

IMPLEMENTATION & RESULTS

# California

## DEPARTMENT OF CORRECTIONS & REHABILITATION

Research Study

# CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION

## Summary of Findings

### TYPE OF STUDY

*Pre-/Post-*

### TYPE OF SCHOOL

*Corrections*

### POPULATION OF STUDENTS

*Correctional, linguistically diverse (ELL)*

### GRADE LEVEL

*Adult education*

### LENGTH OF DATA COLLECTION

*3 years*

### LOCATION

*Western United States, Pacific Region*

### NUMBER OF SITES

*19 of 23 correctional facilities participated in data collection*

### NUMBER OF STUDENTS

*2,500 inmates; pre- and post- scores gathered on 400 participants*

### READING HORIZONS MATERIALS

*Interactive software*

### ASSESSMENT TOOLS

*Wide Range Achievement Test (WRAT); Test of Adult Basic Education (TABE); Word Recognition Assessment in Reading Horizons interactive software; participant surveys*

*Inmates reading below a fourth-grade level received instruction in Reading Horizons. Forty percent of inmates in the program gained more than 3.5 grade levels in their reading skills. Ninety-five percent of inmates said they thought the software helped them learn to read better.*

## Background

California State University conducted a three-year project investigating inmate literacy. Project leads reviewed 24 literacy programs and then selected Reading Horizons interactive software for use in the project.

## Resources

Reading Horizons interactive software, California State University project resources, educational programs and computer labs at correctional facilities.

## Implementation

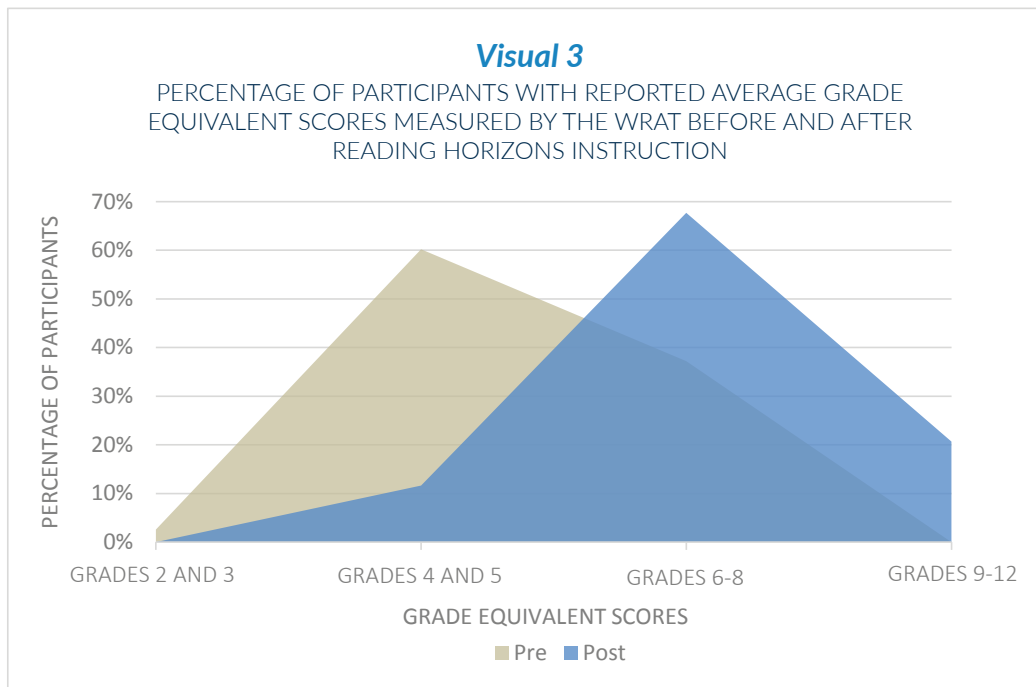
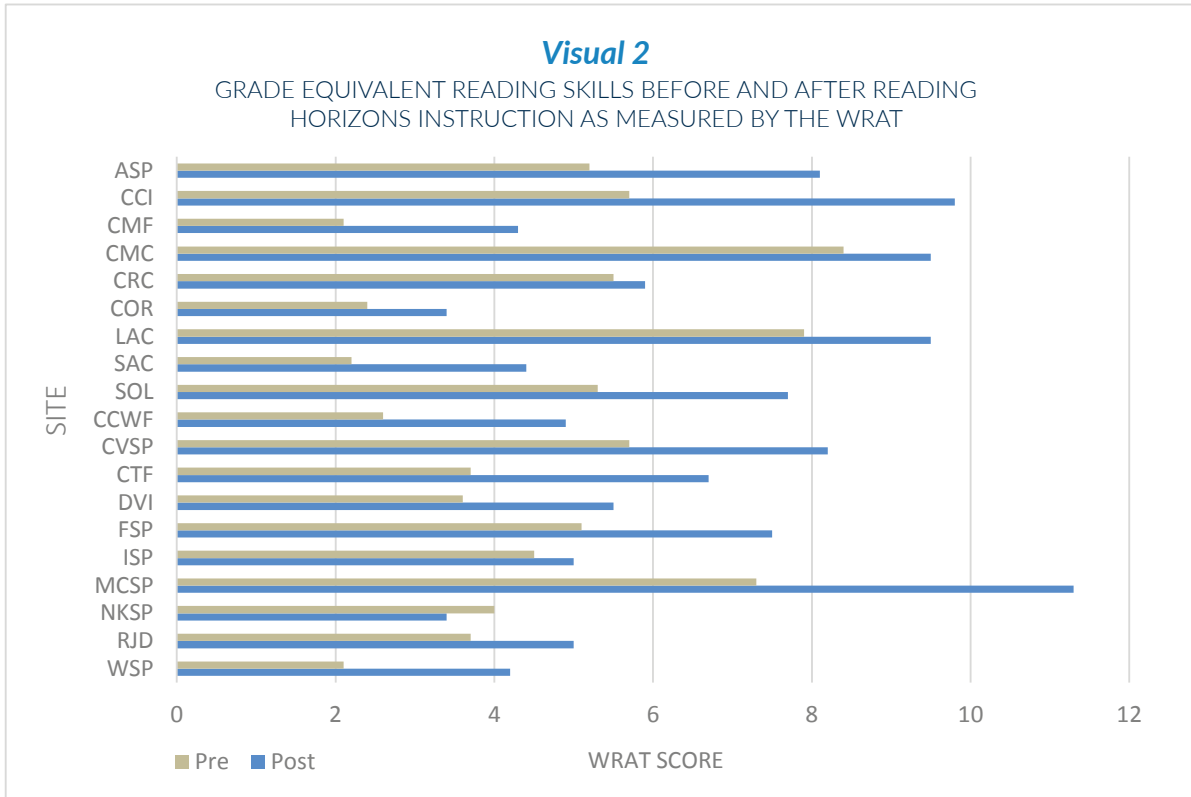
Inmates were pre-tested and then placed in one of two intervention groups: reading at or above fourth-grade level/reading below fourth-grade level. All inmates who scored below a fourth-grade reading level on the formative assessment received Reading Horizons instruction. Additionally, many inmates reading above a fourth-grade level received Reading Horizons instruction. To measure growth, post-tests were administered six months after pre-tests. Pre- and post-test scores on the Wide Range Achievement Test were obtained from 19 of 23 facilities for 400 inmates, representing 16% of all inmates receiving Reading Horizons instruction. Additionally, 21 inmates were selected to participate in a social validity survey.

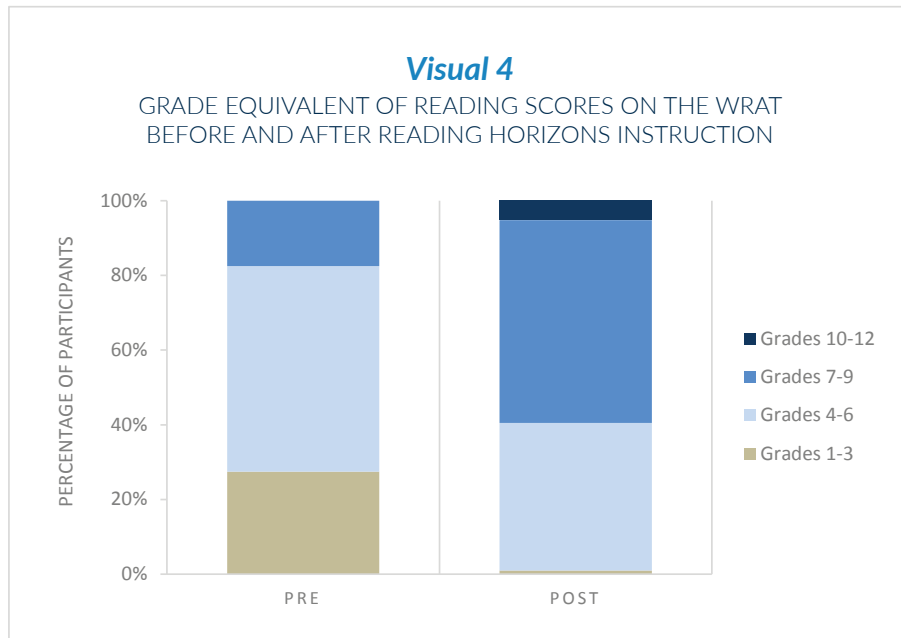
## Outcomes

A weighted average was calculated and yielded a 2.1 grade level increase in participant reading scores, measured by the Wide Range Achievement Test (WRAT) (Visual 1).

<b>Visual 1</b>				
PER-SITE AVERAGE SCORES ON THE WRAT BEFORE AND AFTER READING HORIZONS INSTRUCTION				
<b>SITE</b>	<b>PRE-TEST</b>	<b>POST-TEST</b>	<b>GAIN</b>	<b>PARTICIPANTS (n=400)*</b>
ASP	5.2	8.1	2.9	48
CCI	5.7	9.8	4.1	10
CMF**	2.1	4.3	2.2	1
CMC	8.4	9.5	1.1	38
CRC	5.5	5.9	0.4	25
COR	2.4	3.4	1	1
LAC	7.9	9.5	1.6	11
SOL	5.3	7.7	2.4	36
SAC	2.2	4.4	2.2	10
CCWF	2.6	4.9	2.3	4
CVSP	5.7	8.2	2.5	39
CTF	3.7	6.7	3	12
DVI	3.6	5.5	1.9	67
FSP	5.1	7.5	2.4	35
ISP	4.5	5	0.5	24
MCSP**	7.3	11.3	4	21
NKSP	4	3.4	-0.6	3
RJD	3.7	5	1.3	11
WSP	2.1	4.2	2.1	4
<b>AVERAGE</b>	<b>5.2</b>	<b>7.3</b>	<b>2.1 gradest</b>	
*Several sites reported that more inmates participated in the program; however, pre-/post-test scores were submitted only for this number of participants.				
†Weighted average (Note: when site average and number of participants at each site are available, a weighted average can be calculated to find the average participant gain).				
**Three facilities were reported to have two literacy labs on location. One of those facilities did not submit data in the study. The remaining two facilities ranked second and third in reported grade equivalent gains. Therefore, of the three facilities in which inmates demonstrated at least 3.0 grade equivalent gains, two of them had the added advantage of two on-site literacy labs.				

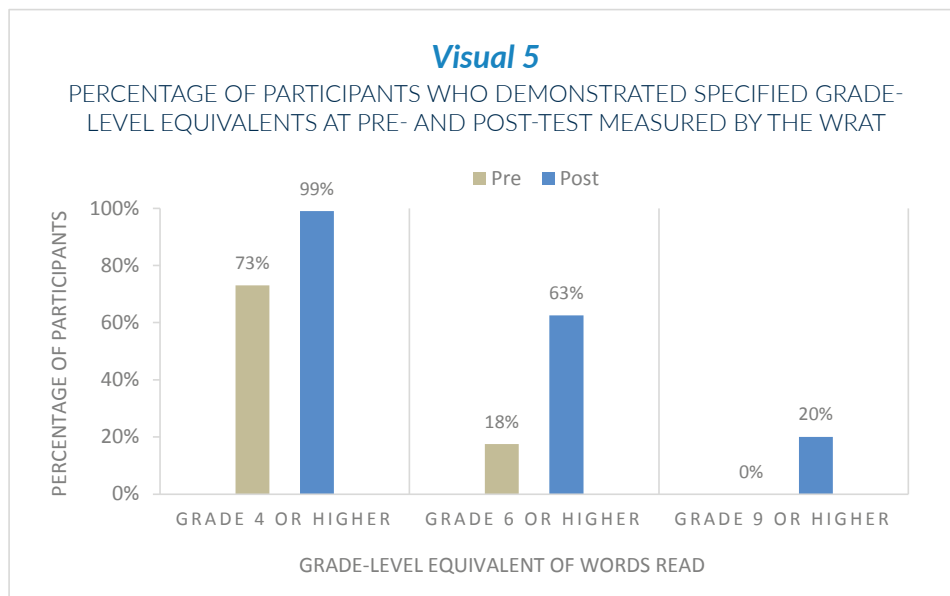
Comparison of data before and after Reading Horizons instruction shows movement from reading skills at lower grade equivalents to higher grade equivalents by participants on the WRAT (Visuals 2-4).





Visual 5 depicts word reading outcomes in more detail:

- Participants who demonstrated reading skills at or above a fourth-grade reading level increased from 73% before Reading Horizons instruction to 99% after Reading Horizons instruction. In other words, 110 participants were reading below a fourth-grade level before Reading Horizons, and after Reading Horizons instruction, only four participants were.
- Before Reading Horizons instruction, less than 20% of participants demonstrated reading skills at or above a sixth-grade level. After Reading Horizons instruction, more than 60% of participants were reading at least a sixth-grade level as measured by the WRAT.
- None of the participants were reading at or above a ninth-grade level at pre-test. After Reading Horizons instruction, 20% of participants were reading at a ninth-grade level or above.



Gains for inmates of selected ethnic backgrounds were reported. Inmates of Hispanic ethnicity made the greatest gains, followed by inmates of black ethnicity (Visual 6).

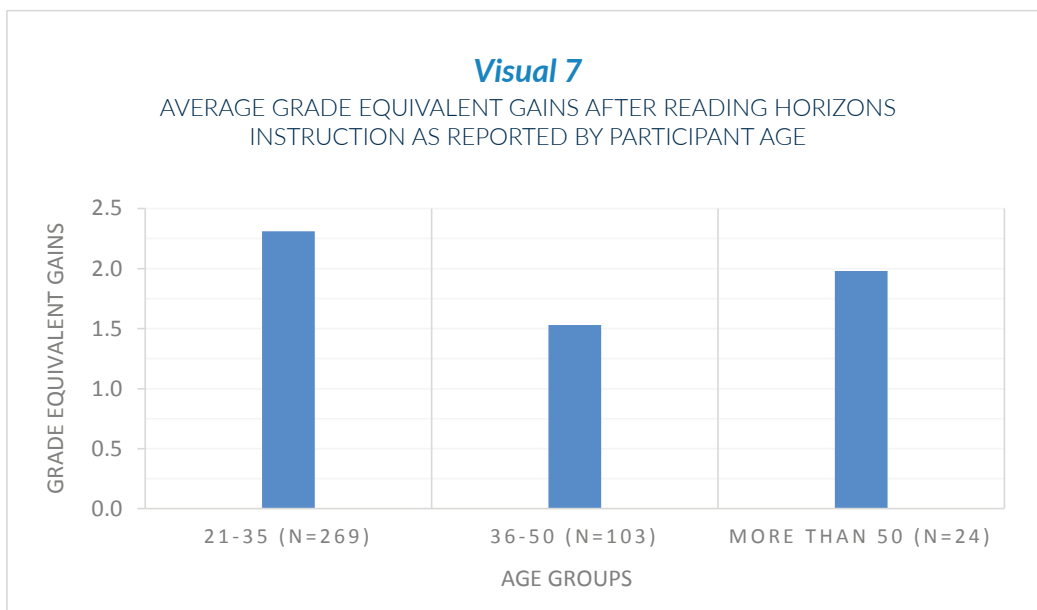
**Visual 6**  
GRADE GAINS AFTER READING HORIZONS INSTRUCTION, REPORTED PER ETHNICITY, AS MEASURED BY THE WRAT

RACIAL & ETHNIC BACKGROUND	PARTICIPANTS (n=400)*	PRE-TEST	POST-TEST	GAIN
AMERICAN INDIAN	1	4.2	4.2	0
ASIAN	6	4	6	2
CAUCASIAN	17	4.2	5.7	1.5
OTHER	31	5.5	5.9	0.4
BLACK	74	4.9	6.6	1.7
HISPANIC	270	5.4	7.8	2.4
<b>AVERAGE</b>		<b>5.2</b>	<b>7.3</b>	<b>2.1</b>

\*Several sites reported that more inmates participated in the program; however, pre-/post-test scores were submitted only for this number of participants.

**Note:** Due to the small number of participants in some ethnic groups in this study, caution must be taken in generalizing outcomes to others who match the demographic.

Participants in the 21 - 35 age range scored better as a group than the average grade gain for all participants. The average score of participants who were more than 50 years old was only slightly less than the average for all participants (Visual 7).



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## Correctional Users Evaluation Results

Identified reasons for progress:

1. The software program begins with an inventory that informs the student specifically where they need to begin work.
2. Each student works at their own pace on the skills that they need to improve. This enables students to move ahead rapidly.
3. The computer software is interactive, which means that audio correction of errors is provided immediately.
4. Computers take the embarrassment out of making mistakes so that energy can be invested in learning rather than in saving face.
5. One teacher can serve students on many different reading levels at the same time.
6. Scores can be printed daily showing skill improvement. Seeing their scores and skills improve daily provides tremendous motivation.
7. ADD/ADHD students have less difficulty staying on task because they have a colorful screen in front of them, a headset and a mouse in their hand to interact with.
8. Students with SBD often find it easier to learn and accept correction from an inanimate computer than from a teacher.
9. Many students realize that the only way out of a life of crime is to get an education but they feel trapped by their own lack of skills. Seeing their reading abilities increase gives them hope.
10. This program teaches critical thinking skills as they learn to analyze words and synthesize what they have learned.

Social validity survey:

- 95% of inmates said they thought the software on the computer helped them read better.
- 90% of inmates said they were comfortable working on the computer.
- 90% of inmates felt that their work on the computer helped them to understand English better.



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