY

Accuracy Quantitatively

Two experienced English language lecturers (one was a native speaker) used the CBM to measure quantitatively the accuracy of the level of the percentage of words a reader was able to decode at CEFR B1 level. Based on the review of relevant literature, the Curriculum Based Measurement measuring tool was used to measure Word Decoding accuracy quantitatively by measuring the students' reading level of performance. Graph 4 presents the results of measuring the word decoding accuracy between the first and second reading of the 3 texts (Figure 4).

Figure 4. Levels of Performance for Word Decoding – Accuracy (All Texts)



The results indicate that from the first to the second reading, there was an improvement in performance: Frustration reading level decreased by 8%, in other words word decoding accuracy improved by 8%; although Instructional reading level decreased by 5%, it increased at Independent level %; in other words, at that level it went up from 15 to 26%. Overall, the word decoding accuracy level improved and moved to higher levels.

ESAP students' level of performance for word decoding from the first to their second reading improved: The percentage of ESAP students at Frustration reading level, who found

texts too challenging to read decreased; although the percentage of students at Instructional level, who were able to read texts with some assistance decreased, the students at Independent level, able to read texts without assistance increased (Rasinski, 2004)

Accuracy Qualitatively

Although the level of word decoding accuracy increased, we were interested in analysing qualitatively the different types of errors made. The two experienced English language lecturers listened to student oral reading recordings and recorded their errors in order to measure their Accuracy qualitatively. The following five different types of errors (Hasbrouck, 2005) were identified.

Table 3. CBM Qualitative Measurements of Error Types

	Total (All tests)	First reading (All tests)	Second reading (All tests)
	%	%	%
Mispronunciation	62	61	64
Substitutions	17	18	15
Hesitation / No Attempts	17	18	16
Omissions	3	3	3
Word Reversal	1	1	2

The most common errors made by the participants were mispronunciations, 62% in total; there was a 3% deterioration from the 1st to the 2nd reading; this indicated an increase in mispronunciation. A second type of error was Substitutions, 17% in total; there was a 3% improvement from the 1st to the 2nd reading. A third type of error was Hesitation / No attempts, 17% in total; there was a 2% improvement from the 1st to the 2nd reading. There were hardly and omissions or word reversals.

In conclusion, the treatment activity and the iPod Touch use, revealed improvement in students' reading speed, word decoding accuracy and the types of errors students made.

ORF DIMENSION: READING PROSODY

The adapted version of Zutell and Rasinski (1991) Multidimensional Fluency Scale (MFS) was used to measure the second dimension of ORF, students' Prosodic features of fluency qualitatively. The scale measures the following dimensions: Expression and Volume, Phrasing and Information, Smoothness and Pace. In addition, for this project, the participant-researcher added another dimension to the scale, that of Negative Transfer errors interference or cross-linguistic influences/interference. The MFS rubric has 4 levels, with 1 being the lowest and 4 being the highest. Scores can range from 4 to 16. Scores that are 8 and below mean there is fluency concern. Scores that are above 8 mean the reader has good progress in fluency. The two experienced English language lecturers listened to the students' recordings and using this scale evaluated and measured their Expression (Table 4).

Table 4. MFS Rubric for Qualitative Measurement of Prosody or Expression

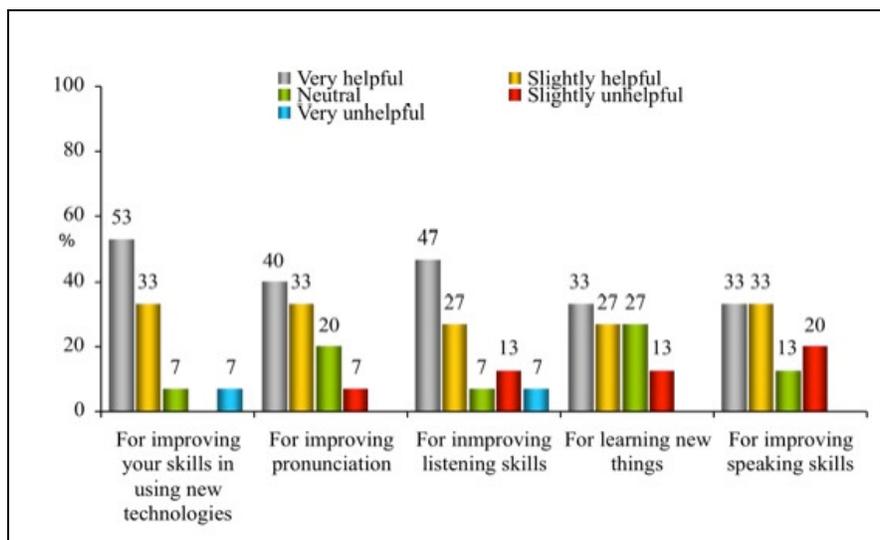
Dimension	1	2	3	4
	Read words in a quiet voice as if simply to get them out.	Begins to use voice to make text sound like natural language in some areas but not in others.	Makes text sound like natural language throughout the better part of the passage	Reads with varied volume and expression and with enthusiasm
A. Expression and volume: 1st reading (R) - all texts	24 %	38 %	33 %	5 %
Expression and volume: 2nd reading - all texts	-	40 %	32 %	28 %
	Reads word by word in a monotone voice, with little sense of phrase boundaries	Reads in two or three word phrases, giving the impression of choppy reading	Reads with a mixture of run-ons, mind-sentence pauses for breath, and some choppiness	Reads with good phrasing mostly in clause and sentence units, with adequate attention to expression
B. Phrasing and information: 1st R - all texts	27 %	34 %	37 %	2 %
Phrasing and information: 2nd R - all texts	-	34 %	37 %	29 %
	Makes frequent extended pauses, hesitations while reading, false starts, sound-outs, repetitions of words or phrases, and/or multiple attempts to read the same passage.	The reader experiences several “rough spots” in the text.	Reads with occasional breaks in smooth and rhythm caused by difficulties with specific words and/or structures.	Reads smoothly with some breaks, but resolves word and structure difficulties quickly, usually through self-correction.
C. Smoothness: 1st R -all texts	20 %	39 %	37 %	5 %
Smoothness: 2nd R – all texts	-	29 %	39 %	32 %
	Reads slowly and laboriously.	Reads moderately slowly.	Reads with an uneven mixture of fast and slow pace.	Reads consistently with a conventional pace and an appropriate rate throughout the reading.
D. Pace: 1st R –all texts	15 %	32 %	44 %	10 %
Pace: 2nd R–all texts	2 %	17 %	32 %	49 %
	Makes frequent negative transfer from Greek (GK) to English (EN)	Makes several transfer errors from GK to EN	Makes occasional transfer errors from GK to EN	Reads with no cross-linguistic negative transfer from GK to EN
E. Negative transfer 1st R -all texts	43 %	29 %	29 %	-
Negative transfer: 2nd R-all texts	43 %	-	-	57 %

On the whole, students' prosodic fluency improved in all dimensions from the first to the second reading of each text: expression and volume, phrasing and information and smoothness percentages moved from all levels to the last three higher levels. Although pace percentages still appeared in all four scales, on the whole they improved. Interestingly, although there was a shift from scale 2 and 3 to 4, which is the highest, 43% remained in scale 1, the lowest scale for negative transfer error.

STUDENTS' FEELINGS ABOUT THE USE OF iPod IN ORF DEVELOPMENT

The development of students' ORF was evidenced through the use of reliable and valid measurement tools such as CBM and MFS. A post iPod project online Questionnaire however also explored students' feelings about the use of iPod and their ORF development. According to the students, the use of the iPod enabled them to a greater extent to improve their skills in the use of new technologies, their pronunciation, and their listening comprehension (Figure 5).

Figure 5. How Helpful the iPod Was in the Following Situations



More than eight in ten students (84%) reported that the use of the iPod was “very” to “somewhat” easy. One in two (54%) supported that iPod helped them become more confident in speaking. The vast majority of students (87%) indicated that the use of technology in general facilitates their lives, while helping them to achieve more as students (67%).

CONCLUSION

There were, of course some limitations in this project. There were certain factors which influenced the validity of the study. One was the small number of students. Another was the need that was noticed to further develop self-management skills and responsibility of students' own learning. Moreover, students came from a 12-year primary and secondary educational system, which did not provide them with much opportunity to develop those

skills; therefore, these elements need to be further considered and hopefully be interwoven in the tertiary learning of such students.

The study was intended to further explore the development of Oral Reading Fluency at adult level, and more specifically that of university students. In addition, it was intended to explore this development with the use of mobile (iPod Touch) technology in an out-of-class independent activity. The research revealed that the provision of a 6-week out-of-class support through the use of iPod technology-based independent, Repeated Reading instructional technique had an impact on ESAP: CIS students' Oral Reading Fluency. Students showed significant improvement in their oral reading fluency after the repeated reading iPod-supported modelled interventions. Their automaticity (speed and accuracy) increased over the period of the iPod project. It was noted however that further investigation was needed regarding the slight increase of word mispronunciation between the first and second text reading. The prosodic features of students' fluency improved. Students appreciated the use of iPods in their learning. Moreover, they felt that not only did their oral reading fluency improve but also their pronunciation and listening comprehension. They also acknowledged that they had an opportunity to develop their knowledge and skills in the use of new technologies. They also claimed that it helped them become more confident in speaking.

The use of an iPod Touch in the development of students' ORF at CUT LC was beneficial to both the students who took part in the project and the researchers, who explored and researched ways in extending language exposure beyond the classroom and helping students work independently on improving their ORF with the use of mobile technology. Taking into account the positive and profitable findings of the ORF iPod Touch programme, it is envisaged that further research could be carried out in the use of technology for the improvement of ORF of other types of students: in autumn 2012 semester, the same research project was adapted and used to cater for the needs of two other types of students. The first was a number of students with Special Learning Difficulties (SpLD), of A2 to B1 CEFR level. Research in the development of English oral reading fluency theories and practices of such L2 students with the use of technology was explored and the research project was based on the particularities and differentiations of that group. The second group consisted of adult professionals who learned Greek as a second language at C1 CEFR level. The analysis of the results of both groups is in process. Other areas that could be researched are the use of other Technologies for ORF improvement apart from an iPod Touch, such as students' own Smart Phones, Tablets or Laptops. Other types of ORF techniques such as Reader's Theatre with the use of technologies could also be further explored with adult students or professional groups. The inclusion of technology supported ORF programmes in all language courses could also be explored.

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