

Evaluation Study of Quantum Learning's Impact on Achievement in Multiple Settings

Prepared by: William Benn and Associates, July 2003
Approved by the California Department of Education
as an External Evaluator for Program Improvement Schools

Introduction

The purpose of the study is to evaluate the impact of the Quantum Learning model on student achievement in core academic subjects.

The evaluator collected and reviewed academic achievement data for schools who have effectively implemented the Quantum Learning model. Also, where possible, appropriate comparison samples or standards were developed to assist in evaluating the impact of the Quantum Learning model on achievement. Multiple year assessments were used wherever possible.

Results

The Quantum Learning model has demonstrated a consistent pattern of positive impact on student achievement in 18 schools in four states. This impact has included statistically significant and educationally significant gains in reading, mathematics, writing and more comprehensive measures of core academic achievement used in California and Texas. Students who have participated in schools implementing the Quantum Learning model have also shown a pattern of greater gains in achievement than comparison sample students not participating in the Quantum Learning model.

State/School	Assessment Instrument	Comparison Sample	Evaluation Results
<p><u>CALIFORNIA</u></p> <p>New Lexington Elem.</p>	<p>-API (Academic Performance Index) Comprehensive Measure of Core Academic Achievement</p> <p>-SAT-9 (Stanford Achievement Test)- 9th Edition - Reading and Math</p>	<p>Yes</p> <p>Yes</p>	<p>The results of API scores from 2001 (Baseline) and 2002 indicate that New Lexington made statistically and educationally significant gains in academic achievement compared to 44 comparison schools.</p> <p>New Lexington Elementary School showed educationally significant (Effect Size=.25) and statistically significant ($p<.001$) gains on reading achievement, compared to a sample of similar schools in El Monte School District, based on SAT-9 results.</p> <p>Comparison schools also made gains, but these gains were not as large nor were they educationally significant.</p>
<p><u>CALIFORNIA</u></p> <p>Murray Elem.</p>	<p>-API (Academic Performance Index) Comprehensive Measure of Core Academic Achievement</p> <p>-SAT-9 (Stanford Achievement Test)- 9th Edition - Reading and Math</p>	<p>Yes</p> <p>Yes</p>	<p>The results of API scores from 2001 and 2002 indicate that Murray and the comparison schools, made statistically and educationally significant gains in academic achievement. Murray's gains were slightly larger.</p> <p>Yearly comparisons for Quantum Learning school, Murray School, from 2000 to 2002 on the SAT-9 Total Reading Subtest indicate that students made statistically significant ($p<.001$) progress on three out of the three possible comparisons. Two of the yearly comparisons of gains met the standard of a .25 effect size.</p> <p>Similar results were noted for the Total Mathematics Subtest of the SAT-9 for Murray. Students showed statistically significant gains on three out of three yearly comparisons. One comparison met the effect size analysis standard of .25.</p>

State/School	Assessment Instrument	Comparison Sample	Evaluation Results
<p><u>CALIFORNIA</u></p> <p>Murray Elem.</p>	<p>-SAT-9 (Stanford Achievement Test)- 9th Edition - Reading and Math</p>	<p>Yes</p>	<p>For the comparison school, Valleydale, two of the three yearly comparisons were statistically significant and only one of the effect size analysis met the standard in reading. A similar pattern was shown from the comparison school in mathematics, with none of the comparison of gains meeting the effect size standard.</p> <p>Murray Elementary School showed better achievement gains than the comparison site, Valleydale.</p>
<p><u>CALIFORNIA</u></p> <p>Helix High</p>	<p>-API (Academic Performance Index) Comprehensive Measure of Core Academic Achievement</p> <p>-SAT-9 (Stanford Achievement Test)- 9th Edition - Reading and Math</p>	<p>Yes</p> <p>No</p>	<p>An analysis of API gain scores from Helix High School and matched comparison schools, indicates that Helix High School has statistically ($p < .001$) and educationally ($ES = 1.32$) significant gains over matched comparison schools.</p> <p>Yearly comparisons from 1999 to 2002 on the SAT-9 Total Reading Subtest indicate that students made statistically significant ($p < .001$) progress on four out of the six possible yearly comparisons. Statistical significance was achieved because of large sample sizes ($N = 1500$). None of these gains met the standard of a .25 effect size.</p> <p>Similar results were noted for the Total Mathematics Subtest of the SAT-9, with students showing statistically significant gains ($p < .001$) on four out of six yearly comparisons. Again, none of the effect size analysis met the standard of .25.</p>

State/School	Assessment Instrument	Comparison Sample	Evaluation Results
<p><u>ILLINOIS</u></p> <p>Lakewood Elem.</p> <p>Hampshire Elem.</p> <p>Perry Elem.</p>	<p>ISAT (Illinois Standardized Achievement Test)- Reading, Math, Writing</p>	<p>Yes (Statewide Results)</p>	<p>Results of the ISAT from 1999 to 2002 for three Quantum Learning elementary schools show positive gains in achievement for reading and math. Multiple year comparisons indicate that for four out of six yearly comparisons in reading, the Quantum Learning students showed statistically and educationally significant gains ($p < .001$) in reading achievement (percentage of students meeting or exceeding state grade level goals).</p> <p>Mathematics achievement showed statistically significant gains on five out of six comparisons, and educationally significant gains (effect size .25 or better) on three out of six comparisons.</p> <p>Writing achievement did not show similar gains, with only one year showing a positive gain in the percent of students meeting grade level standards.</p> <p>Quantum Learning students did do substantially better than the statewide comparison sample in reading. The statewide comparison sample did not show any increases in the percent meeting grade level standards in reading.</p> <p>Mathematics achievement favored Quantum Learning students over the statewide sample, with large increases for Quantum Learning participants in the following yearly comparisons - 1999-00; 1999-02; and 2001-02.</p> <p>The results of statewide writing assessment were similar to Quantum Learning students, with the statewide sample making gains on only one yearly comparison.</p>

<p><u>ILLINOIS</u></p> <p>Hillcrest High</p> <p>Bremen High</p> <p>Thornton Fractional North High</p>	<p>-PSAE (Prairie State Achievement Exam)</p> <p>-ISAT (Illinois Standardized Achievement Test)- Reading, Math, Writing</p>	<p>Yes (Statewide Comparison)</p>	<p>Quantum Learning High Schools demonstrated educationally ($ES > .25$) and statistically ($p < .001$) significant gains in reading and writing achievement on the PSAE, comparing 2001 to 2002 based on the percent of students meeting grade level standards. The statewide comparison sample made no gains in the reading and writing for those years. Mathematics showed a decline at Quantum Learning Schools, while the state, again, showed no change.</p>
<p><u>TEXAS</u></p> <p>Fair Oaks Ranch Elem.</p> <p>Kendall Elem.</p> <p>Alamo Heights Jr. High</p>	<p>TAAS (Texas Assessment of Academic Skills) Comprehensive Measure of Core Academic Achievement</p>	<p>Yes</p>	<p>Each year of the project, all three Quantum Learning schools showed growth in their achievement in reading and mathematics as measured by the growth students with matched scores made on the TLI from the previous year. Comparison schools identified by the state of Texas also showed growth. Fair Oaks Ranch School exceeded the growth of comparison schools in 1999 and 2002 in reading, and in 2000 and 2002 in mathematics.</p> <p>Kendall School exceeded the growth of comparison schools in 2002 in reading and mathematics. Alamo Heights exceeded the growth of the comparison schools in 1999 and 2000 in reading and mathematics.</p> <p>Overall, Quantum Learning schools exceeded the growth of comparison schools in reading and mathematics in 1999, 2000, and 2002. Comparison schools did better in 2001. Quantum Learning schools showed statistically ($p < .05$) and educationally significant ($ES > .25$) increases when compared to comparison samples in 1999 and 2002 in reading and mathematics, based on TLI mean growth scores from the TAAS. Quantum Learning schools showed a statistically significant increase in reading in 2000, but not an educationally significant increase. In 2001, comparison schools had statistically and educationally significant better TLI mean growth scores than Quantum Learning schools.</p>

<u>WYOMING</u> Big Horn Elem. Big Horn Middle Big Horn High Tongue River Elem. Tongue River Middle Tongue River High	WyCAS (Wyoming Comprehensive Assessment System) Reading, Math, Writing	Yes	Sheridan District #1 (Quantum Learning schools including Big Horn Elementary, Big Horn Middle, Big Horn High, Tongue River Elementary, Tongue River Middle and Tongue River High, showed educationally significant (Effect Size >.25) and statistically significant ($p < .05$) gains on reading and writing achievement, compared to a sample of similar schools in Sheridan District #2 (non-Quantum Learning schools), based on WyCAS results on the percent of students meeting grade level standards. The results for mathematics indicate that the 2002 WyCAS results were not statistically significant, but that the difference indicates a significant effect size (+1.06).
--	---	-----	--

*** Complete evaluation available upon request**