Research Abstract II: Does Singing Improve Reading?
Using an Interactive Singing Program with Struggling 4th & 5th Grade Readers
A comparison study of reading progress

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A series of three abstracts will report research results from studies using a learn to sing software program with struggling readers:

Abstract I	Presents results from the initial 1-middle school Pilot Study. Includes sustainability data.	October 2004- May 2005
Abstract II	Comparative study comparing control and treatment students in grades 4 – 12 in six school sites.	October 2005- January 2006

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 are being completed in two Phases. Fall (Phase 1) includes 252 students from 6 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 second phase of the 2005-2006 studies ended in May. This phase of the study is exploratory, investigating effects of:

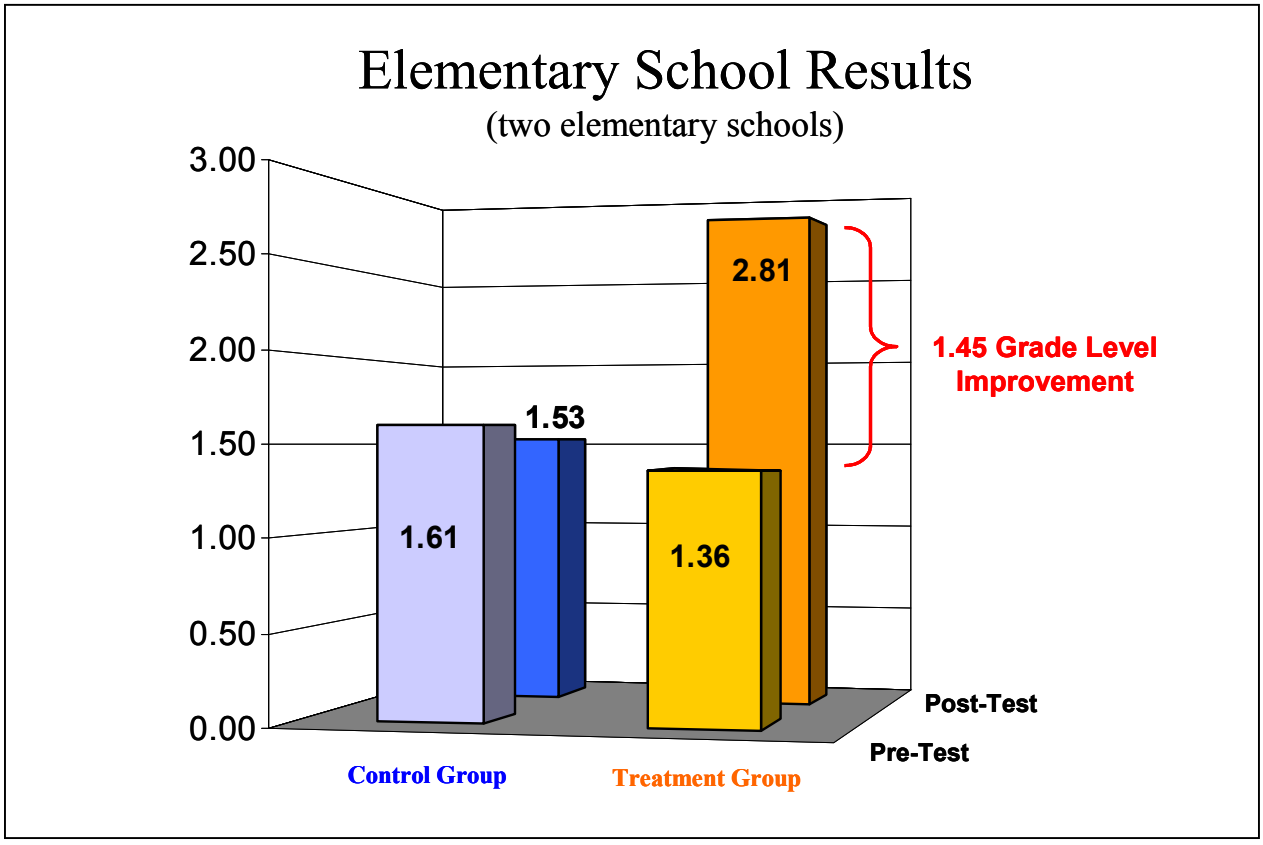
- duration,
- population characteristics,
- multiple treatments, and
- implications for average and above average readers.

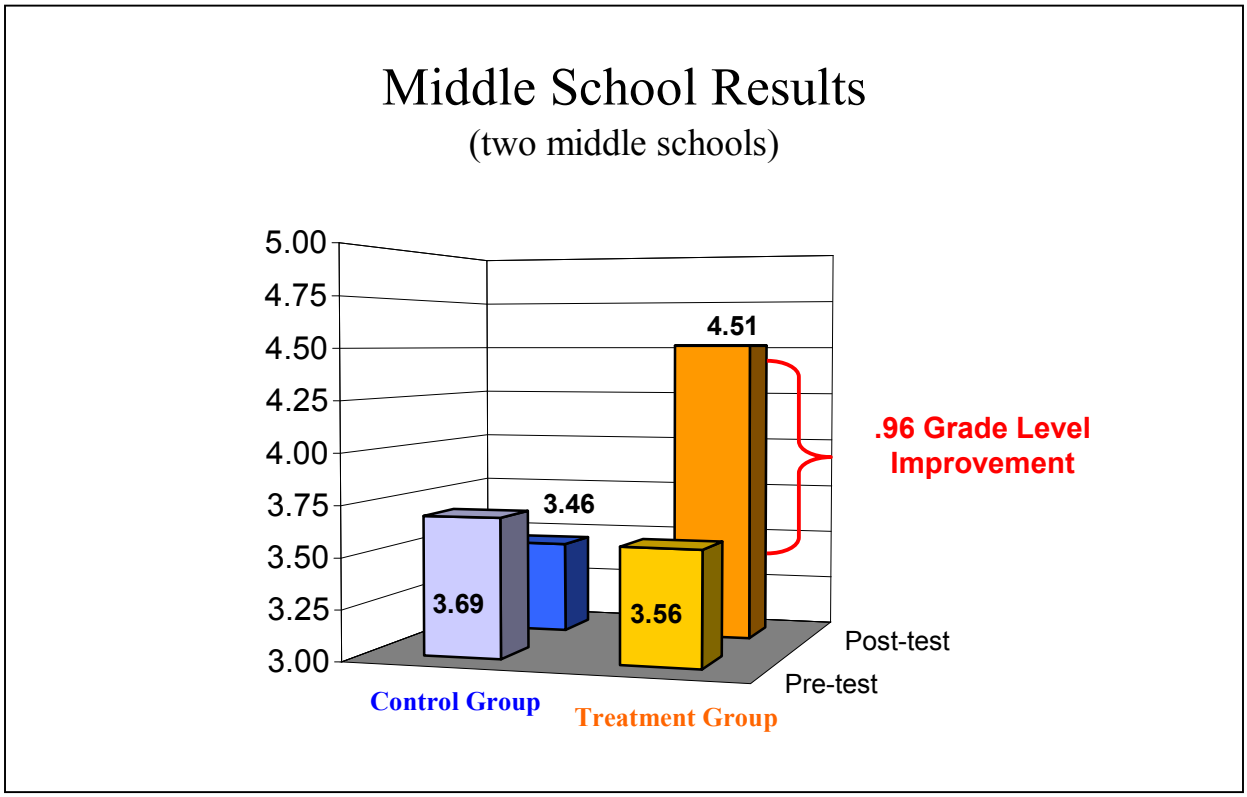
Reading Level Assessment

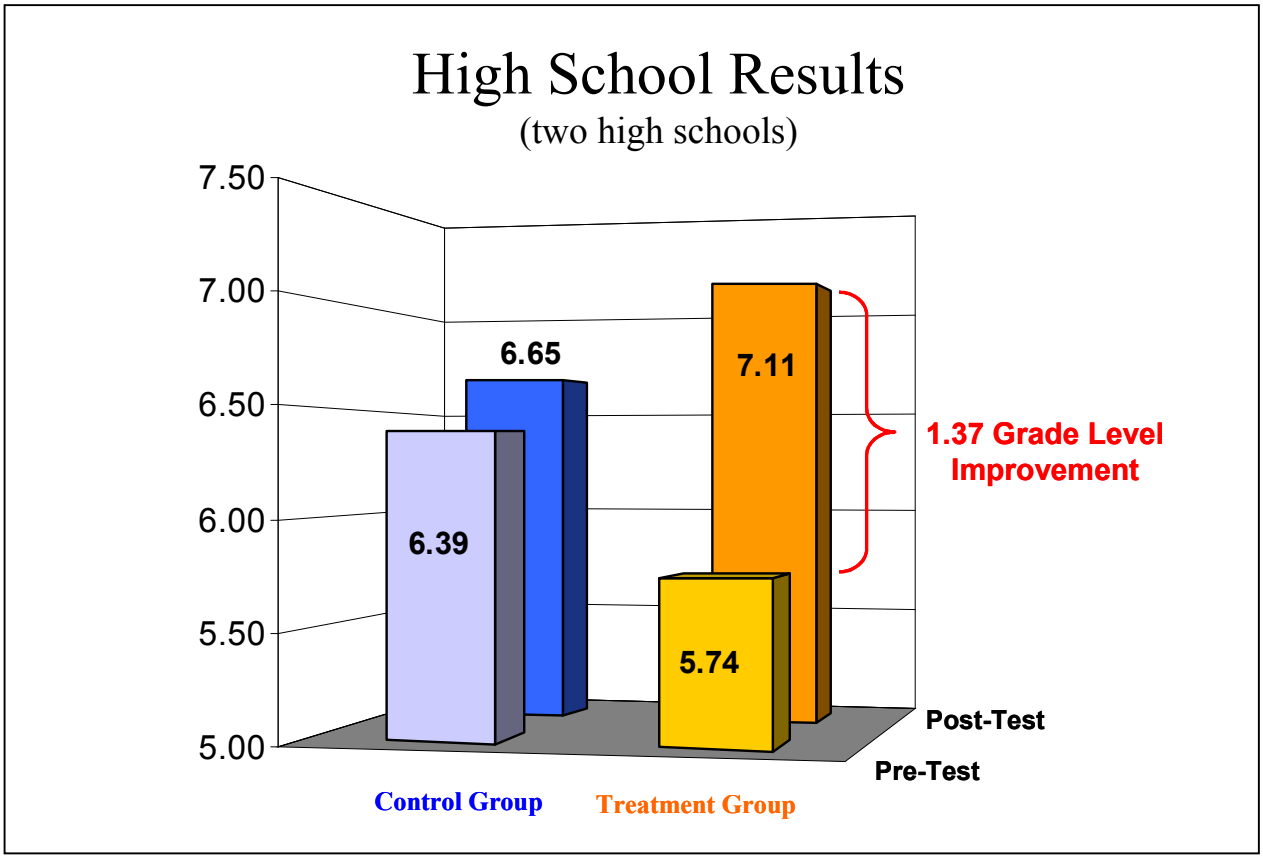
Pretests and posttests were administered to all 252 treatment and control students. The assessment used was the Qualitative Reading Inventory (QRI), an informal reading inventory, with passages ranging from 1st to 12th grade levels. The reliability, validity, and readability levels of all passages have 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

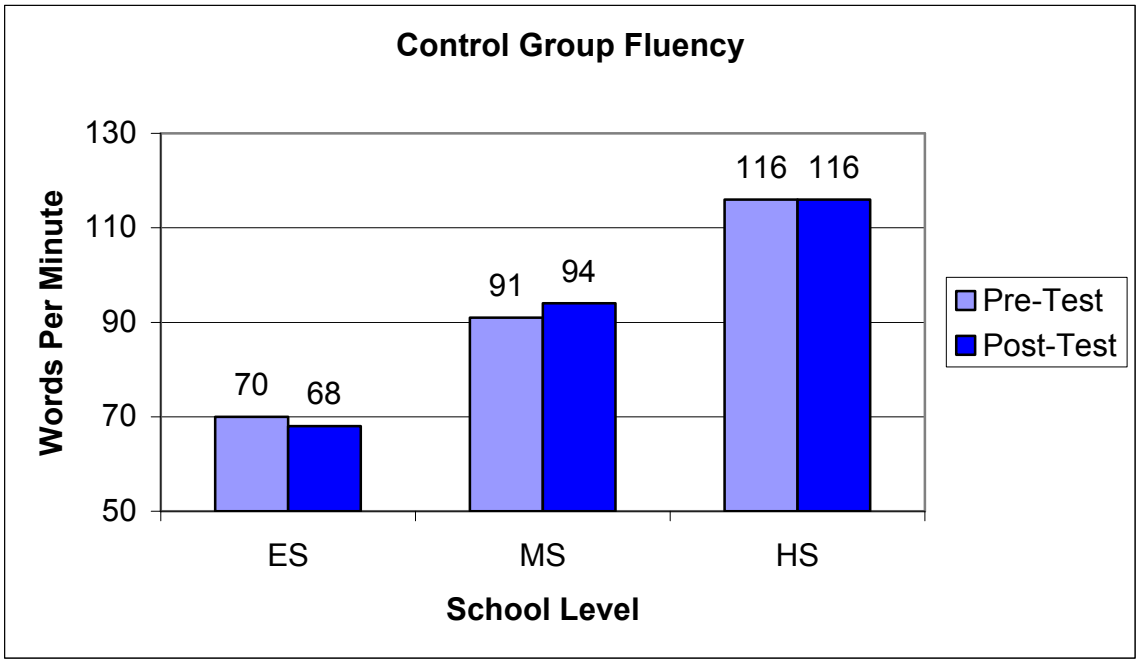
	Control Group				Treatment Group			
		Extrapolated Reading Grade Level:				Extrapolated Reading Grade Level:		
School	# of Students	Pre-Test	Post-Test	Change	# of Students	Pre-Test	Post-Test	Change
EL#1	23	1.60	1.49	(0.11)	23	1.46	2.74	1.28
EL#2	8	1.63	1.63	0.00	9	1.11	3.00	1.89
MS#1	23	3.75	3.40	(0.35)	23	3.79	4.47	0.68
MS#2	8	3.50	3.63	0.13	8	2.91	4.63	1.72
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	**120**	**4.46**	**4.50**	**0.04**	**132**	**4.17**	**5.46**	**1.29**

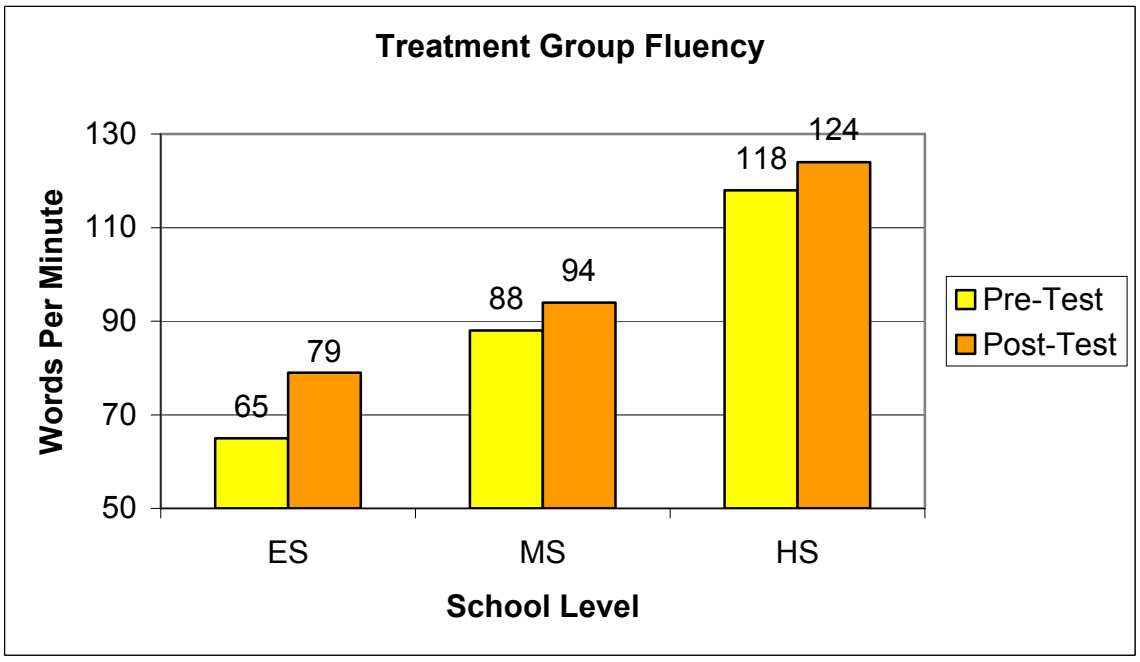

Elementary School Results
(two elementary schools)
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1.61
1.53
1.36
2.81
1.45 Grade Level Improvement
Post-Test
Pre-Test
Control Group
Treatment Group


Middle School Results
(two middle schools)
5.00
4.75
4.50
4.25
4.00
3.75
3.50
3.25
3.00
3.69
3.46
3.56
4.51
.96 Grade Level Improvement
Post-test
Pre-test
Control Group
Treatment Group


High School Results
(two high schools)
7.50
7.00
6.50
6.00
5.50
5.00
6.65
7.11
6.39
5.74
1.37 Grade Level Improvement
Post-Test
Pre-Test
Control Group
Treatment Group

Fluency


Control Group Fluency
Words Per Minute
130
110
90
70
50
70
68
91
94
116
116
ES
MS
HS
School Level
Pre-Test
Post-Test


Treatment Group Fluency
Words Per Minute
130
110
90
70
50
65
79
88
94
118
124
ES
MS
HS
School Level
Pre-Test
Post-Test

Discussion of Results

These findings provide strongly support the use of interactive singing software 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.

References:

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Samuels, S.J. (1979). The method of repeated readings. *The Reading Teacher*. 41, 756-760.

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