



New Century Education

## SCIENTIFIC RESEARCH UPDATE

**Curriculum:** Reading

**Student Population:** Middle School, High School, Economically Disadvantaged, Academically Underperforming, Limited English Proficient

**State:** California

**Years:** 2004-2005

### *Secondary Reading Students Achieved Statistically Significant Gains Using New Century in a Randomized/Controlled Study*

#### RESEARCH SUMMARY

**Location:** Middle and High Schools, Grant Joint Union High School District, Sacramento, California. (This district was subsequently consolidated into the Twin Rivers Consolidated School District.)

**Targeted Student Population:** 7th and 9th grade "Strategic Students." (District classification for under-performing students functioning one to two grade levels below their academic grade.) These students did not represent the most seriously underperforming, or "Intensive" students. The study included 427 7th graders and 254 9th graders, distributed across ten schools and 20 reading teachers. Due to a high mobility rate, the sample size for analysis was reduced to 549 students (348 in 7th grade, and 201 in 9th grade) from the original 681 students. Of these, 49.5% were in the experimental condition and 50.5% were in the control condition.

**Student Demographics:** Caucasians (27.5%), Hispanics (27.3%), African Americans (15.4%), Asians and Pacific Islanders (27.5%), Native American (2.3%). Of these students, 45.5% did not speak English as the predominant language at home; 18.2% spoke Spanish as the predominate language, and of the 17 other languages, Hmong was the second most popular. 44.6% of students participated in free and reduced lunch programs.

**Research Design:** Students were assigned randomly to control versus experimental conditions and nested both within grade and condition. Experimental induction involved exposure to New Century curriculum. Experimental students were expected to use the curriculum for a minimum of 90 minutes per week during the regularly scheduled math classes. Control students did not have access to the technology, instead receiving the same instruction that they would have received had the experiment not taken place.

**Assessment Instruments:** California Standards Test (CST), a criterion referenced test and the California Achievement Test (CAT 6), a norm referenced test. Both tests administered near the first of May.

**Results:** A total of 470 students (235 control group and 235 experimental group) had data

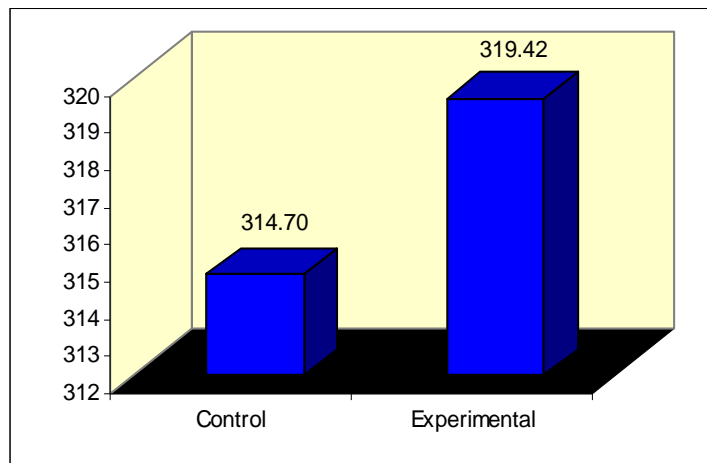


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available for both the 2004 (pretest) and the 2005 (posttest) administrations of the CST. An analysis of covariance (ANCOVA) was performed in which condition and grade were treated as fixed, independent groups factors, and the pretest was treated as a covariate. The results of this analysis produced a statistically significant effect for condition  $p=.05$  in favor of the experimental students over control students. The adjusted mean difference was slightly less than one fifth of a standard deviation ( $d=.18$ ) and had a high probability of replication ( $prep=.88$ )

### CST Reading Scores Partitioned by Grade and Condition

	Control		Experimental	
	Pretest	Posttest	Pretest	Posttest
	M = 302.30	M = 318.79	M = 296.90	M = 319.30
Grade 9	S = 26.48	S = 38.10	S = 31.40	S = 31.75
	N = 104	N = 104	N = 82	N = 82
	M = 311.29	M = 312.50	M = 307.18	M = 314.75
Grade 7	S = 26.06	S = 31.34	S = 27.99	S = 35.50
	N = 131	N = 131	N = 153	N = 153



### ANCOVA Analysis: Mean 2005 CST Reading Scores Adjusted for 2004 CST Scores

Consistent outcomes were observed when the CAT 6 results were analyzed.

**Report:** *New Century Education Corporation, Northern California Evaluation: Reading Grades 7 and 9, Academic Year 2004-2005* Authors: Cometrika, Inc., a collaboration of professors at Michigan State University and California State University, Franklin J. Boster, Ph.D., James Au Yun, Ph.D., Renee Strom, Ph.D.

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