EXECUTIVE SUMMARY

Background

The final Carnegie Learning Cognitive Tutor (CT) report (April 2005) studied 10 schools that implemented CT from one (Phase II) to two and one-half (Phase I) years. The results showed that, while the majority of teachers and students reacted positively to the program, CT students did not outperform their traditional mathematics (TM) counterparts on the Standards of Learning (SOL) Algebra 1 total test across two and one-half years. On the SOL Geometry total test, only in one year, students in Phase II CT schools demonstrated better performance than their TM counterparts.

This follow-up report presents analyses of the 2005-06 data on implementation and student achievement. The purpose of the report is to provide the Leadership Team and School Board with additional information for discussing the future of the CT program in Fairfax County Public Schools.

Findings

Implementation

• Three levels of implementation were identified based on ratings on a 4-point scale: low (containing multiple ratings of 1 and 2); moderate (containing a single rating of 1 or multiple ratings of 2); and high (containing ratings of 3 and 4 only).

• Over two-thirds of the CT schools met the requirement for 40 percent of computer time and use of CT instructional materials. However, only a few schools (2 of 9 for Algebra 1; 2 of 6 for Geometry) fully implemented collaborative learning activities and student presentations whereas others reported some degree of deviation from the prescribed activities.

Impact on Student Achievement

• CT students did not perform better than similar TM students on the SOL Algebra 1 and Geometry tests in 2005-06, a finding consistent with those from the previous years. Although occasional evidence of superior performance has been found for CT students (e.g., Phase II schools in Geometry in 2003-04), the overall results from three and one-half years of evaluation suggest that there is a lack of sufficient evidence to support the benefit of CT on student test performance as measured by the SOL Algebra 1 and Geometry tests.

• Despite the emergence of several cases (i.e., 3 of 6) where CT schools with a higher level of implementation also had higher average test scores on the SOL Algebra 1 and Geometry tests, no consistent pattern was sustained from the 2005-06 data to lend support to a solid conclusion that a higher level of implementation always yields better student test performance.

Recommendations

Discontinue the use of the program in the following phases:

• Continue the program until the current license expires in schools with at least a moderate level of implementation. Continue to monitor implementation in these schools.

• Discontinue the program for the 2007-08 school year in schools with a low level of implementation.