A Study of How Repeated Reading Affects English Recitation Fluency in College Students

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Abstract

The present study verified the effect and efficiency of repeated reading (RR) on oral reading fluency in the EFL environment of Taiwan. By promoting oral reading speed and automaticity, RR proved to be an effective technique to enhance oral reading and thus speaking fluency. Fifty-one freshman students from Tamkang University in Taiwan participated in this study. They had eight 30-minute instructions during the intervention period. SPSS 11.0 was adopted to do the quantitative analysis (paired sample t-test, effect size, regression analysis). The results indicated that there was a significant improvement in oral reading speed after the intervention (130-211 words correct per minute) regardless of the following factors: (1) gender, (2) native language, (3) time using/learning English outside of training, and (4) pre-test performance. Responses from post-test questionnaires indicated a high acceptability of RR among subject groups. Accordingly, RR appears to be a highly promising technique for automaticity development, speed training, and fluency in oral teaching.

Key words: repeated reading; oral reading; speed; fluency; automaticity; transfer effect

Given the increasing number of articles about English foreign language learning in Taiwan, attention has come to be placed on speaking proficiency, and more English teaching professionals are emphasizing teaching students to speak the target language with accuracy, efficacy and fluency (Chen, 2005; Su, 1995). This change can be traced to one of the main teaching objectives of improving students’ English communicative abilities, as specified in the Nine-Year Integrated Curriculum issued by the Education Department in Taiwan (Liang, 2003). Given all these policies and efforts, Taiwanese students still find speaking the most challenging of the four basic skills of listening, speaking, reading, and
It has been well established that students’ poor speaking ability can obstruct their English communication. Unfortunately, the less-than-satisfying English ability of Taiwanese students does not meet the teaching objective of the Curriculum. Further research also indicates that college students in general are incapable of expressing themselves or fluently communicating with others in English (Hsu, 2004). Speaking English fluently is a critical consideration for both English language teachers and students in Taiwan. English speaking skills are important not only for communication, but also for other practical reasons, such as passing qualifying examinations or job promotions. Speaking modules are included in such exams as the General English Proficiency Test (GEPT) in Taiwan and Test of English for International Communication (TOEIC), two of the required examinations for college students as well as employees. The present research recruited the method of repeated reading (RR), an oral reading technique, to improve the subjects’ oral reading ability and overall oral skills. As stated in previous research, it is suggested that teachers should frequently adopt fluency instruction (Chen, 2003; Kuhn & Stahl, 2003), so this study was conducted to examine if it can be a plausible teaching technique for fluency development.

**Literature Review**

**Oral Reading Fluency**

Researchers such as Chen (2003) verify that the oral reading is related to the student’s oral ability. Furthermore, research documentation has been established that oral reading fluency is a vital skill for students at all levels (Fuchs, Fuchs, Hosp & Jenkins, 2001). Oral reading fluency not only has to do with the students’ silent reading in English, but also is related to their speaking ability. It is now well established that L2 learners tend to speak at slower rates than do native speakers (Guion, Flege, Liu & Yeni-Komshian, 2000). It appears that L2 users speak more slowly than native speakers for many reasons, including production problems due to slower lexical access and articulatory difficulties that arise in the production of segments and prosodic patterns that are less well established than those of their native tongue (Munro & Derwing, 2001). Similarly, Hulme and Roodenrys (1995) assume that slow readers have slow articulation rates, which then leads to poor memory spans as a consequence of the slower processing of information in the articulatory loop of the working memory system. These studies unanimously suggest the importance of articulation and oral reading fluency are related to speaking.

To improve the learners’ oral skills, oral reading fluency remains a core factor as suggested in the present research. Various experts have concluded that fluent readers are freed from the process of decoding or word recognition, thus allowing themselves to focus on larger units of text or cognitive processing (LaBerge & Samuels, 1974; Perfetti, 1985; Samuels & Flor, 1997). In reading, as in many psychomotor tasks such as typing or playing the piano, achieving fluency implies a decrease in errors and an increase in speed (Moyer, 1982). Among various definitions of fluency (Hudson, Mercer & Lane, 2000; Meyer & Felton, 1999; Samuels, 1979; Samuels, 2002), Moyer (1982) suggests the most specific and
measurable one, which involves two primary factors—accuracy and speed, as adopted in this study. Moyer points out that there are two major components in reading speed, namely, the word-naming speed and the speed of reading connected discourses (1982). While repeated reading of a single word list prompts students’ processing speed in reading, repeated reading of connected discourse improves fluency (1982). Other studies (Dahl, 1979; Young & Bowers, 1995) are also in favor of the fluency reading instruction and its efficacy on reading rate advancement. These papers verify that fluency can be increased with training.

**Automaticity**

Automaticity is gaining increasing attention in SLA research for its indispensible role in the development of reading (Willcutt, 2004; Wolf, Miller & Donnelly, 2000) and speaking (Kuo, 2006). Evidence for this can be found in several papers on reading (Harrison, 1992; Mercer et al., 2000) and oral skills (Kuo 2004, 2006; Mercer et al., 2000). The improvement is observed to be transferable when the students are asked to read new material (Dowhower, 1987; Rashotte & Torgesen, 1985). Yoshimura (2000) proposes the adaptation of automaticity theory into the EFL learning environment in Japan. In fact, Taiwan provides another EFL environment in Asia where automaticity theory could similarly be applicable. The definition of automaticity used in the present research is based on the following research. In the work of Edformation (2003), the minimum oral reading speed is 130-200 words correct per minutes (WCPM) for Grade 12 students in the directions of graded passages by The Ohio Literacy Alliance. This is supported by a study using the Nelson Denny Reading Test revision (2000), in which a silent reading rate around 200 words read per minutes (WPMs) (SE=20) for high school students (L1) is deemed to be a reasonable speed. Accordingly, in the present research, Taiwanese college students that can reach an oral reading rate above 200 WCPM were recognized as reaching automaticity in oral reading.

The features of automaticity have been identified in a number of studies. Schneider and Shiffrin (1977) state that the beginning stages are characterized by controlled responses, which are slow, laborious, and highly dependent on conscious control. The advanced stage is characterized by automatic responses which are fast, accurate, not under conscious control and seemingly effortless. Similarly, Naslund (1987) notes that there are differences between the stages of accuracy and automaticity, as automaticity requires fewer attentional demands, allowing the performer to do other tasks at the same time. In line with previous studies, Samuels and Flor (1997) posit that a skill learnt will first reach the stage of accuracy, and through practice, the stage of automaticity (1997). When accuracy is reached, the knowledge or skill is stored in short-term memory, while with automaticity it is stored in long-term memory. Accordingly, once automaticity is reached, the knowledge or skill is hardly forgotten (Flor, 1995; Naslund, 1987). Samuels (1979) traces automatic word recognition skills in RR through three levels. At the first level (the first non-accurate stage), word recognition is difficult and the student can hardly recognize some words used even when adequate time is given. At the second level (the accurate stage), the student is able to recognize the words, but requires a lot of attention and effort. At the third level (the automatic stage), the student is able to recognize the words without effort. All these studies
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indicate that automaticity is characterized by ease of performance, which is achieved through repeated practice. James (1890: 37) clearly proposes that automaticity is essential and that with practice, improvement takes place and allows the learner to move beyond conscious control of basic tasks. Samuels (1979) upholds that repeated reading renders opportunities to master the material to students before moving on.

Repeated Reading (RR)

“One important function of RR is that it provides the practice to become automatic” (Samuels, 1979: 379). Since the mid- to late-1970’s, the method of RR has been suggested as an effective practice for increasing students’ reading fluency (Samuels, 1979). It is adopted in this study to help students to develop their fluency in speaking by increased articulation speed achieved through oral reading. RR is also named multiple oral rereading (MOR) (Moyer, 1982). Huey (1968) describes the procedure of repeated reading (RR) as a reading method which is used by many children in Asia and in the United States who are learning to read by simply practicing reading texts over and over until they were able to read it fluently. RR is one of the procedures that can help non-fluent readers to achieve automatic word identification skills. Samuels further provides a clear definition of RR as “a supplemental reading program that consists of re-reading a short and meaningful passage until a satisfactory level of fluency is reached” (1979: 404).

In general, RR procedures fall into two categories:

1. Assisted reading: originally evolved out of the neurological impress model. It has been administered by a variety of researchers (Carbo, 1978; Chomsky, 1976; Medcalf, 1989; Vygotsky, 1978).

2. Unassisted reading: children read independently (Dahl & Samuels, 1974). Hintze et al. (1997) explain that the researchers ask children to read an easy or short passage until they reach a set reading rate.

Rasinski (1990) conducted a comparative study on the two variations of RR, assisted versus unassisted, and concluded that the two variations are equally effective in terms of improving the students’ reading fluency.

The studies reviewed shared a common goal—to increase the fluency of the slow and halting reader, and a common strategy was used—rereading a meaningful passage until oral production was fluid, flowing and facile (Dowhower, 1987). In addition to practice, according to Wolf, Miller and Donnelly (2000), “speed” is prompted as an important factor to reach automaticity, which is referred to as doing something fast and without thinking. RR may help students move from the accurate but non-automatic level to the accurate and automatic level (Samuels & Laberge, 1983). The subjects were required to read through the text at least four times to reach the effect of repeated reading (Bowers, 1993; O’Shea et al., 1985). Kuo (2004, 2006) further suggests reading an unfamiliar word five times non-stop, as fast as possible, to demonstrate automaticity. For phrases, Kuo suggests reading them as fast as possible and making them into a unit. As we can see, these are easy and widely adoptable techniques for detecting students’ mastery of automaticity on words or phrases. Therefore these techniques have been adopted in this paper with a view to aiding the students to break through the barrier of coding or naming.
The applicability and effect of RR has been widely explored and is well acknowledged. It directly targets oral reading fluency (Dowhower, 1987; Rashotte & Torgesen, 1985; Young & Bower, 1995) and proves to be helpful for student’s oral speaking ability (Chen, 2003), and can easily be integrated in an existing reading program (Therrien & Kubina, 2006). Since the time of Huey (1968), RR has been implemented in Western countries for about one hundred years, yet it has not won a great popularity in Asia (Taguchi, 1997), at least not in Taiwan.

**Repeated Reading and Its Transfer Effect**

Dowhower (1987) contends that transitional readers’ rate, accuracy, comprehension, and prosodic reading have been improved when RR is used. Samuels (1979) finds that with accumulated learning progress, starting rates are faster with each new selection and less RR practice is necessary to reach goals. This indicates that transfer occurs in general reading fluency. Improvements in textual reading for L1 readers with regard to reading rate and accuracy were carried over to a new unpracticed passage (Carver & Hoffman, 1981; Dowhower, 1989; Faulkner & Levy, 1994; Herman, 1985; Rashotte & Torgesen, 1985; Samuels, 1979). Dowhower (1989) also proposes gains in RR practiced passages transfer to unpracticed but similar passages. It was also found that RR had a cumulative vocabulary effect that helped to build a bank of sight words. While some research supports the transfer effect of RR, others hold the opposite view. As Rashotte and Torgesen (1985) note, unless the degree of overlapping vocabulary between the passages is high, the transfer of reading gains to new unpracticed material is minimal in terms of reading rate.

**Relevant Previous Research**

While RR has received considerable attention in English L1 settings, less attention has been paid to research on RR in English as an L2 or in EFL settings although some studies exist. Taguchi (1997) examined the effects of RR on the English oral and silent reading rates of fifteen Japanese college students, at beginning to intermediate levels. They met three times each week over a ten-week period. The results indicated their silent reading rates increased significantly but not their oral skills. When they were asked to read new passages, they did not show transfer effect on increased reading rates, neither silently nor orally. Taguchi reasons that the lack of improvement is due to the fact that Japanese society is an EFL learning environment and that the intervention time (ten weeks) is too short. In Taiwan, Chen (2003) discusses her results obtained from the experiments on one, choral reading, in Taiwan. Chen finds that students made no significant improvements on their oral reading ability after four-month’s intervention period with four periods per week.

**Method**

**Research Questions**

The present study was to verify the effect and efficiency of RR on oral reading fluency in the EFL environment of Taiwan among the university students.
1. What is the difference between the mean overall post-test WCPM and pre-test WCPM, of the college students who received repeated reading intervention? Can the transfer effect of repeated reading be achieved in the EFL environment in Taiwan?

2. Can students achieve automaticity through repeated reading instruction?

3. What is the applicability of repeated reading regarding the following factors related to the background and learning conditions of the students:
   a. Gender
   b. Native language (Mandarin; Taiwanese)
   c. Time on learning/using English during off-training time
   d. Performances in the pre-test
   e. Improvement gained during the practice (Week 8-Week 1)

Subjects
With the initial enrollment of 112 college students, only 51 of them were recognized as qualified subjects. They were enrolled in a freshman English class at Tamkang University, Taiwan. All of them were majoring in Statistics/International Trade and aged from 18 to 22 years old (mean = 19). They had at least six years of English learning experience. Before the experiment, they completed the Pre-Implementation Questionnaire to ensure that they agreed to attend the study and to assess their basic personal and language backgrounds. The qualified subjects had to be able to read with a minimum speed of 45 words per minute (WPM) (Dowhower, 1987), return their cassettes with at least five recordings out of a total of eight, and complete recordings of the pre-test, post-test, Pre-implementation Questionnaire and Post-implementation Questionnaire.

Instruments
The Pre-implementation Questionnaire was divided into two parts: Part I was about the students’ general backgrounds, and Part II about their language backgrounds. Both parts were adapted from Huang (2006). Based on the collected questionnaire sheets, those who used and learned English for more than 10 hours per week besides their normal class time were eliminated from the study, in order to prevent unexpected influence on the results.

The Post-implementation Questionnaire had only one part. Question 1 was about the students’ length of time spent in learning and using English. Question 2 was about their opinions on their performance in this course. Both questions were adapted from Huang (2006). Question 3 elicited further information from the students.

Inter-rater reliability. The raters included the researcher herself and two master’s level students at Tamkang University. The inter-rater reliability was assessed by the Kruskal-Wallis Test and the result was showed in Table 1 (Chi-Square= .102, p > .05). Descriptive statistics of their ratings for errors (subjects’ accuracy rates) are presented in Table 2, revealing a high coherence.
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Table 1. Inter-Rater Reliability by Kruskal-Wallis Test, in terms of WCPM

<table>
<thead>
<tr>
<th></th>
<th>Pre-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>.102</td>
</tr>
<tr>
<td>df</td>
<td>2</td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td>.950</td>
</tr>
</tbody>
</table>

*p< .05; Grouping Variable: Scorer

Table 2. Inter-Rater Reliability: Descriptive Statistics of Correct Rate (Accuracy) of the Pre-Test

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct %Pre-Test—ScorerA</td>
<td>51</td>
<td>86%</td>
<td>98%</td>
<td>95.22%</td>
<td>2.353%</td>
</tr>
<tr>
<td>Correct %Pre-Test—ScorerB</td>
<td>51</td>
<td>86%</td>
<td>99%</td>
<td>94.15%</td>
<td>3.008%</td>
</tr>
<tr>
<td>Correct %Pre-Test—ScorerC</td>
<td>51</td>
<td>86%</td>
<td>99%</td>
<td>93.63%</td>
<td>2.634%</td>
</tr>
<tr>
<td>Mean Correct Rate Pre-Test (%)</td>
<td>51</td>
<td>89%</td>
<td>97%</td>
<td>94.35%</td>
<td>2.188%</td>
</tr>
</tbody>
</table>

Recorders of Language Laboratory in Tamkang University were used to record the students’ oral reading of the pre-test, the post-test, and those at the end of each intervention session.

A Repeated Reading Tracking Sheet was adapted from the documented sample repeated reading tracking sheet (Therrien & Kubina, 2006). It was used to assess the performance of all subjects. Test passages, total words read, reading time and errors were all recorded for the final counting of words correctly read per minute (WCPM), as oral reading speed.

Pre-Test and Post-Test Reading Materials consisted of two passages, each of 100 words (10% plus or minus) in length, and they were chosen from Chapter One of A 20-Year-Old Bride by Lian (1993), one for the pre-test, and the other for the post-test. Both were rated level seven according to Fry’s readability assessment (1968).

Reading Materials

Passages from Chapter One of Speak up to Tammy (Lian, 2001), a story book at the beginner level were used. The content was about daily life, and was easy to read. New passages were chosen for each session in the eight intervention weeks. These chosen materials were considered qualified, meeting the established criteria that 100 words to be read within two minutes with 85% accuracy (Therrien & Kubina, 2006). The beginning materials were set at the same level of that of the beginning instruction, and rate/difficulty increased (as measured by Fry’s readability levels). As suggested by Samuels (1979), the readability levels were then increased by +1 for every two weeks, to meet students’ improvements and latest needs. To assess the subjects’ improvements during the intervention weeks, materials from Week 1 and Week 8 were different passages from the same article, both leveled at 6 on Fry’s Readability scale (see Table 3). The training speed
was set from slow to intermediate, to fast, and again back to slow, as suggested in Kuo (2004).

**Table 3. Materials of Fry’s readability**

<table>
<thead>
<tr>
<th>Time</th>
<th>Level of Fry’s Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Paragraph</td>
<td>6</td>
</tr>
<tr>
<td>Pre-test</td>
<td>7</td>
</tr>
<tr>
<td>Week 1</td>
<td>6</td>
</tr>
<tr>
<td>Week 2</td>
<td>7</td>
</tr>
<tr>
<td>Week 3</td>
<td>7</td>
</tr>
<tr>
<td>Week 4</td>
<td>8</td>
</tr>
<tr>
<td>Week 5</td>
<td>8</td>
</tr>
<tr>
<td>Week 6</td>
<td>9</td>
</tr>
<tr>
<td>Week 7</td>
<td>9</td>
</tr>
<tr>
<td>Week 8</td>
<td>6</td>
</tr>
<tr>
<td>Post-test</td>
<td>7</td>
</tr>
</tbody>
</table>

**Procedures**

Each intervention was 30 minutes long. During the first 10 minutes the instructor played a recording of the reading once for the class; the subjects were asked only to listen. The researcher then briefly reviewed a few new words, phrases and the texts. At the same time, word or phrase drills were introduced, if necessary. The subjects were encouraged to ask any questions about the materials for better understanding. In the second part, the instructor played the text twice and the subjects were encouraged to read aloud as they listened. In the last part, the subjects did individual, unassisted repeated reading for ten minutes. If they had difficulties reading them smoothly, they were instructed to do drills on words, phrases, or sentences until they could read them fluently. The instructor supervised the subjects and helped with miscues on any words, phrases, or sentences. The subjects were required to read through the text at least four times to reach the effect of repeated reading (Bowers, 1993; O’Shea et al., 1985; Therrien, 2004;), and five times non-stop for difficult words or expressions (Kuo, 2004). Meanwhile, the researcher kept encouraging students to read quickly, to the extent of reading without thinking much. Finally, for the remaining time, the subjects were asked to read the materials again and make recordings on cassettes.

**Data Analysis**

The recordings of the subjects were listened to and rated by the three scorers. WCPM and accuracy from the pre-test, post-test, and eight intervention weeks served as quantitative data. The responses of the Pre-implementation Questionnaires and the Post-implementation Questionnaires were considered qualitative data, which provided
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qualitative details for a more hypothetical explanation of the quantitative findings. All the data were analyzed with the computer program Statistical Package for Social Science (SPSS version 11.0).

Applying the formulas put forth by Felton (2003), the two variables, WCPM, an indicator of speed, and accuracy, also known as Correctness Rate, were calculated as the following:

\[
\text{WCPM: } \frac{\text{WC} \times 60}{\text{t sec}}, \text{ where WC = No. of words read correctly, and t sec = total seconds}
\]

\[
\text{ACCURACY: } \frac{\text{WC}}{\text{Wds}} = \% \text{ accuracy, where Wds = total No. of words in passage, and WC = No. of words correctly read}
\]

The average WCPM and accuracy rates of these collected recordings were then calculated by paired sample t-tests with the level of significance set at \( p < .05 \) to assess if there were any significant differences between the pre-test, the post-test, and if there were any improvements during the eight intervention weeks. To specify the effect of the intervention session, the effect size was calculated by the results of the pre-test and the post-test.

\[
\text{effect size: } \sigma_{\text{pooled}} = \left[ \frac{(\sigma_1^2 + \sigma_2^2)}{2} \right]
\]

A regression analysis was then used to test the correlations of the subjects’ total improvement with the following five factors: (1) gender, (2) native language (Mandarin; Taiwanese), (3) out-of-class time learning/using English, (4) WCPM in the pre-test, and (5) improvement gained in WCPM during the practice (Week 1-Week 8).

**Results and Discussion**

**Fluency in Pre-test and Post-test**

As shown in Table 4, the mean WCPM of the subjects 130 in the pre-test was and 211 in the post-test, and this verified that the intervention led to a positive influence on the subjects’ performance in terms of speed.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td>130</td>
<td>51</td>
<td>30.960</td>
<td>4.335</td>
</tr>
<tr>
<td>Post-Test</td>
<td>211</td>
<td>51</td>
<td>37.414</td>
<td>5.239</td>
</tr>
</tbody>
</table>

\*\( p < .05 \)

Table 5 shows that the differences between the pre-test and the post-test, or the average of their improvement in WCPM, was 81, as shown by the 95% Confidence Interval, which was highly significant (\( t = 20.985, \ p < .01 \)). The improved WCPM was more than half of the mean WCPM of the pre-test (130/2 = 75).
Table 5. Comparison of the subjects’ performance between the pre-test and the post-test (WCPM)

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Test - Pre-Test</td>
<td>81</td>
<td>27.888</td>
<td>74.10</td>
<td>89.79</td>
<td>20.985**</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

**p<.01

The effect size of the intervention (ES = .76) suggests the RR in this study led to an intermediate to large scale of influence (Cohen, 1988). The training method used in the experiment was highly effective in terms of increasing the oral reading speed.

It is noticeable that this result was in line with previous studies by Mercer et al. (2000), and Dowhower (1987), supporting RR’s effect on reading rates, but was in contradiction to that of Taguchi (1997) and Chen (2003). It suggests RR is both able to improve students’ oral reading rate and achieve a transfer effect in an EFL environment. Tables 4 and 5 show the transfer effect of RR (from practice passages to exam passages), which were in line with previous studies of L1 readers (Carver & Hoffman, 1981; Chomsky, 1976; Dowhower, 1987; Meyer & Felton, 1999; Samuels, 1979; Young, Bowers, & MacKinnon, 1996), since the materials for practice and for the pre-test and post-test were from different publications.

As shown in Table 6, the mean accuracy rate of the subjects was 94% in the pre-test and 96% in the post-test; both passed the criterion rate (85%) for qualified reading accuracy set by Therrien and Kubina (2006). This confirmed the validity of data shown in Table 2. This result also indicated that RR had a small-scaled positive influence on the subjects’ Accuracy Rate (2%).

Table 6. Descriptive Statistics of Pre-Test Accuracy Rate (%)

<table>
<thead>
<tr>
<th>Correct Rate (%)</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td>94%</td>
<td>51</td>
<td>2.188%</td>
<td>.306%</td>
</tr>
<tr>
<td>Post-Test</td>
<td>96%</td>
<td>51</td>
<td>1.145%</td>
<td>.160%</td>
</tr>
</tbody>
</table>

Regression Analysis

This section presented the factors for the subjects’ improvement from the pre-test to the post-test. Factors analyzed in the regression model included (1) gender, (2) native language, (3) out-of-class time on learning/using English, (4) pre-testWCPM, and (5) improvement in WCPM during the practice (Week 1-Week 8). As shown in Table 7, the results of the regression analysis indicate that the improvement during the practice (WCPM of Week 1 - Week 8) was the only factor that significantly predicted the improvement from the pre-test to the post-test (t = 8.067, p < .01). The figures accentuated students’ effort during the RR, which was recognized as an essential factor for their progress, while their other language backgrounds had no significant influences on the progress.
Table 7. Regression Table of all Possible Factors

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>(Constant)</td>
<td>23.431</td>
<td>20.578</td>
<td>1.139</td>
</tr>
<tr>
<td>Week 8 - Week 1</td>
<td>.864</td>
<td>.107</td>
<td>.768</td>
</tr>
<tr>
<td>Pre-Test</td>
<td>-.068</td>
<td>.086</td>
<td>-.078</td>
</tr>
<tr>
<td>Gender</td>
<td>4.122</td>
<td>5.686</td>
<td>.067</td>
</tr>
<tr>
<td>Native Language</td>
<td>6.073</td>
<td>6.627</td>
<td>.087</td>
</tr>
<tr>
<td>Off-Class Time Using/ Learning English</td>
<td>.810</td>
<td>3.721</td>
<td>.020</td>
</tr>
</tbody>
</table>

***p<.001

Answers to the Research Questions
Based on the results obtained from this study, the questions addressed in this study can be answered as follows:

(1) Effects of repeated reading (RR) on WCPM and accuracy
According to the results obtained, it was apparent that the college students who received oral RR training had made significant improvements in their speed (fluency). As shown in Table 5, their improvement was an average of 81 WCPM ($p < .05$), from 130 to 211 WCPM, suggesting an intermediate to large effect size (ES= .76) over the intervention period of eight weeks. Fluency in this study was measured by its two component aspects: WCPM and accuracy. In summary, the students’ fluency had been greatly improved, with a large contribution coming from the improved Reading Rate (81 WCPM increase) and a small contribution coming from accuracy (2% accurate rate increase). The small gain might be due to ceiling effects.

The transfer effect of RR
As shown in Tables 4 and 5, the results indicated a transfer effect from RR was achievable even in an EFL environment. The data in Table 4 and Table 7 provided a reference tool for prediction in the transfer effect. This conclusion further confirmed the transfer effect could also be achieved in EFL environments, which contradicted the results of Taguchi (1997).

(2) Automaticity achieved through RR instruction
According to Table 4, the subjects finally reached an average oral reading rate of 211 WCPM, which passed the set rate of automaticity (200 WCPM). Thus, RR proved to be a successful method for helping learners to reach their automaticity in oral reading fluency.

The results upheld oral reading fluency proposed by previous studies (Dowhower, 1987, 1989; Faulkner & Levy, 1994; Herman, 1985; Rashotte & Torgesen, 1985; Samuels,
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1979), as well as the importance of fluency instruction on automaticity, which was stressed by Allington (1983), Yoshimura (2000) and Kuo (2004). Automaticity was a crucial factor for students in EFL environments, such as Taiwan. From Table 7, Off-Class Time Learning/Using English proved to be an ineffective factor for predicting the students’ improvement when receiving RR instruction. The subjects used English out-of-class for 1-2 hours or less. This indicated that with a weekly instruction of 30 minutes for eight weeks, they achieved the observed improvement in an EFL environment with none or little practice outside the classroom.

This study, like the one by Chen (2003), suggested a crucial element of RR, speed, which was also stressed by Wolf, Miller and Donnelly (2000) and Kuo (2004). It suggested that the main focus of RR was not “repeat”, but “speed”. RR was the process leading to an accelerated speed. “Speed” led to “automaticity”, which contributed to oral reading fluency. An adequate oral reading fluency could then be expected to serve as the base for students’ future speaking ability. This suggested that RR could render hope for language learners with unsatisfactory prior language conditions to attain advanced fluency as well as reach automaticity, even in an EFL environment. Oral RR can not only increase learners’ oral reading skill, but also help them with their speaking ability. In sum, like other studies (Chen, 2003; Kuhn & Stahl, 2003), this study suggests that RR could serve as a pedagogical method for fluency training.

(3) RR and other background and learning conditions
As shown in Table 7, the results of the statistical analysis showed that there were no significant relationships between the subjects’ total improvement and their Gender, Native Language, Time Learning/Using English during Off-Training Time, or the WCPM of the pre-test ($p > .05$). Combining the data obtained, we conclude that oral RR was highly effective for subjects who worked hard during the training, regardless of the previous mentioned conditions about their other language backgrounds.

Other Discussion
From the students’ response to Question 2 of the Post-Implementation Questionnaire (“After this course, do you consider your English speaking improved?”), it was clear that most subjects considered that they had made moderate improvements after the training (mean = 3, mode = 3, total scale = 5). Of the 51 students, 4 students considered they had made “great improvement”; 15, “good improvement”; 20, “average improvement”; 12, “a little improvement”; no one chose “no improvement”. This result suggested the students had confidence on the effect of RR and held a positive attitude toward it. This is verified by their response to Question 3 of the Post-Implementation Questionnaire (“Will you want to take further levels of this course in the future?”); 47 of the 51 subjects were willing to take advanced courses on RR training. This positive feedback suggested RR was well received by the students.

While this study might serve as a reference for future English speaking teaching, there were still a number of limitations. First, due to the limited time and restricted school schedule, the intervention lasted for only eight weeks. The treatment was administrated
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once every week for about 30 minutes, as an extensive course. Future researchers are suggested to extend the intervention period, or to make it a more intensive course. Second, although the students’ baselines in this study showed no significant statistical differences influencing their total improvement in oral reading speed, more work needs to be administered to assess the relationship between subjects’ baselines and their potential for improvement. Finally, further explorations among subjects of diversified education backgrounds, nationalities as well as ages in EFL environments are encouraged to assess the applicability of repeated reading.

References


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