

Research Results

Lewisville High School North, Lewisville, TX, 2000

Abstract

In the first term of their implementation, Lewisville High School North compared performance of students using Cognitive Tutor Algebra I to students using a traditional curriculum. On the Texas End of Course exam for Algebra I, students in the Cognitive Tutor classes equaled the performance of students in the traditional classes and exceeded the performance of previous years. An additional analysis looked at two teachers' performance, measured by student pass rates, from one year to the next. Both of the teachers showed dramatic year-over-year improvements after adopting the Cognitive Tutor.

Study Design:

Comparison group

Measures:

Standardized exam: Texas
End Course exam for
Algebra I

Study location:

Lewisville High School North;
Lewisville Independent
School District; Lewisville, TX
(Dallas suburb)

Study conducted by:

Lewisville Independent
School District

Data analyzed by:

Lewisville Independent
School District

Course assessed:

Cognitive Tutor Algebra I

Data collection date:

2000

District Information:

Type: Public, suburban
Students Enrolled: 895
% of Students Qualifying for
Reduced Lunch: 8%

Ethnic Breakdown:

African American: 11%
Caucasian: 70%
Hispanic: 15%
Other: 4%

Participants

Participants were students at Lewisville High School North, which serves middle-class students in suburban Dallas. Students were all in ninth grade and used an accelerated block schedule. Two-thirds of the students at the school used Cognitive Tutor Algebra I. The rest used a traditional curriculum. Students were randomly scheduled into the Algebra I classes.

Method

Students were administered the Texas state End of Course exam in December, 2000 (at the end of the first block), and results were tabulated. The district keeps records of End of Course pass rates by teacher, so two teachers' performance were compared from one year to the next.



Results

Pass rates were 85% overall and 84% for the Cognitive Tutor students. This compares very favorably with pass rates of 71% and 58% in the previous two years at this school. Looking at these previous pass rates, it is clear that Lewisville High School North had already been performing well above the 45% statewide passing rate on the Texas End of Course exam when using a traditional math curriculum. When using the Cognitive Tutor, students continue to perform well above the state average (84% vs. 45%) with performance equivalent to that of the traditional students. School officials believe the performance of the traditional students on this exam may be somewhat misleading, due to the absence of several poor students in that group from the exam. It is possible that, had those students attended, the Cognitive Tutor students would have shown superior performance, compared to the traditional students.

Looking at individual teachers, one teacher improved from a 58% pass rate for their students before using the Cognitive Tutor course to a 90% pass rate afterwards. Another teacher improved from a 65% to a 78% passing rate.

Discussion

There are several complications in this data that prevent us from making strong conclusions. First, we do not have any basis for saying whether the Cognitive Tutor and the traditional students were initially matched in their mathematics ability. In addition, pass rates at this school fluctuate from year to year, making it difficult to attribute changes in performance to any single factor.

Still, the improvement of teachers from year to year and the overall high performance on the Texas state End of Course exam demonstrates that the Cognitive Tutor course was appropriate for this population. Additionally, students at this school tend to perform well above the state average on the Texas End of Course exam, making equivalent performance meaningful and leaving less room for improvement. These results were obtained in the first term of implementation of the Cognitive Tutor at Lewisville High School. We expect results to strengthen over time.

For more information or for additional copies of this report, please go to
<http://www.carnegielearning.com/results/reports>
or send email to
researchpartner@carnegielearning.com

1200 Penn Avenue; Suite 150; Pittsburgh, PA 15222; 1-888-244-7569;
www.carnegielearning.com

Suggested Citation: Carnegie Learning, Inc. (2001, September). *Results from Lewisville, TX* (Cognitive Tutor Research Report TX-00-01). Pittsburgh, PA.

©Copyright 2003, Carnegie Learning, Inc. All rights reserved. Carnegie Learning, Cognitive Tutor, SchoolCare and Learning by Doing are all registered marks of Carnegie Learning, Inc. All other company and product names mentioned are used for identification purposes only and may be trademarks of their respective owners. This product or portions thereof is manufactured under license from Carnegie Mellon University.

