

Gains in College Students from Reading Fluency Interventions

In 2012, 48% of students entering American colleges and universities did not meet the reading benchmark for college readiness (ACT, n.d.). Therefore, we must consider interventions and support structures which mitigate these literacy gaps and support their success. This inquiry examines support structures for the development of reading skills through fluency training interventions (e.g., Repeated Reading or RR and Wide Reading or WR fluency programs) on a group of struggling college readers' component skills of word recognition and vocabulary.

Methods

A pretest, intervention, posttest design with treatment and control conditions was utilized. Thirty students enrolled in a developmental reading course at a 2-year community college in the Southeast were recruited. Initial assessments showed the sample reading on average at the 8.7th grade level on Nelson-Denny Reading Comprehension (Brown, Fishco, & Hanna, 1993). Measures of vocabulary knowledge (Nelson-Denny Vocabulary Subtest) and sight word and decoding efficiency (Test of Word Reading Efficiency or TOWRE; Torgesen, Wagner, & Rashotte, 1999) were administered to the sample who were participants in a larger study. The majority of the sample was female (80%) and African American (53%).

Random assignment of participants resulted in 11 students in the RR condition, nine students in the WR condition and 10 students in the Vocabulary Study (VS) control condition. Non-native English speakers (n=9) were evenly distributed across the conditions. The training was incorporated into independent work in the context of regular classroom instruction during the nine sessions of a summer term. Table 1 below lists the specific training procedures:

Table 1. Procedures

RR	Read one grade-level passage silently four subsequent times . Answer comprehension questions.
WR	Read four grade-level passages silently, each once . Answer comprehension questions.
VS	Study 15 academic words/definitions. Take a quiz. Create a word card for each word missed on the quiz.

Reading passages were drawn from the appropriately leveled *Timed Readings* (Spargo & Williston, 1975), a series “designed to provide plentiful practice in building reading speed—and comprehension—using graded selections of standard word length” (p. 7). The series covers topics of ordinary knowledge in 400-word passages accompanied by comprehension questions in multiple-choice format.

Results

The following table shows students' Nelson Denny and TOWRE pretest scores.

Table 2. Groups' Pretest Scores

	ND Reading Comprehension		ND Vocabulary		TOWRE Sight Word Efficiency		TOWRE Phonemic Decoding Efficiency	
	<i>Mean</i>	GL	<i>Mean</i>	GL	<i>Mean</i>	GL	<i>Mean</i>	GL
RR	31.27	8.1	38.55	9.5	81.4	8	27.4	3.6
WR	34	8.7	37.67	9.5	88.46	9.8	27.89	3.6
VS	36	9.2	33.4	9.3	74.67	6	25.78	3.4

Note. GL = Grade Level; RR = Repeated Readings; WR = Wide Reading; VS = Vocabulary Study.

The groups were statistically comparable on the pretest measures (All F 's < 1). Repeated Measures analyses were performed with time (time 1 to time 2) as the within subjects variable and group (RR, WR, VS) as the between subjects variable. No significant main or interaction effects were observed on reading comprehension and measures of word recognition (TOWRE SWE and PDE). On the vocabulary measure, only a significant time main effect was observed, $F(1,27) = 16.145$, $p < .001$, $\eta^2 = .374$. Overall time 2 vocabulary performance ($M = 41.832$; $SE = 1.653$) was significantly greater than time 1 performance ($M = 36.537$; $SE = 1.375$) across all groups. There were no interaction effects. The RR students answered 3.73 more vocabulary items correct at posttest ($M = 42.27$) than pretest ($M = 38.55$); this difference was not significant, $t(10) = -1.818$, $p = .099$. WR group's vocabulary gain of 5.5 words from pretest ($M = 37.67$) to posttest ($M = 43.22$) was statistically significant, $t(8) = -2.399$, $p = .043$, $d_z = 0.79$. Vocabulary Study control condition achieved the largest vocabulary gain with 6.6 more vocabulary items correct at posttest ($M = 40$) than pretest ($M = 33.4$) at $t(9) = -2.674$, $p < .05$, $d_z = 0.85$.

Discussion

There were no significant gains other than those observed in vocabulary from the WR and VS conditions. WR group's vocabulary gains indicates that broader exposure to words in varied contexts likely leads to greater vocabulary acquisition compared to repeated exposure to a smaller amount of text. This finding of vocabulary gains from wider exposure to print supports carefully designed sessions of wide reading in college reading classrooms using effective instructional components and instructional level, high interest reading material. The significant VS gains in vocabulary, on the other hand, appear to be due to the focused vocabulary study that this group was engaged in.

Because the fluency training was conducted silently, students did not necessarily engage in focused processing of challenging words and did not receive corrective feedback on unfamiliar words. This may be a reason participants did not improve their efficiency of reading words and non-words in isolation.

Finally, there were no gains in reading comprehension scores. A longer WR intervention could have resulted in comprehension gains given the vocabulary gains observed in this condition from

just three weeks. However, lack of gains from RR training should stimulate more research into the effectiveness of this practice with struggling college readers. Overall, these findings offer insights into the effects of literacy interventions on college reading development and could contribute to the national conversation related to supporting incoming college students with reading comprehension, word recognition, and vocabulary.

References

- ACT. (n.d.). *The condition of college and career readiness 2012: College readiness benchmarks by subject*. Retrieved from:
<http://www.act.org/research/policymakers/cccr12/readiness1.html>
- Brown, J. I., Fishco, V. V., & Hanna, G. (1993). *The Nelson-Denny Reading Test*. Chicago, IL: Riverside.
- Spargo, E., & Williston, G. R. (1975). *Timed readings*. Providence, RI: Jamestown Publishers.
- Torgesen, J. K., Wagner, R. K., & Rashotte, C. A. (1999). *Test of Word Reading Efficiency*. Austin, TX: PRO-ED Publishing, Inc.