



# Reading Plus® National Research Project Golden West High School Study Overview 2005 – 2006

## Introduction

A controlled study involving a total of twelve schools during the 2005-2006 school year was coordinated by Dr. John Shelley-Tremblay, Researcher and Assistant Professor in the Department of Psychology at the University of South Alabama. High school students from Golden West High School, located in the rural area of Visalia, California, participated as part of this study. More than half of the students at this school were determined to have low English proficiency. A total of 182 students with varying reading abilities were selected to participate in the study, 85 struggling readers in the treatment group and 97 higher level students in the control group. During the course of the study, many of these students from both groups moved from the school district and did not complete the post testing, therefore excluding them from the concluding analysis. Data from some students in the treatment group was also excluded due to insufficient use and/or scheduling of Reading Plus®. Thirty-three treatment students who used Reading Plus® based on the minimum recommendation of 40 Reading Plus® sessions were considered in the final analysis, along with sixty control students who remained at the high school for post testing at the end of the study.



### Purpose of Research

This research project was conducted to investigate whether the use of Reading Plus® contributes significantly to struggling readers' gains made in the standardized test scores of the Gates-MacGinitie Reading Tests and Visagraph® eye movement appraisals. Other individual studies using Reading Plus® have been conducted in the past with high school students and results have shown significant gains on standardized test scores as well as marked improvement in visual/functional and perceptual skills as measured by eye movement recording. This additional study was conducted to show the effectiveness of the current version of Reading Plus®.

### Methodology

All 93 high school students considered for final analysis (33 treatment, 60 control) were administered the Gates-MacGinitie Reading Tests, Level 7/9, Pre (Form S) and Post (Form T) to measure reading achievement along with Pre and Post Visagraph® eye movement recordings to measure reading efficiency. The Reading Plus® usage of the 33 treatment students ranged from two to three times per week for almost the entire school year. The treatment group students included in this report had completed the minimum required 40 or more sessions of Reading Plus® programs, including 30 or more lessons in Guided Reading™ fluency development.

The control group used as reading instruction *The Language of Literature* by McDougal Littell, which included vocabulary and comprehension, for periods of time equal to the time spent in Reading Plus® by the treatment group.

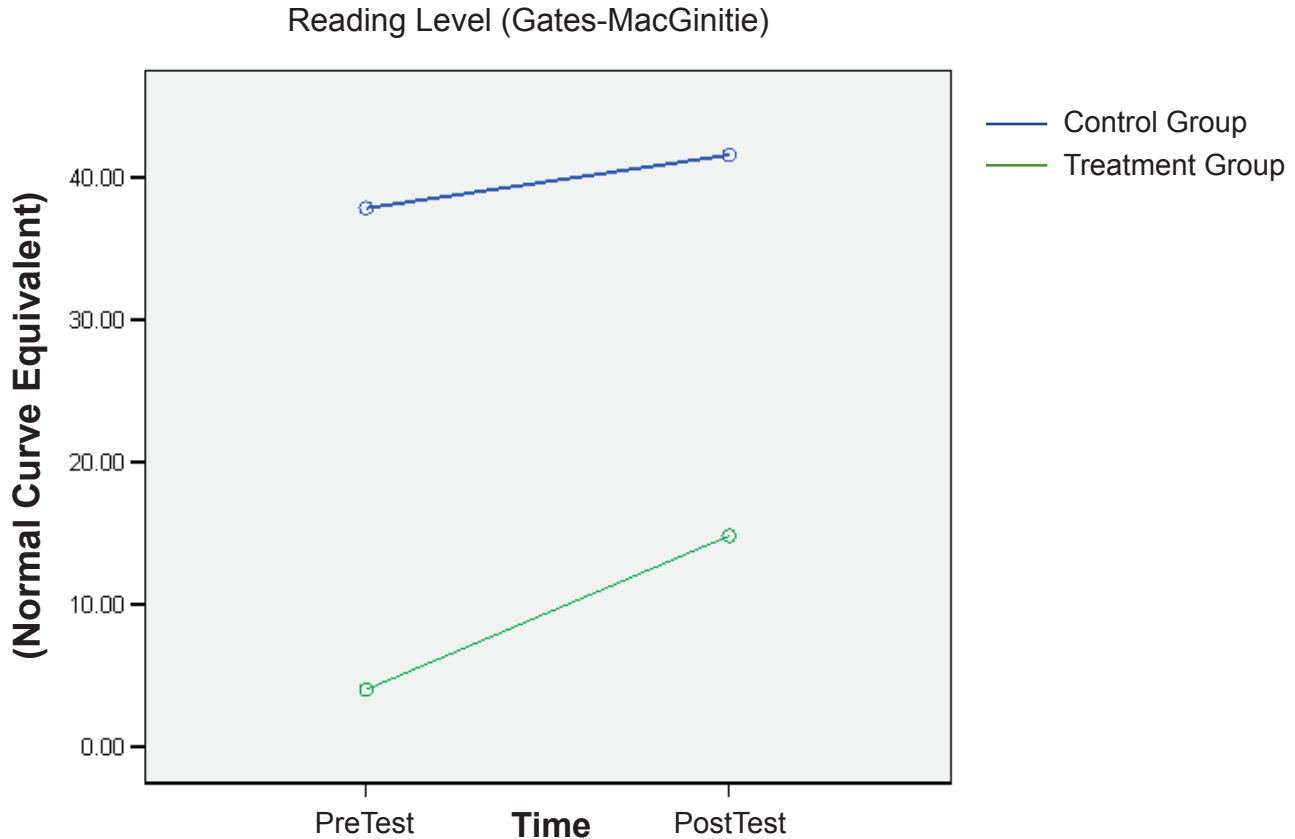
### Results

An analysis was conducted to determine the relative effectiveness of Reading Plus® in producing changes in Reading Comprehension scores, as measured by Gates-MacGinitie scores. Data from all high school participants was entered into repeated measures ANOVA performed on the mean Gates-MacGinitie Normal Curve Equivalent (NCE) scores for treatment ( $n = 33$ ) and control ( $n = 60$ ) participants separately using the pre and post-treatment scores. For this analysis, a main effect of time appeared as  $f(1,91) = 28.068, p < .001$ , but an additional interaction between Time and Group also appeared,  $f(1,91) = 6.624, p = .012$ , indicating that the Reading Plus® treatment group improved in reading significantly more than the control group on the Gates-MacGinitie Test.



The following graph shows the results of the pre and post Gates Reading Tests for both treatment and control groups.

**The metric used for ANOVAs is the Normal Curve Equivalent:**



**The Average Grade Equivalents (Gates-MacGinitie) are as follows:**

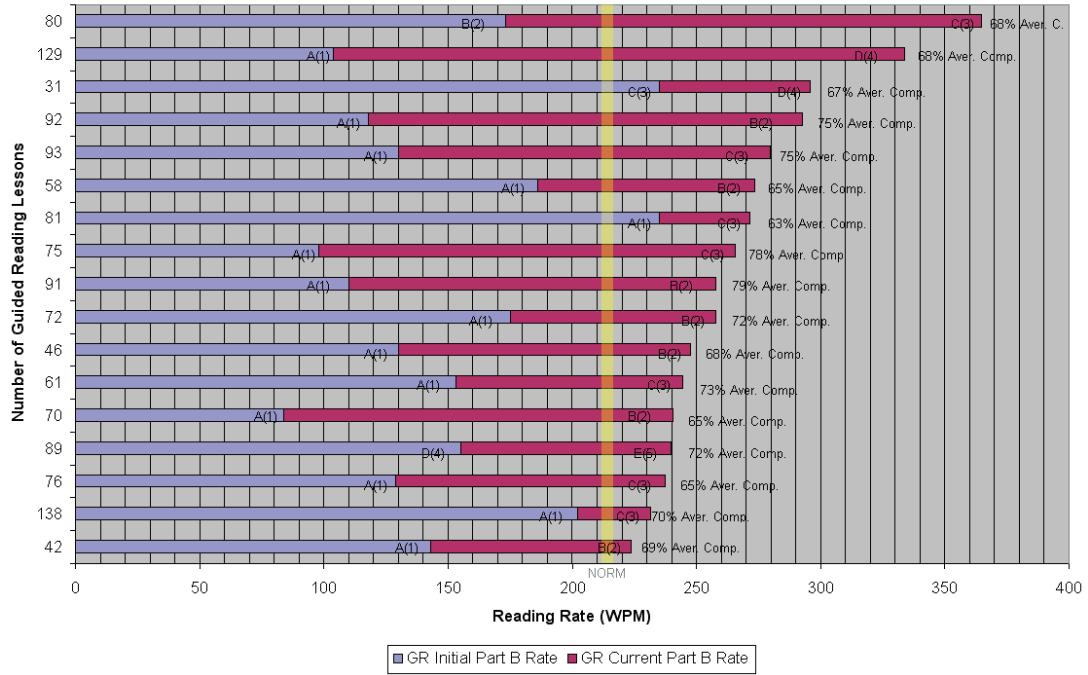
	PreTest Mean	PostTest Mean
Control	7.59	8.47
Treatment	3.64	4.82

The following bar graphs show the treatment group's Reading Plus® Guided Reading™ rate changes. The treatment students read an average of 78 Guided Reading™ lessons with an average comprehension of 67%. On average, the students initially read at 132 words per minute. Upon completion of the study, students were reading during training an average of 234 words per minute, an average rate gain of 81%. The majority of students also increased their reading content levels by one grade level above their initial assigned reading level, while others increased by two to four grade levels.

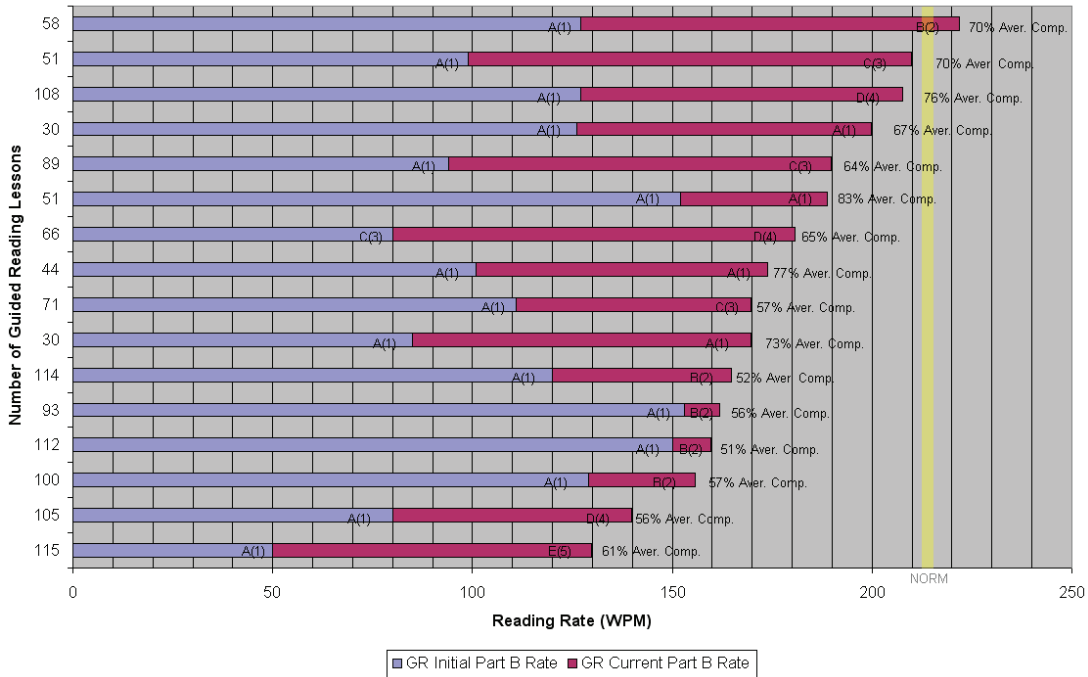


# Golden West High School 2005-2006

2005-2006 High School Research Study (1)



2005-2006 High School Research Study (2)





The results of the Visagraph® eye movement recordings, which measure reading efficiency or fluency in silent reading, for both treatment and control groups are as follows:

### Visagraph® Average Grade Level Equivalent (GLE):

	Pre GLE	Post GLE
Control	7.0	7.5
Treatment	5.0	7.0

On average, the treatment group made a substantial gain of 2.0 GLE, or a two year grade level gain when post tested on the Visagraph®. By contrast, the control group made a half year grade level gain, averaging only a 0.5 GLE increase.

### Visagraph® Average Fixations:

	Pre Fixations	Post Fixations
Control	126	125
Treatment	139	123

While the treatment group improved by making fewer fixations after using Reading Plus®, the control group showed little improvement. On average, fixations decreased by 11.51% in the treatment group, and only by 0.79% in the control group.

### Visagraph® Average Regressions:

	Pre Regressions	Post Regressions
Control	18	16
Treatment	18	15

On average, regressions decreased by 16.67% in the treatment group, and by 11.11% in the control group.



## Visagraph® Average Reading Rate (WPM):

	Pre Rate	Post Rate
Control	193	198
Treatment	153	184

While the treatment group showed a substantial increase of 20.26% or 31 more words per minute, the control group experienced a smaller increase of 2.59%, only 5 more words per minute.

## Conclusions and Summary

This study examined the benefits of implementing Reading Plus® with high school students with varying reading abilities. The treatment group used various programs in Reading Plus®: PAVE™, Word Memory™, Guided Reading™, Cloze Plus™, Reading Around Words™, and Comprehension Power™. Reading Plus® usage ranged from two to three times per week, for the minimum required 40 sessions, including 30 or more lessons of Guided Reading™. The control group used a literature book, and both groups spent equal time in their reading instruction.

Reading Plus® was designed to help students with foundational reading fluency skills which include achieving adequate reading rates, and improving vocabulary and comprehension skills. The results of this study show that the treatment group of struggling readers who used Reading Plus® according to the required and recommended usage of at least 40 sessions with 30 or more Guided Reading™ lessons made 1.22 years gain (compared with their usual annual gain over an average of 10 years of only .36 grade levels of gain per year) improvement in reading achievement on the Gates-MacGinitie Reading Test when compared to the higher level control group who used another reading instructional method. Although the control group, on average, was shown to score higher on the pre tests of the Gates-MacGinitie Reading Test and the pre Visagraph® recordings at the start of the study, the Reading Plus® treatment group, who were the lower achievers, made a more substantial gain when post tested at the conclusion of the study. The majority of the treatment group was composed of students with below average reading skills while the control group consisted of students with a mixture of reading abilities. The Visagraph® results, after pre and post recordings, also indicated a much greater improvement in the treatment group's Grade Level Equivalent, number of fixations and regressions, and reading rate than the control group's.



## Golden West High School 2005-2006

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Improvements in reading by treatment students can also be seen in the gains made in Reading Plus®. By the end of this study, the majority of the students made at least one level gain while others made two, three, and four level gains in content levels of Guided Reading™. Average words per minute increased from 132 to 234 while students maintained good comprehension, a much needed improvement for keeping up with high school courses that require a fairly extensive amount of reading.