Improving reading rates and comprehension through audio-assisted extensive reading for beginner learners

Anna C.-S. Chang [a, *], Sonia Millett [b]

[a] Hsing-Wu University, Taiwan
[b] Victoria University of Wellington, New Zealand

A B S T R A C T

The study investigated the effect of audio-assisted reading on reading rates and comprehension. Sixty-four year-10 secondary EFL students received a treatment of either silent reading (SR) or audio-assisted reading (AR) over a 26-week period for 90 min each week. They read a total of 20 graded readers, 10 at level one and 10 at level two. A pre-test, a post-test, and a three-month delayed post-test were administered to all participants. The test results show that both groups improved their reading rates and their comprehension levels, and the improvement was maintained for up to three months without further treatment. However, the audio-assisted reading group's improvement in reading rates and comprehension levels was substantially higher than for the silent reading group. Reasons for the higher gains of the audio-assisted reading group are explained and pedagogical implications of the study are discussed.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

Fluent reading is an important skill, firstly, in academic settings, where students may be assigned a large amount of reading materials to finish in a short period of time, and, secondly, in the context of modern technology where the massive amount of information available requires effective reading skills to cope with it. In addition, reading fluency has also been found to be associated with reading comprehension in a number of L1 research studies (see Kuhn & Stahl, 2003; for a review), and it is defined by Samuels (2006) as "decoding and comprehension at the same time" (p. 9). Decoding involves several components, such as rapid and automatic orthographic and phonological word recognition, syntactic parsing, and meaning proposition encoding, whereas comprehension includes drawing on prior knowledge, making inferences, critically evaluating the information being read and using strategies to understand text meaning. While fast and accurate word decoding does not mean comprehension has been achieved, comprehension cannot be achieved without rapid and correct word recognition (Grabe, 2009). In fluent reading, all of these cognitive processes must work together synchronizing in time (Breznitz, 2006). However, for L2 learners, some of these processes may be more automatic, while others may need more controlled attention (cf. Lim & Godfroid, 2014). According to automaticity theory, if a reader has to do all these tasks consciously at the same time, then one or more components are likely to suffer due to the limited capacity of working memory. Automaticity theorists suggest that making one or two components automatic may allow readers to pay more attention to other tasks in the reading

---

* Corresponding author. Department of Applied English, Hsing-Wu University, #101, Section 1, Feng-Liao Road, Linkou, New Taipei, Taiwan. Tel./fax: +886 2 2603 4604.
E-mail address: annachang@livemail.tw (A.C.-S. Chang).

process (LaBerge & Samuels, 1974). For example, if individuals have done a considerable amount of practice on the form and meaning of high-frequency words, they will be able to recognize the words more quickly and decode the meanings more accurately and therefore more cognitive resources can be devoted to comprehending the text. When fluency is developed, the amount of reading is likely to increase, and this may in turn lead to a higher level of comprehension.

Several activities have been used to develop students' reading rates, such as rate buildup reading, repeated reading, class paced reading, self-paced reading (see Anderson, 1999 for a detailed description of each activity), and timed reading, where students read passages with similar word counts, and record the time spent on reading each text (Chang, 2010, 2012; Chung & Nation, 2006; Walczyk, Kelly, Meche, & Braud, 1999; Yen, 2012). These approaches have a clear goal of improving reading fluency and readers or students can easily detect whether their reading rate has improved. Apart from the above methods, another approach is extensive reading (ER) — the focus of the present study. However, the use of ER in improving reading fluency has received less attention than its effects on the general language improvement of L2, such as improving reading comprehension or vocabulary knowledge. The major reason could be that fluent reading is often not a goal for L2 reading; rather, reading is used mainly for developing vocabulary and grammar knowledge and reading skills (Grabe, 2009). To shed additional light on how ER can improve reading fluency, more research is needed. In the following, firstly, what literature has demonstrated up to the present will be reviewed, then the gaps in the field that this study will fill will be outlined.

2. Review of literature

2.1. Improving reading rate and comprehension through extensive reading

Extensive reading, as the name suggests, refers to reading a large volume of texts. However, there is no absolute standard for determining how much reading can be regarded as "extensive". From the point of view of learning vocabulary through extensive reading, a rule of thumb is reading one graded reader per week, so that learners will have opportunities to meet the words again before their memory fades (Nation & Wang, 1999). However, the question remains: How many books should one read over what period of time to see the effects of ER on reading fluency? A review of the ER literature shows there is no definite answer to this question. As shown in Table 1, research results from previous studies on reading rate and comprehension can be summarized as follows:

a. The treatment periods ranged from a minimum of seven weeks (Iwahori, 2008) to one year (Robb & Susser, 1989), but the length of treatment did not seem to affect the improvement of reading speed linearly. Reading more in a shorter time seems to be more effective than if the treatment is spread over a longer period.

Table 1
Selected studies (by year) on developing reading rates and comprehension through extensive reading.

Study	Context/participants	Quantity of books read[c]	Treatment period	Rates Pretest—posttest (wpm)	Comprehension
Robb and Susser (1989)	Japan/62 university students	A minimum of 500 pages	A year	ER: 79 − 87 IR: 79 − 77	ER > IR
Bell (2001)	Yemen/14 Adults	Not reported	36 h (two semesters)	ER: 68 − 128 IR: 78 − 93	ER > IR
Sheu (2003)	Taiwan/65 junior high students	Not reported	32 weeks/45 min per week	GR: 60 − 96 BNESC: 99 − 136 CL: 85 − 119	GR, BNESC > CL
[a] Taguchi et al. (2004)	Japan/10 university students	205 pages	12 − 15 h (17 weeks)	ER: 81 − 64 RR: 85 − 82	n/s, but ER > RR
Iwahori (2008)	Japan/33 junior high students	Not sure, but 28 books was the goal	7 weeks	ER: 84 − 113	Not available
Yamashita (2008)	Japan/31 university students	11 graded readers	15 weeks	Not available	Significant gain
Al-Homound and Schmitt (2009)	Saudi/47 university students	No exact figures reported	10 weeks	ER: 60 − 94 IR: 62 − 88	No difference
[b] Beglar et al. (2012)	Japan/97 university students	Varied	A year	ER 1: 90 − 98 ER 2: 95 − 107 ER 3: 103 − 120 IR: 88 − 91	n/s

Note: wpm: words per minute; ER: extensive reading; IR: intensive reading; RR: repeated reading; GR: reading graded readers group; BNESC: reading books for native English speaking children; CL: control group.
[a] This is the only study adopted audio-assisted reading.
[b] Beglar et al. (2012) calculated the reading rates by standard words, referring to every six character spaces is counted as one word.
[c] Quantity of books reported here focused on the extensive reading group.