

Results Report

El Paso Independent School District, El Paso, TX, 2000

Abstract

In the first term of implementation, Cognitive Tutor Algebra I was used among students at one school who had previously failed the first semester of Algebra I. Their performance was compared to that of similar students from the previous year using a traditional curriculum, as well as students at other schools using a traditional curriculum who had not previously failed Algebra I. Students using the Cognitive Tutor passed the Texas state End of Course exam at a higher rate than similar students from the previous year. Additionally, pass rates were higher among Cognitive Tutor students than among non-repeater students at all other high schools within the district except for two magnet schools.

Study Design:

Comparison Group

Measures:

Standardized exam: Texas
End of Course exam for
Algebra I

Study location:

El Paso Independent School
District, El Paso, TX

Study conducted by:

El Paso Independent School
District

Course assessed:

Cognitive Tutor Algebra I

Data collection date:

2000

District Information:

Type: Public, urban
Students Enrolled: 65,000

Ethnic Breakdown:

African American: 5%
Asian: 1%
Caucasian: 17%
Hispanic: 76%

Participants

Participants were students in El Paso Independent School District. Cognitive Tutor Algebra I was used in the fall of 2000 with a group of students (the repeater students, 85% of whom were Hispanic) who had previously failed the first semester of Algebra I at one school. Performance on the Texas state End of Course exam was compared to two other groups of students who used a traditional curriculum: repeater students at the same school during the previous year, and students from different schools within the district who did not fail the first semester of Algebra I.

Method

Students were administered the Texas state End of Course exam. Normally, this exam is administered in the spring semester at the end of the school year; however, the repeater students took the exam at the end of the fall semester the following school year since they had already failed a portion of Algebra I. (For example, the Cognitive Tutor students took the exam in December of 2000 rather than May of 2000.) In all, Cognitive Tutor students had at least one year of traditional algebra and one semester of Cognitive Tutor Algebra I.

Results

As shown in Table 1, pass rates on the Texas End of Course exam were higher among Cognitive Tutor students overall and for various subsets of students, including males, females, Hispanics, economically disadvantaged, limited English, and at-risk students. Chi 2 analyses indicate that pass rates were significantly better for Hispanics, and were marginally better overall for females.

	Cognitive Tutor (Dec. 2000)	Traditional Classroom (Dec. 1999)
Overall*	.39 n=114	.25 n=113
Male	.47 n=53	.32 n=69
Female*	.33 n=61	.14 n=44
Hispanic**	.41 n=97	.20 n=80
White	.25 n=12	.32 n=31
Economically Disadvantaged: yes	.43 n=42	.26 n=31
Economically Disadvantaged: no	.38 n=72	.24 n=82
Limited English Proficiency: yes	.50 n=6	.11 n=9
Limited English Proficiency: no	.39 n=108	.26 n=104
At-Risk	.36 n=64	.23 n=73
Career/Technology Ed	.39 n=18	.26 n=23

* marginally significant ($p < 0.10$)

** statistically significant ($p < 0.05$)

Table 1: Mean proportion of students who passed the Texas End of Course exam and number of students for various subgroups.

The pass rate on the Texas End of Course exam among Cognitive Tutor students (who were repeating Algebra I) also compares favorably with the pass rate of regular students (non-repeaters) at 10 other high schools within the district. With the exception of two magnet schools (one of which was math and science, the other being health occupations), the pass rate for Cognitive Tutor students equaled or exceeded that of all other schools.

Discussion

Cognitive Tutor Algebra I was a great success in its first term of implementation. After only one semester with the Cognitive Tutor, students who had previously failed Algebra I performed notably better on the Texas End of Course exam for Algebra I than students who did not use the Tutor. Results were especially strong for Hispanic students. Teachers within the district were very encouraged by these results, and some began using the Tutor in the spring semester rather than waiting until the beginning of the next school year.

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

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