



New Century Education

## SCIENTIFIC RESEARCH UPDATE

**Curriculum:** Mathematics

**Student Population:** Middle School, Economically Disadvantaged,  
Academically Underperforming

**State:** Georgia

**Years:** 2005-2006

### *Students Using New Century's Math Intervention Outperformed Students in the Matched Comparison Group*

#### RESEARCH SUMMARY

**Location:** Henderson Middle School, Butts County School District, Georgia.

**Targeted Student Population:** 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grade students. The study included 5,222 students in 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grades, distributed across seven schools. Of these, 791 attended Henderson Middle School. Henderson students Not Meeting Math Standards in 2005 (303 students, 63 of which were classified as special ed.) used the New Century software and comprised the experimental group. The remaining 4,431 students came from Henderson (those who met standards in 2005), or six demographically similar middle schools (Cousins, Cowan Road, Huntington, Perry, Turner and West Laurens) all in other counties. These students were not exposed to the New Century software. The Matched Comparison Group (the control group) was comprised of students at the other six schools. Among the Matched Comparison Group students, 3,104 students Met Standards and 1,327 did not.

School	Grades	Student Pop.	% Free & Reduced	% African American
Henderson	6-8	842	51%	32%
Cousins	6-8	739	54%	39%
Cowan Rd	6-8	700	54%	32%
Huntington	6-8	849	50%	41%
Perry	6-8	932	52%	37%
Turner	6-8	802	53%	37%
W. Laurens	6-8	907	50%	28%

**Student Demographics:** The schools in the Matched Comparison Group were identified by the Georgia Department of Education to be at the same level as Henderson Middle School in size, demographics, and 2005 CRCT results. All seven schools had between 700 and 907 students total population and had demographics that fell within a narrow band of between 50% and 54% Free and Reduced lunch. In addition, between 28% and 41% of students at each of the seven schools were African-American.

**Research Design:** Untreated Control Group Design with Pretest and Posttest. The purpose of this analysis was to compare CRCT Math scores of previously underperforming students exposed to New Century software (Henderson students who did not meet standards in 2005), with



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comparable control group students. The analysis was conducted using scores from the Spring 2006 administration of the CRCT. Utilizing an Analysis of Covariance (ANCOVA), previous year scores (2005) were used as a covariate in order to control for previous differences in CRCT Math test performance.

**Assessment Instrument:** Georgia Criterion Reference Test (CRCT).

**Results:** CRCT Math: 791 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> graders at Henderson Middle School had both 2006 scores and matching 2005 scores. There were 303 students who did Not Meet Standards in 2005 (with scores at or below 310) and who were assigned to use New Century the following year. There were 488 students who Met Standards in 2005 (score above 310) who did not use New Century. Each grade was analyzed separately relative to its peers at the six comparable schools. The results may be summarized as follows:

Grade 6: Henderson students Not Meeting Standards in 2005 and subsequently using New Century demonstrated significantly greater gains than their peers at two of the comparison schools ( $p < .01$ ) in 2006. Henderson students Meeting Standards in 2005 and not using New Century demonstrated significantly lower gains than their peers at one of the comparison schools ( $p < .01$ ) in 2006. No other differences were significant.

Grade 7: Henderson students Not Meeting Standards in 2005 and using New Century demonstrated significantly greater gains than their peers at three of the comparison schools ( $p < .024$ ). Henderson students Meeting Standards in 2005 and not using New Century demonstrated significantly lower gains than their peers at one of the comparison schools ( $p < .034$ ). No other differences were significant.

Grade 8: Henderson students Not Meeting Standards in 2005 and subsequently using New Century demonstrated significantly greater gains than their counterparts at three of the six comparison schools ( $p < .01$ ) and significantly lower gains than their counterparts at one school ( $p < .014$ ). Henderson students Meeting Standards in 2005 and not using New Century demonstrated no significant difference in performance compared to their counterparts at all six of the comparison schools. No other differences were significant.

In all eight cases where statistical significance in score gains arose between students using New Century at Henderson and their counterparts at the six comparison schools, those differences favored the students at Henderson using New Century. By contrast, students at Henderson who did not use New Century underperformed their counterparts at two comparison schools.

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