



**Research Abstract II: Does Singing Improve Reading?
Using an Interactive Singing Program with Struggling Readers Grades 4 – 12:
A comparison study of reading progress**

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This is Abstract II in a series of three abstracts reporting research results from studies using a learn to sing software program with struggling readers. Abstract I presents results from the initial middle school Pilot Study (October 2004- May 2005) which includes sustainability data. The current abstract (Abstract II) presents results from the Fall Study (October 2005- January 2006) grades 4 through 12 in five school sites. Abstract III will present research results from the Spring Study (March 2006 – May 2006) grades 4 through 12 in seven school sites.

Introduction

Last year (2004-2005) an initial pilot study using software that teaches users to sing in tune and in rhythm while providing real-time pitch-tracking found that middle school struggling readers improved more than 1 grade level in nine weeks of implementation. Based on these results, an expanded study sought to explore the effects of the same software with struggling readers at the elementary, middle, and high school levels.

The software program, SingingCoach Version 2.0 (Electronic Learning Products, Inc., www.elpcorp.com) was originally developed to improve the singing of children and adults. SingingCoach was used in this study to determine its effect on the reading fluency and comprehension of struggling readers.

Study Methodology

The 2005-2006 studies from 7 school sites and 3 school districts are being completed in two Phases. Fall (Phase 1) includes 236 students from 5 sites in 3 school districts. All sites utilized a treatment/control pre/post design. All students participating in the study had been identified as struggling readers based on failing the reading portion of the Florida Comprehensive Assessment Test (FCAT). Students in treatment and control groups were matched by grade level, reading teacher, FCAT level, gender, and SES (as evidenced by free and reduced lunch).

At the elementary and middle school levels, the treatment students used the music software three times per week for nine weeks. At the high school levels the treatment students used the software twice a week for 45 minutes for nine weeks. The change to 45

minutes twice a week at the high school level was due to the need for continuous process evaluation by the researchers.

The Spring or second phase of the 2005-2006 studies is currently in progress. Approximately 200 students are participating in this phase of the study, representing 7 sites (2 elementary schools, 3 middle schools, and 2 high schools). Half of the sites are using a two-treatment design with random assignment. In the Spring Study we are more closely examining results from subgroups (ESE, ESOL, etc.)

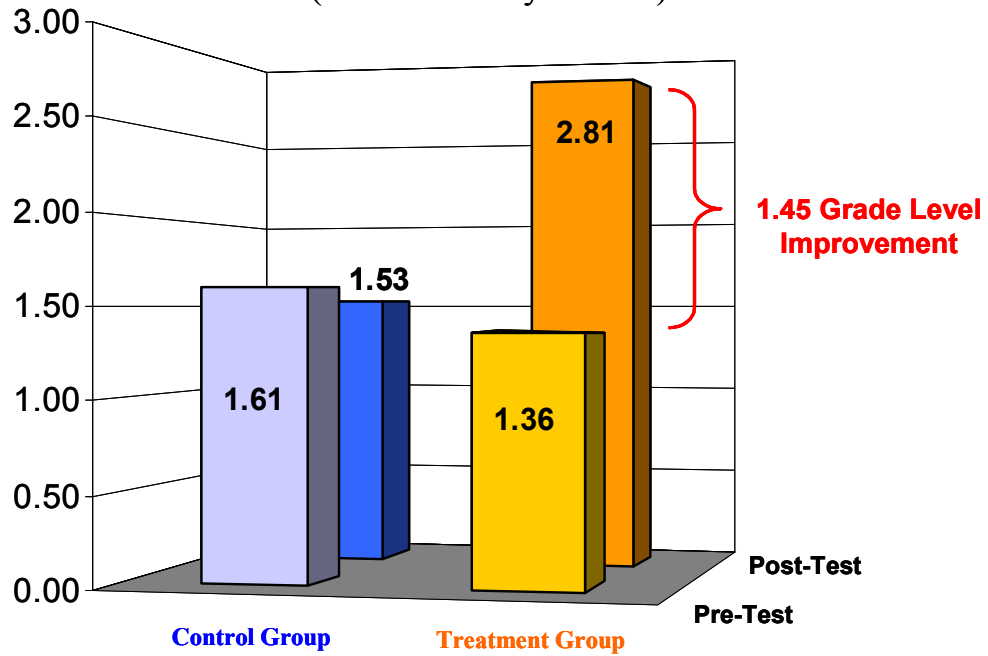
Reading Level Assessment

Pretests and posttests were administered to all 236 treatment and control students. The assessment used was the Qualitative Reading Inventory (QRI), an informal reading inventory, with passages ranging from 1st to 12th grade levels. The reliability, validity, and readability levels of all passages have been investigated and are reported in the QRI technical development section of the inventory (Leslie & Caldwell, 2000). The researchers administered all assessments. Both treatment and control students were assessed twice, at the beginning and end of the 9-week study period.

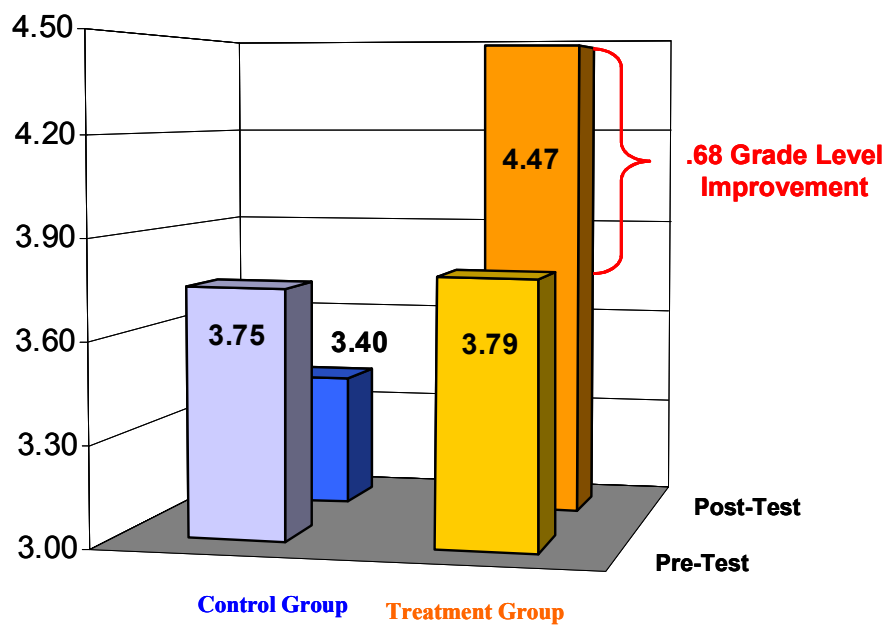
Results after 9-week Study

	Control Group				Treatment Group			
		Extrapolated Reading Grade Level:				Extrapolated Reading Grade Level:		
School	# of Students	Pre-Test	Post-Test	Change	# of Students	Pre-Test	Post-Test	Change
EL#1	23	1.60	1.49	(0.11)	23	1.46	2.74	1.28
EL#2	8	1.63	1.63	0.00	9	1.11	3.00	1.89
MS	23	3.75	3.40	(0.35)	23	3.79	4.47	0.68
HS#1	37	6.10	6.40	0.30	41	5.31	7.05	1.74
HS#2	21	6.91	7.10	0.19	28	6.38	7.20	0.82
TOTAL	112	4.00	4.00	0.01	124e	3.61	4.89	1.28

Elementary School Results (two elementary schools)

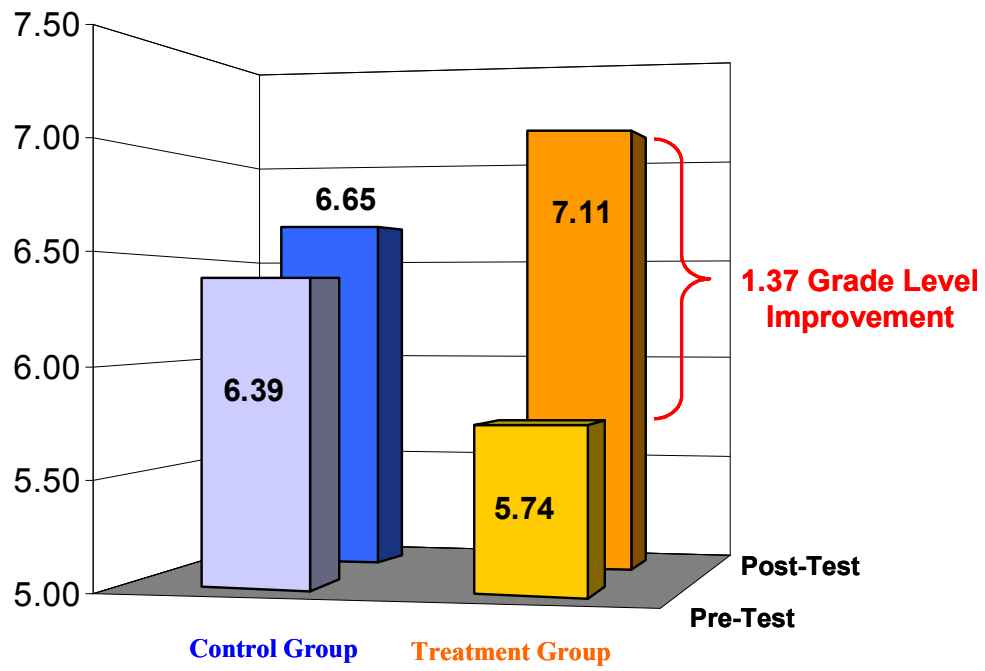


Middle School Results (one middle school)



High School Results

(two high schools)



Elementary School Fluency

Control Students					Treatment Students						
	Pre-Test Grade	Pre/WPM	Post-Test Grade	Post/WPM		Pre-Test Grade	Pre/WPM	Post-Test Grade	Post/WPM		
1	2	83 wpm	2	66 wpm	1	1	53 wpm	4	83 wpm		
2	2	90 wpm	2	90 wpm	2	2	93 wpm	4	99 wpm		
3	2	62 wpm	2	67 wpm	3	1	58 wpm	3	89 wpm		
4	2	83 wpm	2	66 wpm	4	1	99 wpm	3	110 wpm		
5	2	76 wpm	2	77 wpm	5	1	51 wpm	2	51 wpm		
6	1	44 wpm	1	53 wpm	6	1	53 wpm	2	49 wpm		
7	2	67 wpm	2	71 wpm	7	1	51 wpm	4	93 wpm		
8	2	73 wpm	2	79 wpm	8	1	67 wpm	2	79 wpm		
9	1	59 wpm	1	51 wpm	9	1	73 wpm	3	85 wpm		
10	1	60 wpm	1	59 wpm	10	1	47 wpm	2	51 wpm		
		70 wpm			68 wpm			65 wpm			79 wpm

Middle School Fluency

Control Students					Treatment Students						
	Pre-Test Grade	Pre/WPM	Post-Test Grade	Post/WPM		Pre-Test Grade	Pre/WPM	Post-Test Grade	Post/WPM		
1	4	85 wpm	4	87 wpm	1	4	85 wpm	5	94 wpm		
2	4	80 wpm	4	82 wpm	2	4	80 wpm	5	91 wpm		
3	4	89 wpm	4	93 wpm	3	5	91 wpm	6	93 wpm		
4	5	92 wpm	5	97 wpm	4	5	93 wpm	6	97 wpm		
5	5	101 wpm	5	104 wpm	5	5	90 wpm	6	96 wpm		
6	5	97 wpm	5	100 wpm	6	4	87 wpm	5	92 wpm		
		91 wpm			94 wpm			88 wpm			94 wpm

High School Fluency

Control Students					Treatment Students						
	Pre-Test Grade	Pre/WPM	Post-Test Grade	Post/WPM		Pre-Test Grade	Pre/WPM	Post-Test Grade	Post/WPM		
1	7	124 wpm	7	126 wpm	1	6	127 wpm	9	137 wpm		
2	6	121 wpm	7	122 wpm	2	7	131 wpm	8	136 wpm		
3	6	118 wpm	7	120 wpm	3	6	127 wpm	7	129 wpm		
4	7	123 wpm	7	123 wpm	4	7	122 wpm	8	125 wpm		
5	5	110 wpm	6	101 wpm	5	5	109 wpm	7	116 wpm		
6	5	99 wpm	6	101 wpm	6	5	101 wpm	6	112 wpm		
7	5	102 wpm	6	98 wpm	7	5	97 wpm	6	113 wpm		
8	7	129 wpm	7	130 wpm	8	7	119 wpm	8	123 wpm		
9	6	117 wpm	7	115 wpm	9	6	122 wpm	9	125 wpm		
10	6	120 wpm	7	119 wpm	10	7	125 wpm	9	127 wpm		
		116 wpm			116 wpm			118 wpm			124 wpm

Discussion of Results

These findings provide strongly support the use of interactive singing software that provides real-time pitch-tracking to increase reading levels and fluency for struggling readers at the elementary, middle, and high school levels. The researchers believe several components of the program provided the impetus for student improvement in reading. The program provides for repetition, which improves fluency, and continuous self-assessment, which provides confirmation and guidance (Samuels, 1979; Guthrie & Wigfield, 2000). The ability of each student to receive instant feedback through the real time pitch-tracking mechanism provides for a measure of autonomy and self-regulation. As supported in the literature (NRP, 2000, Sample, 2005), the music/singing itself was motivating and engaging for all age groups.

Implications for the Classroom

In summary, the use of an interactive singing software program with real-time pitch-tracking as an alternative text provided autonomous support, real-world experiences, and opportunities for the struggling readers to exhibit sophisticated reading techniques. The software program facilitated student growth in fluency, vocabulary, and comprehension. It combines guided oral and silent reading of appropriately leveled songs. In addition, repeated readings lead to automatic responses, which supported improved comprehension and fluency.

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