Report on the Evaluation of the Beyond Basics Reading Tutoring Program

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To Whom It May Concern:

We are delighted to share with you results of a study that validates our literacy work. Wayne State University researchers, Dr. Carl Freeman and Dr. Hilary Horn Ratner recently completed a study for quantifying Beyond Basic's tutoring program. Results reveal clear evidence of success at enhancing literacy among children in the study group who traditionally struggled with reading proficiency. Dr. Freeman stated, "The data are unequivocal, students who participate in the Beyond Basics' reading program make progress on the basic reading skills, at many times the rate of students in their same school participating only in the general education reading program. This is especially true of reading comprehension skills--the ultimate goal of reading."

According to the research, the treated group, 2nd through 5th grade students, made significant progress in every area vs. those who were in the control and not tutored –

- **Grade level word identification showed 12.5 times** the growth vs. the control group.
- **Word Attack**, **showed 21.9 times** the growth vs. the control group.
- The measurement for **grade level showed 5 times** the growth vs. the control group.

For your review, we have included the full report. Please let us know if you have any questions or would like to discuss this report in more detail.

With warmest regards,

Pamela Good
Cofounder and CEO

Report on Evaluation of Beyond Basics Read to Rise Program

Purpose

Beyond Basics is a non-profit organization dedicated to delivery of student-centered preK-12 reading and literacy-enrichment programs aimed at improving reading proficiency. Beyond Basics collaborates with school and learning communities in under-resourced neighborhoods to provide supplemental literacy programs. A key program, Read to Rise, based on the Tattum Reading approach and offered by Beyond Basics, engages children from second through 12th grade and is designed to improve reading techniques and strategies. Although descriptive and anecdotal evidence exists, no randomized study of program effectiveness had been conducted to this point. The goal of the current evaluation is to determine program efficacy under appropriate experimental conditions.

Study Implementation

Beyond Basics program coordinator, Ms. Debi Zahor, provided Drs. Carl Freeman and Hilary Ratner with a list of students identified by ID number, school, gender, and grade (2-7). From this list students were randomized into the treatment and control conditions. Approximately half of the students within each grade were assigned to the treatment and control conditions. All students were enrolled in the Detroit Public Schools and came from Burton, Sampson, or Thirkell schools.

Each student within the treatment condition participated in the Read to Rise program based on the Tattum Reading approach. Children received one-to-one tutoring over approximately a six-week period, meeting with the tutor three to five times a week. Children assigned to the control condition received no training. Children in both conditions were tested before (pre-test) and after (post-test) the Read to Rise program was completed. In the case of the control group, children were tested approximately six weeks after the pre-test. Both groups received the Woodcock Reading Mastery Test (WRMT) Forms A and B. Within each condition half of the children received Form A and half received Form B at pre-test. At post-test children in each condition received the other test form. The WRMT assesses overall reading proficiency as well as a number of specific reading skills such as word identification, word attack, and comprehension. Analyses were conducted on all scores generated by the test.

Once the post-test was completed for children in the control condition they were then assigned to a treatment group the next semester so that all children would benefit from the reading program. They were tested again at the conclusion of the program using the form of the WRMT that they had received at the initial pre-test.

Analysis Approach

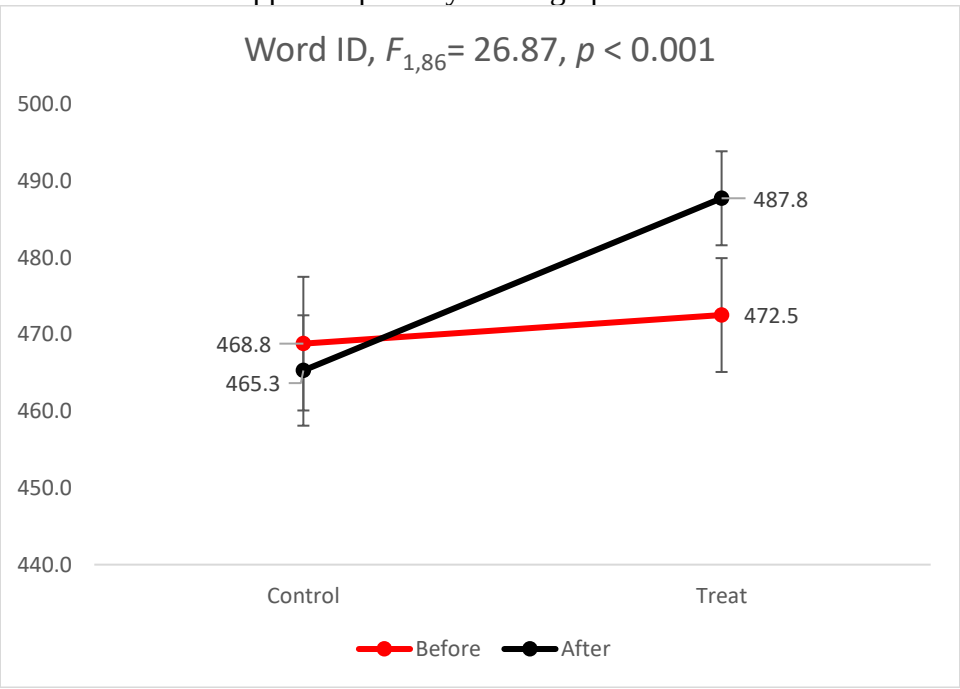
All analyses were conducted by Dr. Freeman using data the data provided by Beyond Basics. Data entered were checked for accuracy against the original test score sheets. Initial analyses were conducted to determine potential effects of school and gender. Because no effects were found for these variables they were not included in subsequent analyses. Students in grades 2 and 3 were combined into one group because the number of children in grade 2 was small (n = 2). Students in grades 6 and 7 were eliminated because only one child in each of these two groups was tested.

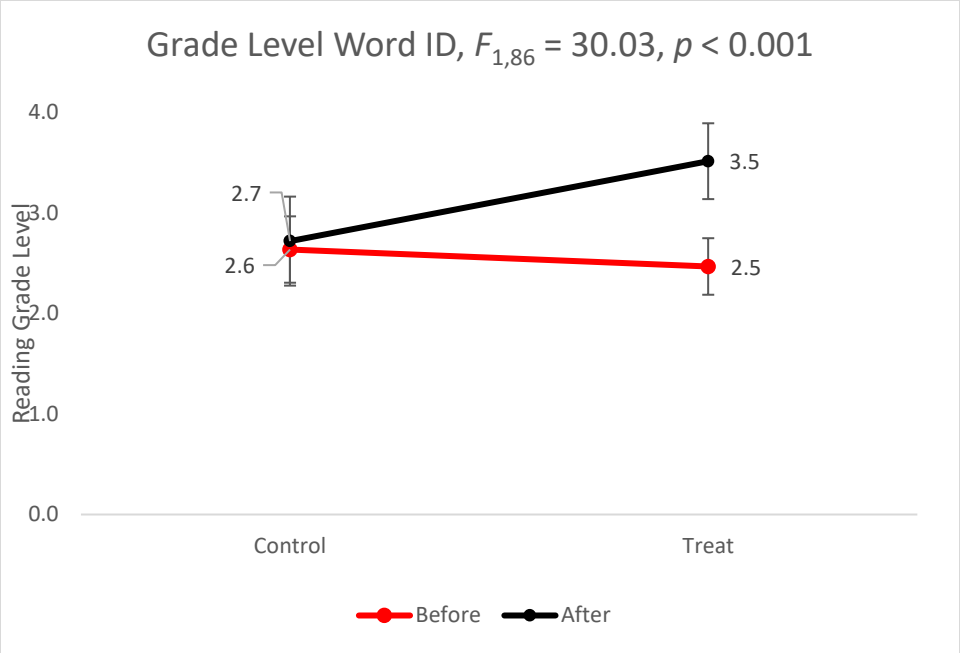
Therefore, in all analyses performance in only three grades (i.e., pooled grade 3, grade 4, and grade 5) was tested. In initial analyses three groups were included, the control group, the treatment group, and the control group which later received the treatment. There was no difference between the last two groups and so they were combined.

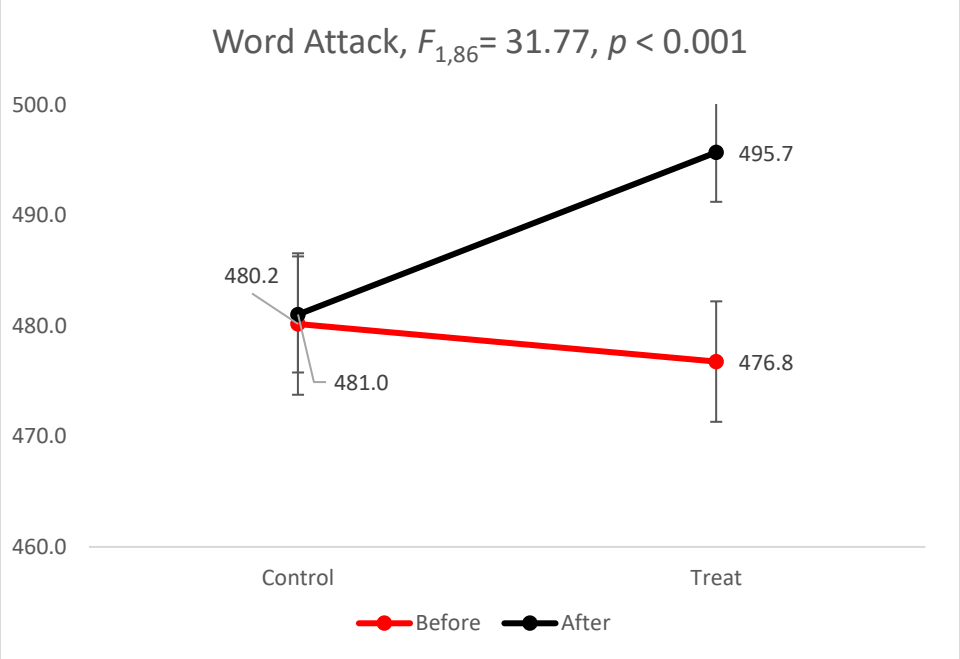
WRMT scores were entered into a series of 3 (Grade—3, 4, & 5) X 2 (Condition—Treatment, Control) X 2 (Time—Pre-test, Post-Test) repeated measures Analyses of Variance (ANOVA). Students were assigned a raw score for each component and then a grade level that corresponded to that component score. The means of the component and grade level scores were compared between the treatment and the control over time in these analyses. Because the components were related, principal component analyses were also conducted. If the Read to Rise program is effective, we predicted that the interaction between time and condition would reach conventional levels of statistical significance in the ANOVAs.

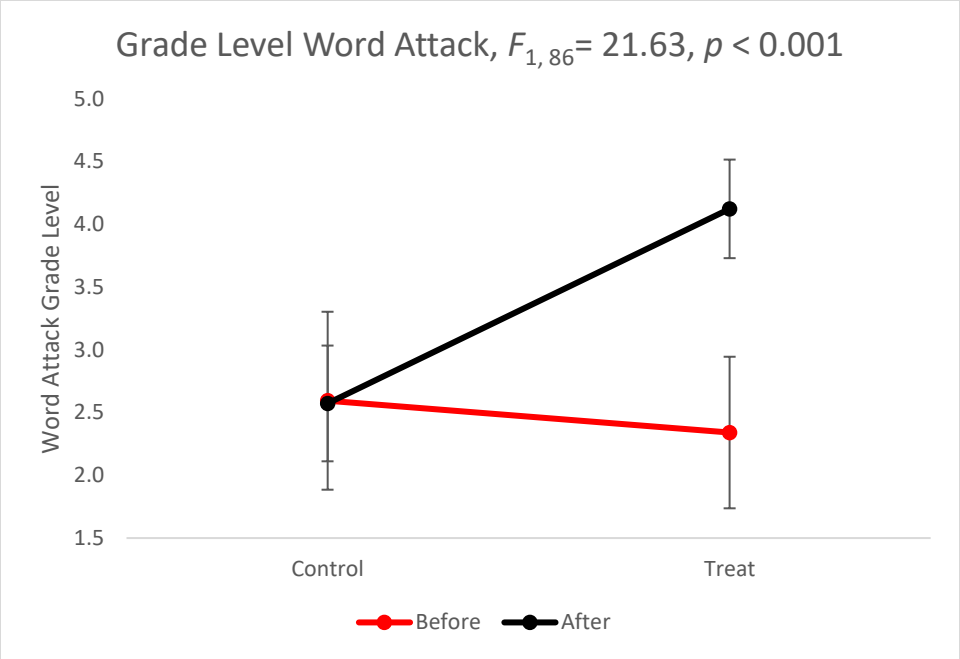
Findings

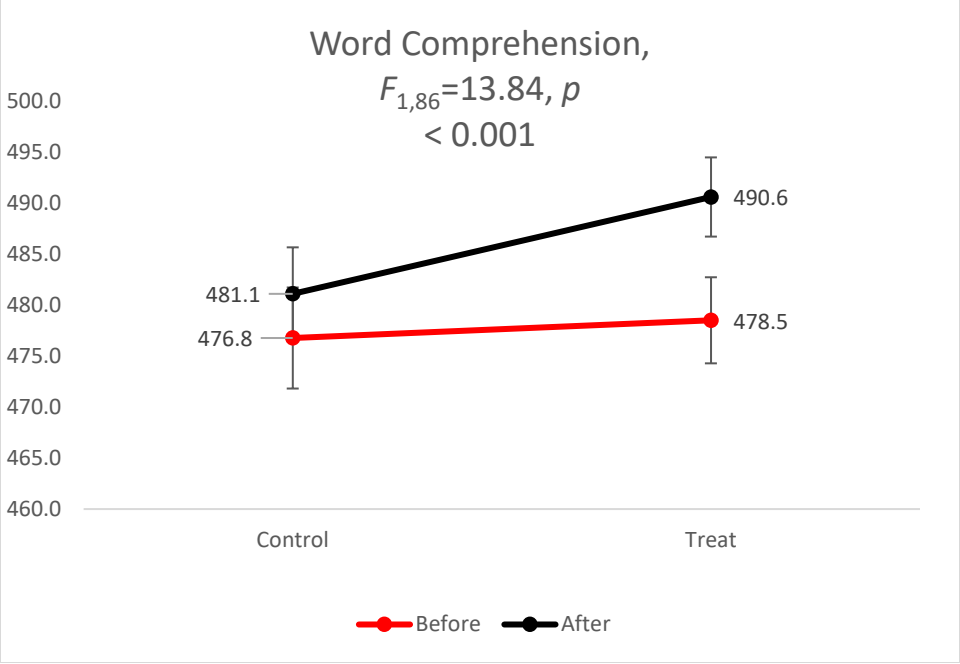
For word identification**,** there was a significant Time x Condition interaction, $F_{1,101} = 26.87$, P < 0.001. Means and 95% confidence intervals are shown below. There is no difference in performance between the treatment and control conditions before receiving the Read to Rise program but there was a significant difference between the two groups at post-test after the treatment group completed the program. In addition, for the treatment condition the difference in performance between pre- and post-test was significant, but for the control condition it was not. The same pattern was found for all other variables which included grade level word identification, word attack, grade level word attack, word comprehension, grade level word comprehension, passage comprehension, grade level passage comprehension, fluency, grade level fluency, total grade level (raw score), total grade level, and a scaled score. *F*s ranged between 7.26 and 55.24 and all *p* values were less than 0.001, except for one which was less than 0.002. Data for each measure appear separately in the graphs that follow.

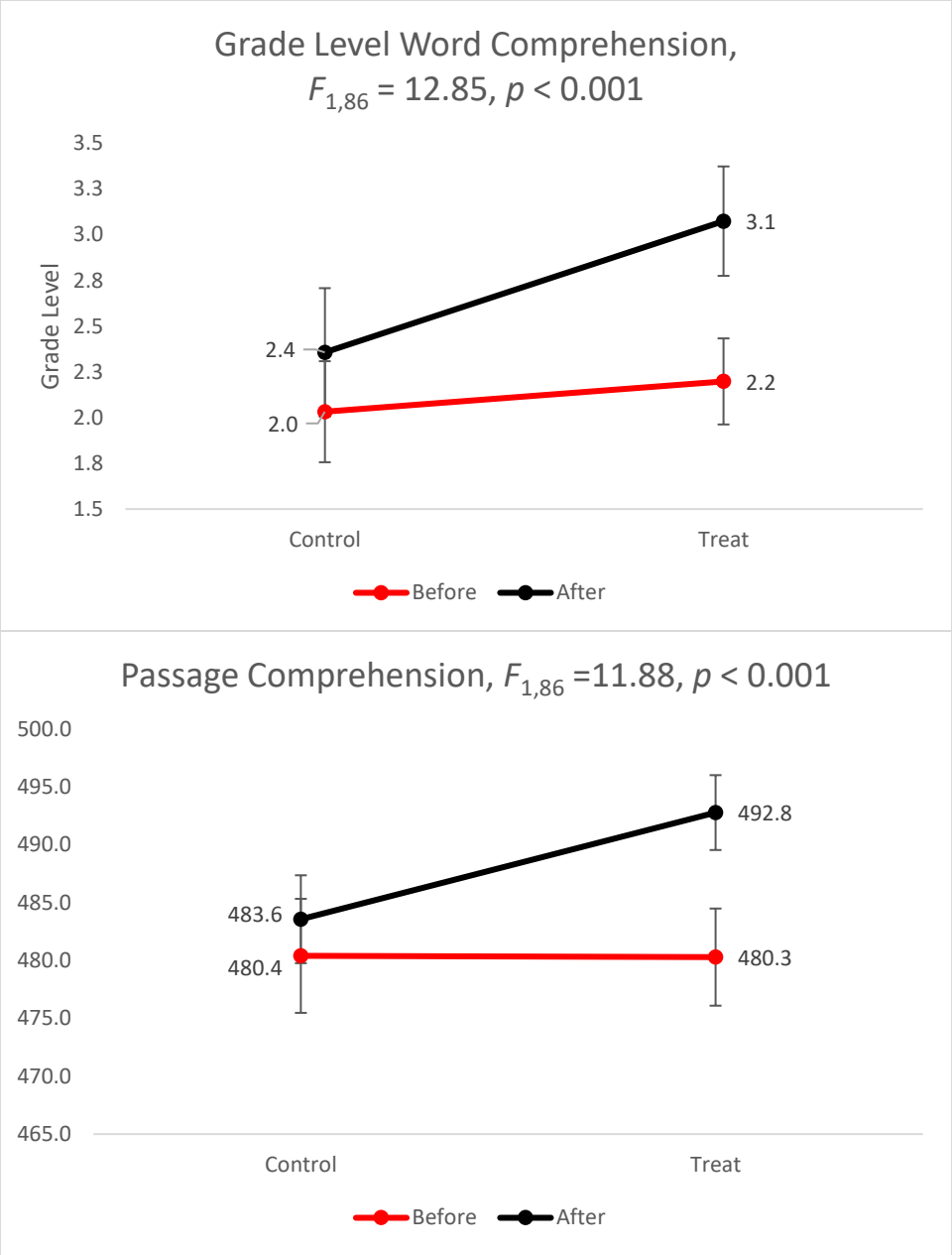



Grade Level Word ID, $F_{1,86}$ = 30.03, p < 0.001
Reading Grade Level
4.0
3.0
2.0
1.0
0.0
2.7
2.6
3.5
2.5
Control
Treat
Before
After

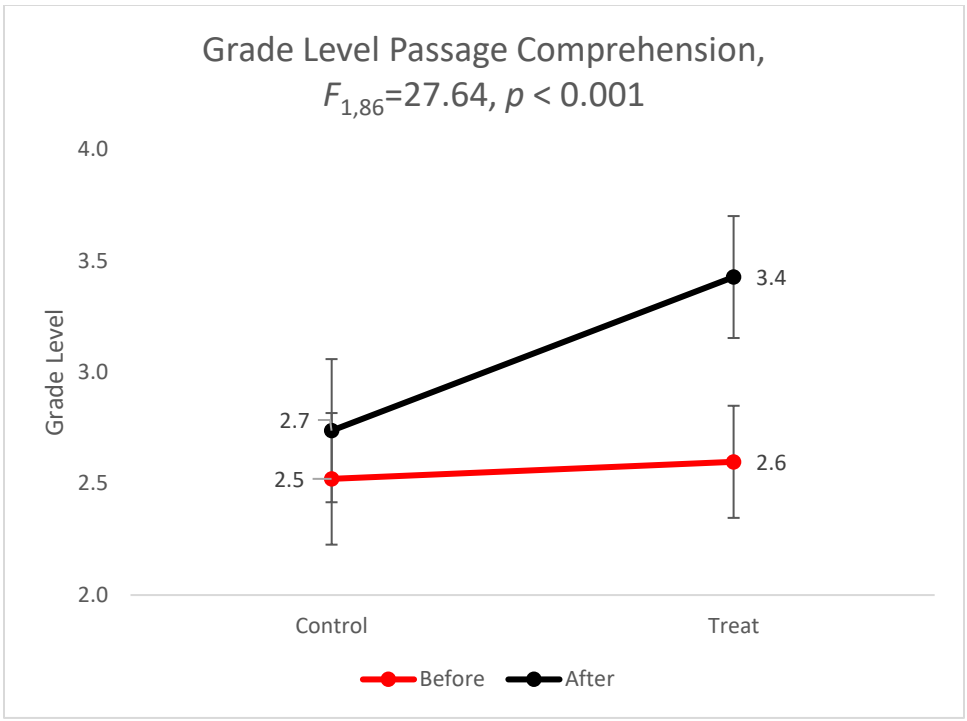

Word Attack, $F_{1,86}$= 31.77, p < 0.001
500.0
490.0
480.0
470.0
460.0
480.2
481.0
495.7
476.8
Control
Treat
Before
After

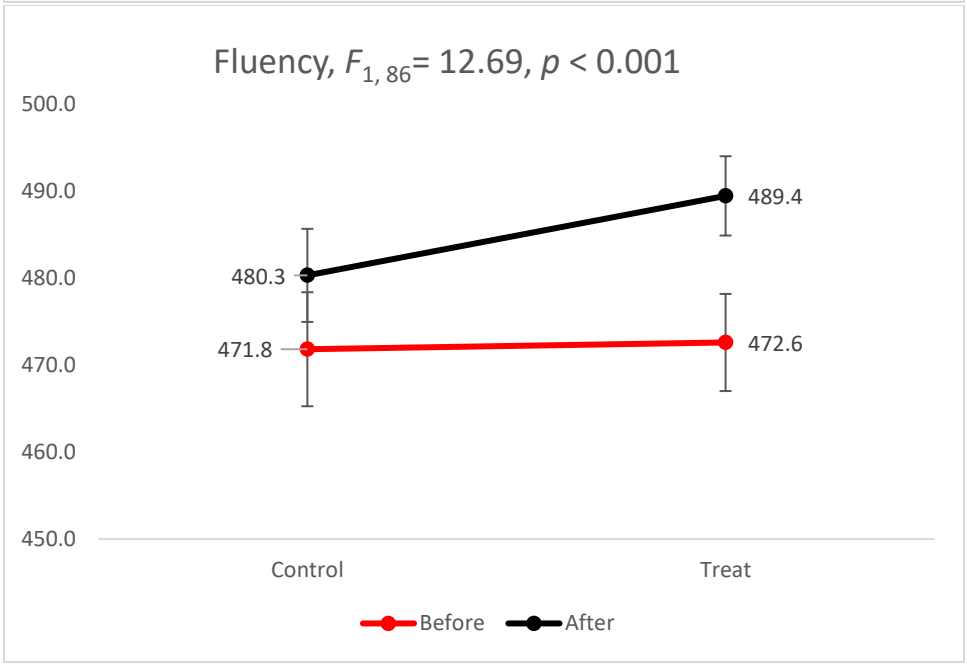

Grade Level Word Attack, $F_{1, 86}$= 21.63, p < 0.001
Word Attack Grade Level
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
Control
Treat
Before
After

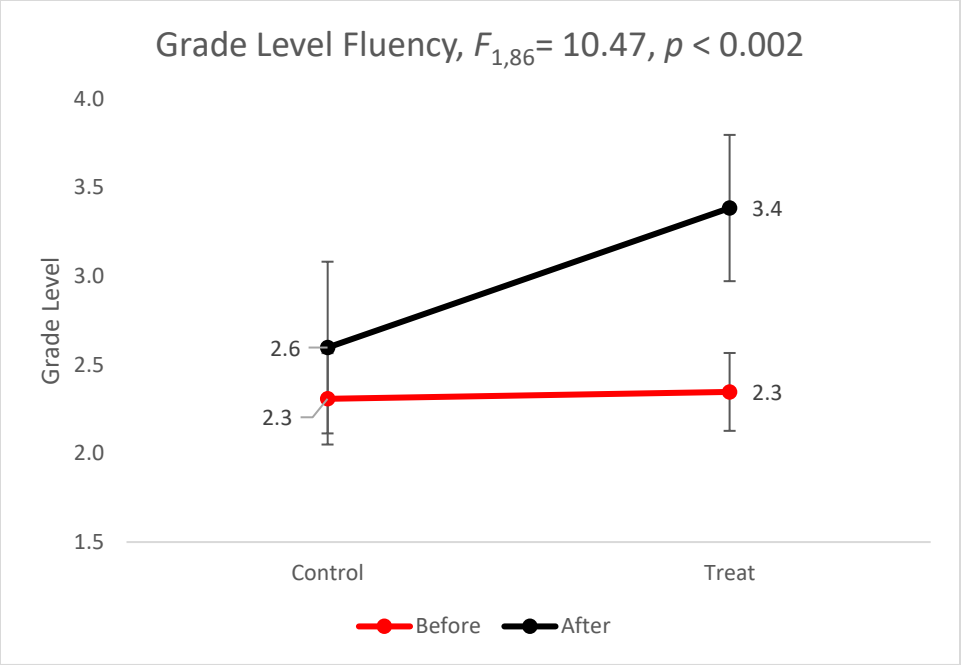

Word Comprehension,
$F_{1,86}$=13.84, p
< 0.001
500.0
495.0
490.0
485.0
480.0
475.0
470.0
465.0
460.0
490.6
481.1
476.8
478.5
Control
Treat
Before
After

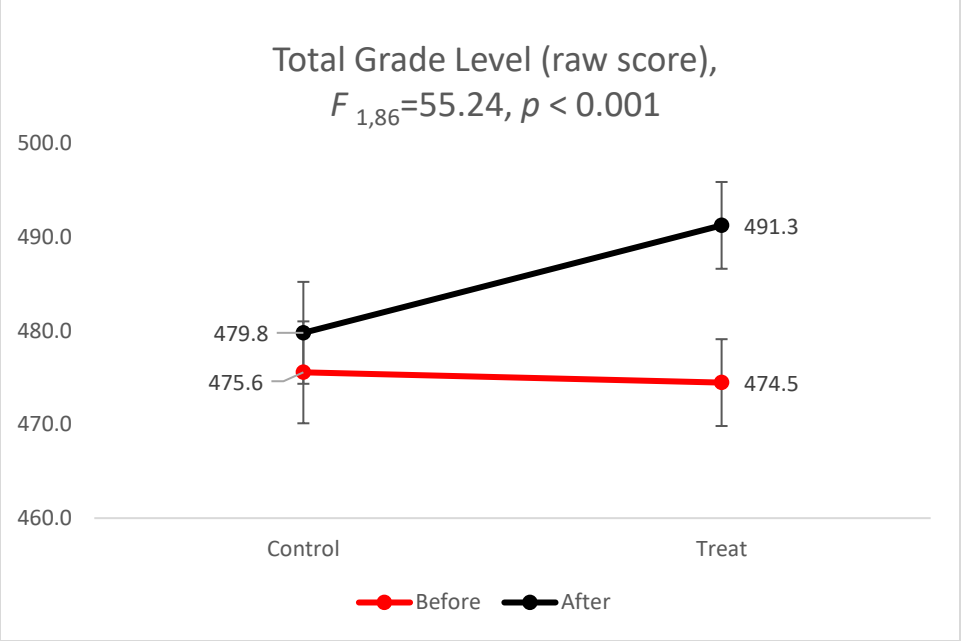

Grade Level Word Comprehension,
$F_{1,86}$ = 12.85, p < 0.001
Grade Level
3.5
3.3
3.0
2.8
2.5
2.3
2.0
1.8
1.5
2.4
2.0
3.1
2.2
Control
Treat
Before
After

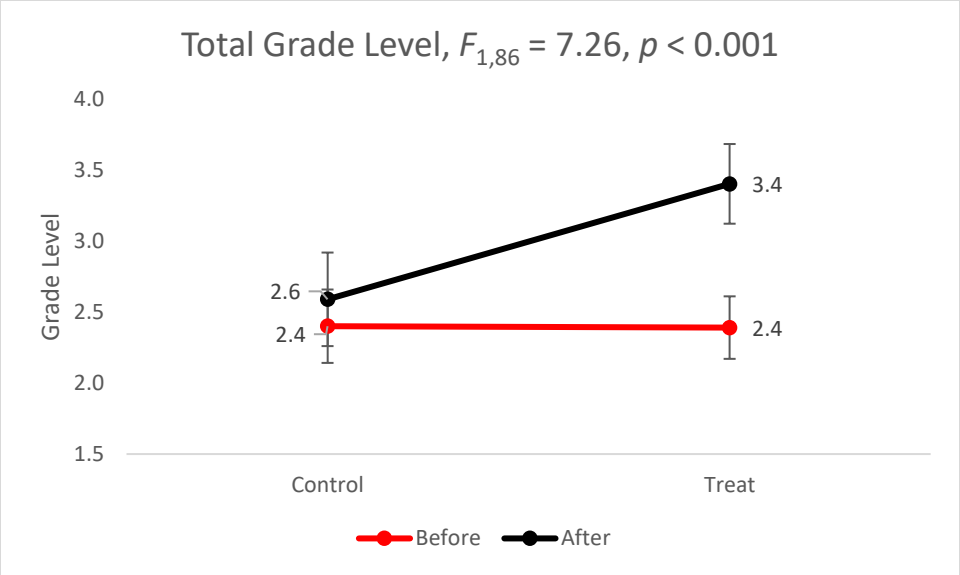
Passage Comprehension, $F_{1,86}$ =11.88, p < 0.001
500.0
495.0
490.0
485.0
480.0
475.0
470.0
465.0
483.6
480.4
492.8
480.3
Control
Treat
Before
After

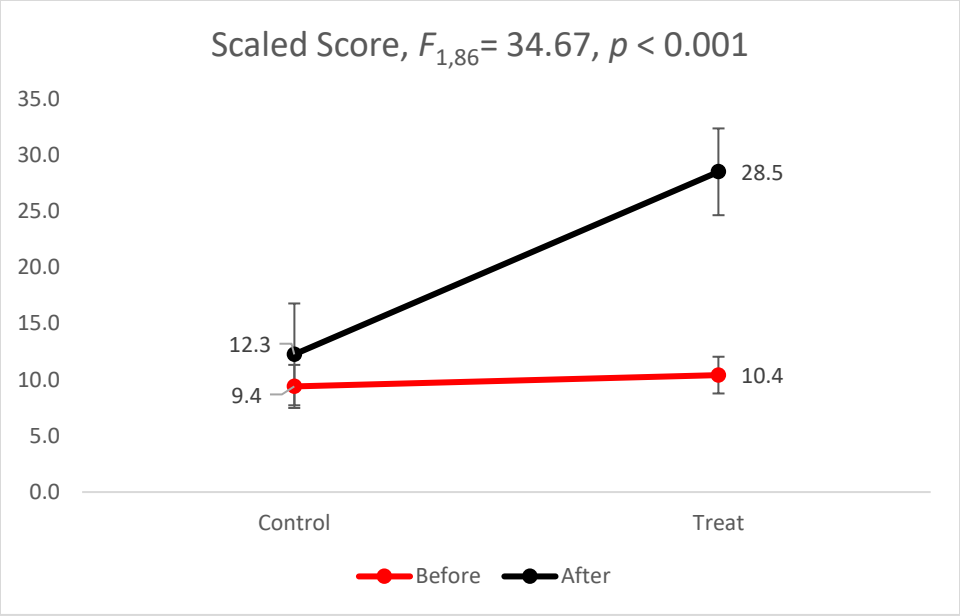

Grade Level Passage Comprehension,
$F_{1,86}$=27.64, p < 0.001
4.0
3.5
3.0
2.5
2.0
Grade Level
3.4
2.7
2.5
2.6
Control
Treat
Before
After


Fluency, $F_{1, 86}$= 12.69, p < 0.001
500.0
490.0
480.0
470.0
460.0
450.0
489.4
480.3
471.8
472.6
Control
Treat
Before
After


Grade Level Fluency, $F_{1,86}$= 10.47, p < 0.002
4.0
3.5
3.0
2.5
2.0
1.5
Grade Level
3.4
2.6
2.3
2.3
Control
Treat
Before
After


Total Grade Level (raw score),
$F_{1,86}$=55.24, p < 0.001
500.0
490.0
480.0
470.0
460.0
491.3
479.8
475.6
474.5
Control
Treat
Before
After





Similar patterns in outcomes across measures suggest that scores were inter-correlated. Pearson correlation analyses among all the pre-test scores revealed that this occurred (*r*s ranged between .299 and .947 and *p* values, between .0001 and .003).

Accordingly, we conducted two principal component analyses (PCA), one before the program and one after. Each analysis produced two components. In the first analysis, the two significant principal components accounted for 81% of the variance. Below is the component matrix. The first component deals with the magnitude of the components. The significant ANOVA occurred because all the values for the treatment group were slightly lower than for the control group. In the second analysis the values for each component were significantly greater than for the control group. Thus, the treatment group outperformed the control group confirming the earlier analyses using individual scores.

Rotated Component Matrix[a]

	Component	
	1	2
WordIDbC	.730	.558
GradeLevelWIDb C	.777	.453
WordAttackbC	.843	.254
GradeLevelWabC	.887	.077
WordCompbC	.391	.834
GradeLevelWCbC	.365	.828
PassageCompbC	.267	.910
GradeLevelPCbC	.208	.918
FluencybC	.694	.501
GradeLevelFbC	.754	.332
TotalGLbC	.721	.672
TotalGradeLevelbC	.791	.590
ScaledScorebC	.721	.313

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

[a] Rotation converged in three iterations.

In the second PCA the two significant components accounted for 76.8% of the variance. Below is the component matrix for this analysis.

Rotated Component Matrix[a]

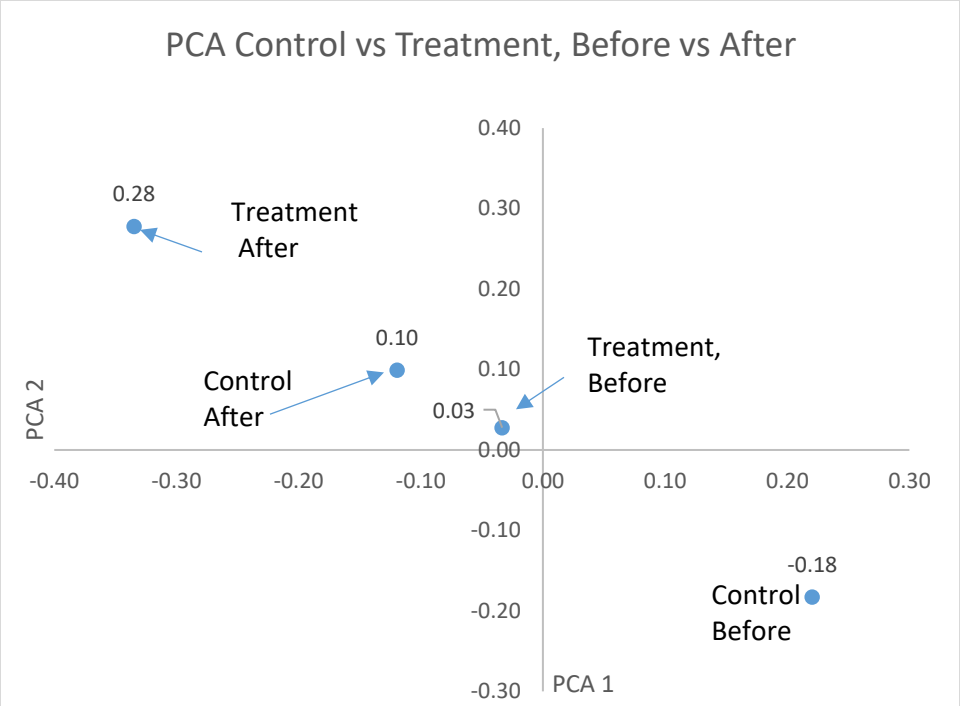
	Component	
	1	2
WordIDaC	.544	.720
GradeLevelWIDaC	.447	.752
WordAttackaC	.346	.802
GradeLevelWAaC	.223	.877
WordCompaC	.753	.366
GradeLevelWCaC	.749	.369
PassageCompaC	.891	.187
Grade LevelPCaC	.886	.152
FluencyaC	.779	.352
GradeLevelFaC	.666	.416
TotalGLaC	.767	.612
TotalGradeLevelaC	.691	.694
ScaledScoreaC	.127	.711

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

[a] Rotation converged in 3 iterations.

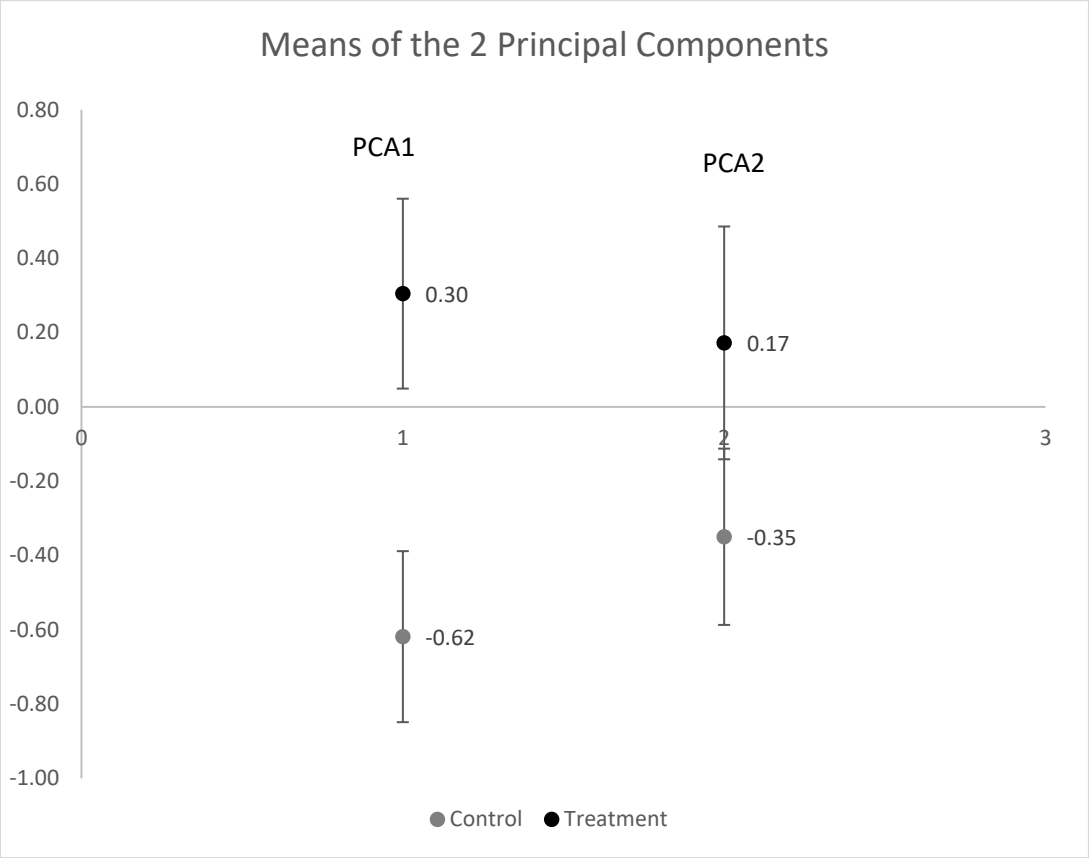
We have plotted the first component on the x axis and the second, on the y axis. While there was a significant difference between the treatment and the control for the first principal in the before analysis, the second component was highly significantly different in the second analysis. The second component in the after analysis is focused primarily on word identification and word attack skills and is not heavily influenced by performance on comprehension measures.



ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
REGR factor score 1 for analysis 1	Between Groups	3.914	1	3.914	4.038	.047
	Within Groups	92.086	95	.969		
	Total	96.000	96			
REGR factor score 2 for analysis 1	Between Groups	.089	1	.089	.089	.767
	Within Groups	95.911	95	1.010		
	Total	96.000	96			
REGR factor score 1 for analysis 2	Between Groups	1.146	1	1.146	1.148	.287
	Within Groups	94.854	95	.998		
	Total	96.000	96			
REGR factor score 2 for analysis 2	Between Groups	9.016	1	9.016	9.847	.002
	Within Groups	86.984	95	.916		
	Total	96.000	96			

Because measures were highly inter-correlated, a Principal Component Analysis (PCA) was carried out on the pre-test data and a Multivariate Analysis of Variance (MANOVA) was performed to determine if the values differed between the treatment and control conditions. An identical test was carried out for the post-test data after the treatment. The second group of principal components differed significantly between the treatment and control conditions ($F_{3,102} = 5.98$, $p < 0.001$). The between subjects test differed for two of the three components within the Principal Components Analysis (PCA)1, $F_{1,104} = 7.99$; $p < 0.006$, and for PCA2, $F_{1,104} = 7.85$; $p < 0.006$.



None of the principal components correlated significantly with the number of sessions; however, the difference between the pre- and post-test for each measure for each student was computed. A PCA analysis involving these differences was then conducted. Although the correlation between the number of sessions and this difference score was low for the first principal component it was significant. The first principal component always deals with the magnitude of the variables ($R = 0.277$, $p < 0.019$). Therefore, the greater the number of sessions, the greater the difference between the groups. This correlation, however, accounted for less than 8% of the variance and so other unidentified factors are much more important in determining the differences between the treatment and control conditions than number of sessions.

Summary and Conclusions

The Read to Rise program was found to be very effective in a controlled randomized study. Children who participated in the program outperformed their peers across a wide range of

reading skills including both word and comprehension performance. Children at the beginning of the program were identical to those in reading performance who did not participate but by the end of the training their skills had significantly increased. These findings provide convincing evidence that the Read to Rise program is successful in enhancing reading abilities among children who traditionally struggle with reading proficiency. The program offers a valuable approach to supplemental reading instruction.