Apex Learning®

Back on Track: The Impact of Apex Learning Courses on Student Achievement and Graduation Rate

Houston Independent School District, TX

January 2018

↑ 8.6
Percentage Points
Increased Grad Rate

↓ 3.3
Percentage Points
Decreased Dropout

Introduction

When Dr. Terry Grier became superintendent of the Houston Independent School District (HISD), he promised to increase student achievement and reduce the district dropout rate. To that end, within four months of his superintendency, he launched Grad Labs—formerly titled Apex Learning Credit Recovery/Online Instruction Initiative. Having experienced success using Apex Learning for this purpose in two previous school districts, Dr. Grier adopted Apex Learning Courses for this initiative even though HISD already had 13 other digital curriculum providers.

By the end of the initiative's second year, Apex Learning had become the largest provider of completed online courses in the district, with an average of 73% of courses completed online each year following the first year of implementation (Table 1 located in the appendix).

Grad Labs was designed to create opportunities for at-risk high school students to earn credits needed for graduation. Students who failed three or more courses in a previous semester, had excessive absences, were retained while in high school, or dropped out and wanted to return to school could complete online courses from a school computer lab and/ or from home. Launched the spring semester of 2010 during the first academic year Grad Labs was implemented, Apex Learning Courses were initially available only for credit recovery use. The second year and thereafter, Apex Learning Courses were available for both credit recovery and original credit attainment. Table 1, (located in the appendix), shows the number and percent of courses completed, by purpose (credit recovery or initial credit), by school year, and by provider (Apex Learning or other vendors).

Grad Labs participants completing Apex Learning Courses that lead to a Texas state assessment participated in one of two assessment programs that were being administered simultaneously by the Texas Department of Education between 2010 and 2014. All students, including Grad Labs participants, enrolled as freshmen prior to 2012 participated in the Texas Assessment of Knowledge and Skills (TAKS) assessment program. The TAKS assessments were exit-level tests that measured student mastery of the state-mandated curriculum in four subject areas: English language arts (ELA), mathematics, science, and social studies. Students in the graduating class of 2014 and prior were required to pass the TAKS assessments to graduate.

Figure 1

Demographic Characteristics of HISD: 2014

Total Enrollment 2014 210,716
Urban Locale . . . . .City

Black /African American. 25%
White 8%
Hispanic 62%
Multiracial 5%

Economically Disadvantaged 80.6%
Limited English Proficient 30%
Students with Disabilities. 8%
Identified Gifted. 16%

Source: TEA, Profile: School District Snapshots

Study Overview

The purpose of this research was to conduct a systematic review of HISD publications to investigate the relationship between Apex Learning Courses use between 2010 and 2014 and 1) HISD graduation and dropout rates and 2). Grad Labs participants' academic outcomes. Questions to be answered by the study included:

1. What percent of Grad Labs participants using Apex Learning Courses graduated?

2. What is the relationship between Apex Learning Courses use and district graduation and dropout rates?

3. What percent of district graduates used Apex Learning Courses during their senior year?

4. What impact did Apex Learning Courses have on Grad Labs participant proficiency of state learning standards measured by Texas state assessments?

This research used secondary data published by the HISD Department of Research and Evaluation to answer each question.

- Table 1 (located in the appendix) shows the number of online courses completed and awarded credit by online course provider (Apex Learning and others).
- Table 2 shows additional characteristics of students who completed Apex Learning Courses through the Grad Labs initiative.

The number of students using Apex Learning Courses ranged between 1,374 to 6,711 each year. Although the demographic characteristics of students using Apex Learning Courses were not reported, Figure 1 (above) shows that students enrolled in the school district during the 2013–2014 school year were primarily Hispanic (62%) and African American (25%). Additionally, 80.6% were identified as being economically disadvantaged and 30% limited English proficient.

The impact of Apex Learning Courses on student proficiency on Texas state assessments was analyzed in two ways to overcome the limitation of not knowing whether Grad Labs participants were using Courses for initial credit or credit recovery prior to completing a state assessment. For TAKS assessments, the proficiency rates of students completing only retake administrations were compared by Apex Learning Courses use. For STAAR/EOC assessments, the same comparison was made using the results from initial test administrations only. In all cases, the results of students using Apex Learning Courses were compared to those of students completing HISD courses in traditional classroom settings.

Results

Grad Lab students graduated at a higher rate.

What percent of students using Apex Learning Courses in Grad Labs graduated?

On average, 92.8% of seniors completing Apex Learning Courses in Grad Labs graduated each year between 2012 and 2014 compared to 89.3% for seniors not using Apex Learning district wide (Figure 2).

From 2012 through 2014, the annual graduation rate of seniors using Apex Learning exceeded the annual rate of HISD seniors not using Apex Learning their senior year. During this time, Courses were used year-round for both original credit and credit recovery. In 2010, Apex Learning Courses were available for use in the spring and summer semesters for credit recovery only.

Figure 2:
Annual Graduation Rate by School Year
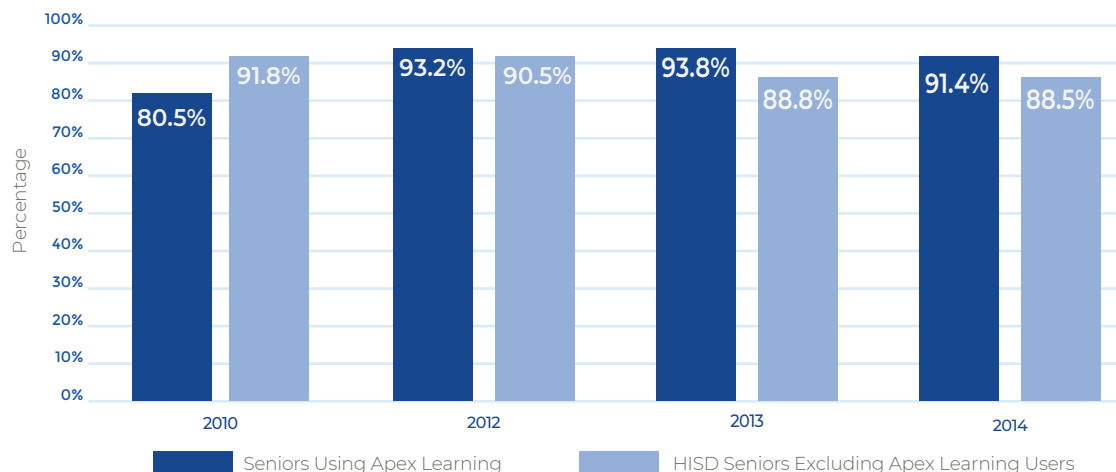
Group size range per year: Apex Learning from 472 to 2,921; HISD from 7,585 to 9,517.

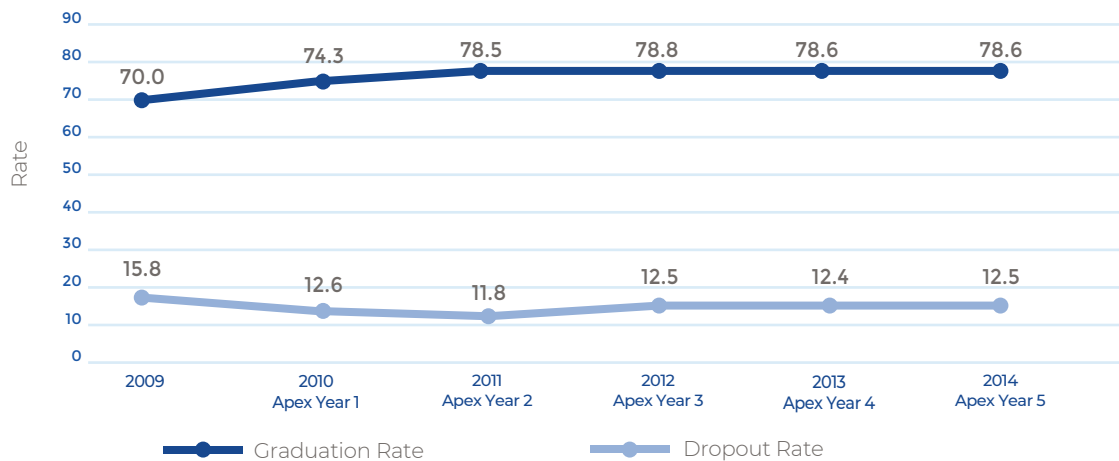Note: Graduation rate not available for 2011.

In 2010, Apex Learning Courses were available for use in the spring and summer semesters for credit recovery use only.
Each school year thereafter, courses were used year-round and were available for both original credit and credit recovery

The graduation rate increased 8.5 percentage points, and the dropout rate decreased 4 percentage points.

What is the relationship between Apex Learning Courses use and district graduation and dropout rates?

Compared to the year prior to using Apex Learning Courses, the HISD graduation rate and dropout rate improved by 8.5 and 4 percentage points, respectively, after the second year of implementation and remained stable through 2014. The improvement was statistically significant for both rates: graduation (t=123.92, df=5, p<.00) and dropout (t=941.49, df=5, p<.00).

Figure 3:

## HISD Four-Year Longitudinal Graduation and Dropout Rates

Source: HISD Graduation and Dropout Analysis Report 2013–2014, August 2015

What percent of district graduates used Apex Learning Courses during their senior year?

Following the first year of implementation, almost one-third of district graduates had completed at least one Apex Learning Course during their senior year.

Figure 4:

Percentage of HISD Graduates Completing Apex Learning Courses Senior Year
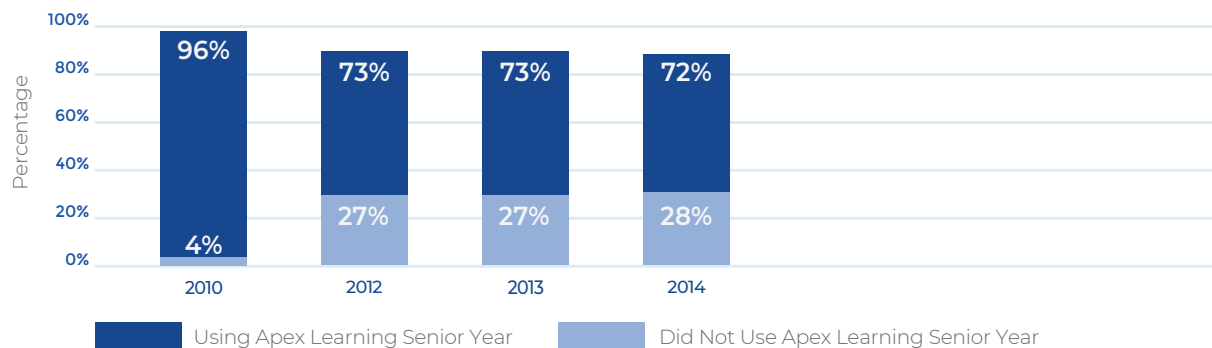
Graduation rate not available for 2011.

In 2010, Apex Learning Courses were available for use in the spring and summer semesters for credit recovery use only. Each school year thereafter, courses were used year-round and were available for both original credit and credit recovery.

Students using Apex increased proficiency on state exams and had similar or better performance than students not using Apex.

What impact did Apex Learning Courses have on the academic achievement of high school students participating in Grad Labs?

Students who failed prior administrations of the TAKS assessments demonstrated statistically significant gains on the retake assessments1 following Apex Learning Courses use compared to nonusers (Figure 5). Overall, the proficiency rate of students completing Apex Learning Courses was 46% greater than students completing HISD courses in traditional classroom settings (Table 3). Students completing Apex Learning Courses were:

- 50% more likely to achieve proficiency on the TAKS reading retake
- 44% more likely to achieve proficiency on the TAKS math retake
- 32% more likely to achieve proficiency on the TAKS science retake
- 20% more likely to achieve proficiency on the TAKS social studies retake

Figure 5:

TAKS Retake Administration Proficiency Rates: 2014
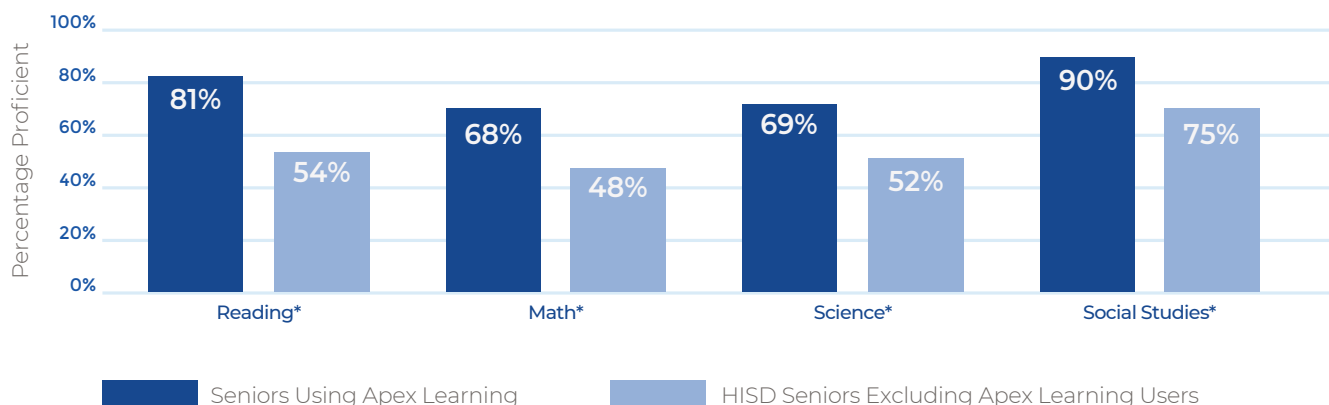
* Significant p<.00
Group size range per test: Apex Learning from 86 to 216; HISD All from 842 to 1,981.
1 HISD conducted analysis comparing proficiency of Apex Learning users to nonusers on TAKS retake assessments in 2014 only.

For students who took the STAAR/EOC assessments administered for the first time:

- Students completing Apex Learning Courses achieved proficiency on the English I assessment at a rate 32% greater than students completing courses in traditional classroom settings, a statistically significant gain for students using Apex Learning Courses (Figure 6).
- For all other assessments, students completing Apex Learning Courses were just as likely to achieve proficiency as students completing HISD courses in traditional classroom settings (Table 4).

Figure 6:

STAAR/EOC Proficiency Rates: First Test Administrations

Apex Learning Users   HISD All (Excluding Apex Learning Users)
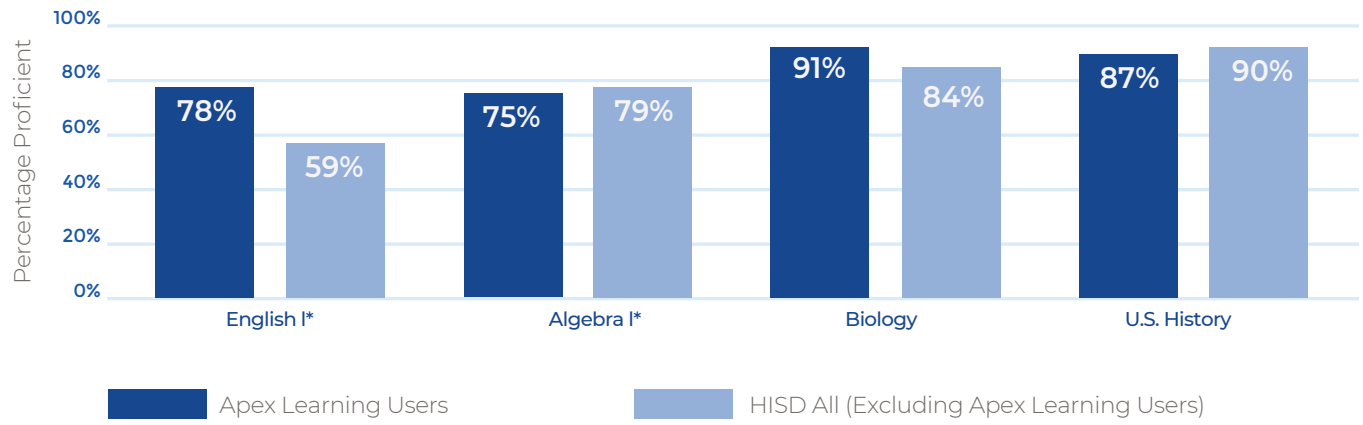
* Significant p<.00
Group size range per test: Apex Learning from 28 to 67; HISD All from 10,100 to 11,437.

Conclusion

The findings of this study suggest that Apex Learning Courses were significantly related to the academic gains made by Grad Labs participants and that those gains contributed to the improvement of district graduation and dropout rates.

Grad Labs participants' success contributed to the improvement of the district graduation rate and dropout rate:

- Almost 1/3 of district graduates completed an Apex Learning Course their senior year.

- Compared to the year prior to adopting Apex Learning Courses, the graduation rate improved by 8.6 percentage points and the dropout rate fell by 3.3 percentage points.

- On average, 92.8% of 12th grade seniors completing Apex Learning Courses in Grad Labs graduated each year between 2012 and 2014 compared to 89.3% for seniors not using Courses.

Grad Labs participants achieved the following outcomes following the completion of Apex Learning Courses:

- Compared to students completing courses in traditional classrooms, students completing Apex Learning Courses were as likely or more likely to pass Texas state assessments required for graduation:

    - Students using Courses were between 20% and 50% more likely to pass a TAKS retake assessment.

    - Students using Courses were just as likely to pass the initial administration of the STAAR/EOC for Algebra I, Biology, English II, and U.S. History and were 30% more likely to pass the English I exam.

Study Description

Study Design

This descriptive research used content and comparative analyses to explore the relationship between Apex Learning Courses use and academic outcomes.

Universe and Sample

The specific demographic characteristics of students included in each HISD report were not published. However, the characteristics of the district overall suggest the majority of students were primarily Hispanic and African American and were economically disadvantaged (see Figure 1).

Data Source

Data published by the HISD Research and Evaluation Department were used for this study. The reports containing the data are cited.

Data Limitations

Student outcomes, including achievement results from Texas state assessments, were not disaggregated by purpose for using Apex Learning Courses. As a result, results for Grad Labs participants using Courses for initial credit or credit recovery prior to completing a state assessment were combined and compared to students completing courses in a traditional classroom.

Analytical Strategy

To overcome data limitations, HISD reports were systematically examined to locate and select, for this study's use, data that would enable comparable group analysis. To that end, state assessment student achievement data selected for this study met the following criteria:

1. TAKS assessment results from retake administrations containing data for students using Apex Learning Courses and students completing HISD courses in traditional classroom settings
2. STAAR/EOC assessment results from first-time test administrations for students using Apex Learning Courses and students completing HISD courses in traditional classroom settings

Analysis

Tests of independent proportions were used to compare the percent proficient by Apex Learning use for all state assessments. Odds ratios were calculated to estimate the effect size of the differences.

Chi-square tests were used to compare the graduation and dropout rates over time.

Outcome Measures

This study reported student proficiency and graduation rates as outcome measures. Proficiency rates were reported for tests administered from two assessment programs included in the Texas Department of Education state accountability program.

- The Texas Assessment of Knowledge and Skills (TAKS) exit-level tests measured student mastery of the state-mandated curriculum in four subject areas: English language arts (ELA), mathematics, science, and social studies. Students enrolled in ninth grade for the first time in 2010–2011 or earlier were required to pass all four tests to meet graduation requirements. TAKS was administered in March, June, and October.

- The STAAR/EOC assessments measure students' academic performance in five high school courses: Algebra I, English I, English II, Biology, and U.S. History. Students enrolled in ninth grade for the first time in 2011-2012 or later must pass all assessments for courses in which they are enrolled to meet the state graduation requirement.

- The STAAR/EOC assessment program was created to replace the TAKS assessment program.

Two different graduation rates were reported:

- The Grad Labs program graduation rates are annual graduation rates. The rates reported use the annual graduation rate equation reported in the HISD Graduation and Dropout Analysis report. For seniors using Apex Learning Courses, the annual graduation rate was calculated by dividing the number of graduates by the total number of Courses users for a given year. For HISD seniors not using Courses, the annual rate was calculated by subtracting the number of Courses users from the total number of HISD 12th grade fall enrollments and the number of Courses graduates from the HISD total annual graduate count and then dividing the remaining number of graduates by the remaining fall enrollments.

- The HISD graduation rate reported in Figure 6 is the four-year longitudinal graduation and dropout rates that follow the federal accountability reporting guidelines.

References

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Appendix

Table 1. Completed Courses by School Year, Provider, and Course Credit										
Online Courses	2009–2010		2010–2011		2011–2012		2012–2013		2013–2014	
	N	%	N	%	N	%	N	%	N	%
Apex Learning	2,032	21.30	8,716	66.90	14,073	66.20	12,872	80.80	12,356	77.60
Credit Recovery	2,032	100	4,619	53.00	6,106	43.40	6,118	47.50	4,961	40.20
Original Credit	-	-	1,912	21.90	6,648	47.20	6,678	51.90	7,277	58.90
Other	-	-	2,185	25.07	1319	9.37	76	0.59	118	0.96
Total courses awarded credit	N/A	N/A	8,458	97.00	13,217	93.90	12,099	94.00	11,589	93.80
Other Providers	7,506	78.70	4,308	33.10	7,174	33.80	3,067	19.20	3,566	22.40
Credit Recovery	7,506	100	857	19.90	722	10.10	362	11.80	203	5.70
Original Credit	-	-	17	0.40	86	1.20	61	2.00	47	1.30
Other	-	-	3,434	79.71	6366	88.74	2644	86.21	3,316	92.99
Total courses awarded credit	N/A	N/A	4,029	93.50	6,773	94.40	2,835	92.40	3,288	92.20

Notes: Apex Courses are also used for Dual Credit, AP, STAAR Review, and TAKS Review.

Number of Apex Learning Courses available for original credit capped beginning 2013.

N/A = not reported by HISD

Table 2. Characteristics of Students Using Apex Learning Courses					
School Year	2010*	2011	2012	2013**	2014
Total Apex Courses Completed by High School Students	2,032	8,716	13,931	12,746	12,070
(N) Completed for Credit Recovery	2,032	4,619	6,106	6,118	4,961
(%) Apex Courses Completed for Credit Recovery	100%	53%	44%	48%	41%
Total Students Completing Apex Courses	1,374	3,120	6,711	6,656	6,400
(N) 12th grade users	472	1,576	2,805	2,921	2,909
(%) Apex Learning users in 12th grade	34%	51%	42%	44%	45%
Total 12th Grade Apex Learning Users	472	1,576	2,805	2,921	2,909
(N) Graduated senior year	380	N/A	2,615	2,741	2,660
(%) Apex Learning 12th grade users graduated senior year	81%	N/A	93%	94%	91%
HISD Annual Graduate Count	9,118	9,954	9,683	9,475	9,572
(N) Apex Learning 12th grade users graduated senior year	380	N/A	2,615	2,741	2,660
(%) HISD graduates completed Apex courses senior year	4%	N/A	27%	29%	28%
HISD 12th Grade Fall Enrollment (including Apex Learning)	9,989	10,952	10,616	10,506	10,715
(N) HISD Annual Graduate Count (including Apex Learning)	9,118	9,954	9,683	9,475	9,572
(%) HISD Annual Graduation Rate (including Apex Learning)	91.3%	90.9%	91.2%	90.2%	89.3%

Notes: N/A = not reported by HISD

*Apex Learning implemented for 2 semesters in 2010 and 3 semesters every year thereafter.

**Number of online enrollments for original credit use capped beginning school year 2013.

Table 3. Percent Proficient by Group, Texas Assessment of Knowledge and Skills (TAKS) Retake Administrations, School Year 2013–2014								
		Test Takers	Proficient and Above		Sig. p	Odds	Odds Ratio	Probability Ratio
Subject	Group	N	N	%				
Reading	Apex Learning Users	216	174	81%	0.00*	4.14	3.57	1.50
	HISD Apex Learning Nonusers	1,389	746	54%		1.16		
Math	Apex Learning Users	111	76	68%	0.00*	2.17	2.39	1.44
	HISD Apex Learning Nonusers	1,981	944	48%		0.91		
Science	Apex Learning Users	86	59	69%	0.00*	2.19	2.01	1.32
	HISD Apex Learning Nonusers	1,381	719	52%		1.09		
Social Studies	Apex Learning Users	188	169	90%	0.00*	8.89	2.96	1.20
	HISD Apex Learning Nonusers	842	632	75%		3.01		
Combined	Apex Learning Users	601	478	80%	0.00*	3.89	3.26	1.46
	HISD Apex Learning Nonusers	5,593	3,041	54%		1.19		

Effect sizes: insignificant OR<1.68; small 1.68 >= OR<3.47; medium 3.47>=OR<6.71; large OR>=6.71

Table 4. STAAR/EOC Assessments First Time-Test Takers									
Subject	School Year	Student Grade Level	Group	Test Takers	Proficient and Above		Sig. p	Odds	Odds Ratio	Probability Ratio
				N	N	%				
English I	2012	9	Apex Learning Users	67	52	78%	0.00*	3.47	2.42	1.32
			HISD Apex Learning Nonusers	11,437	6,739	59%		1.43		
Algebra I	2012	9	Apex Learning Users	28	21	75%	0.50	3.00	0.80	0.95
			HISD Apex Learning Nonusers	11,014	8,688	79%		3.74		
Biology	2012	9	Apex Learning Users	47	43	91%	0.17	10.75	2.03	1.09
			HISD Apex Learning Nonusers	10,212	8,590	84%		5.30		
English II	2013	10	Apex Learning Users	59	45	76%	0.19	3.21	1.30	1.07
			HISD Apex Learning Nonusers	10,394	7,404	71%		2.48		
U.S. History	2014	11	Apex Learning Users	30	26	87%	0.58	6.50	0.74	0.97
			HISD Apex Learning Nonusers	10,100	9,063	90%		8.74		

Effect sizes: insignificant OR<1.68; small 1.68 >= OR<3.47; medium 3.47>=OR<6.71; large OR>=6.71

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