



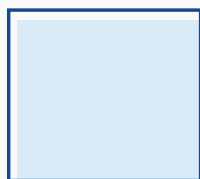
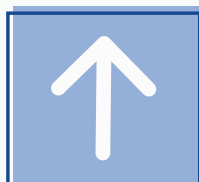
# A Study of the Impact of ACT® Tutorials on Student Achievement

School Year 2017–2018

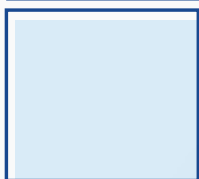
October 2018

Students ACT® Tutorials improved

62%



Pretest



Posttest



## Introduction

The purpose of this study is to examine the impact of Apex Learning ACT® Tutorials on student learning during the 2017-2018 school year. During the 2017-2018 school year, students from across the nation used more than 40,000 ACT® Tutorials modules, and this study examines the impact of ACT® Tutorials on student posttest achievement.

Apex Learning ACT® Tutorials provide instruction, practice, and assessment aligned to concepts assessed by the ACT® English, math, and reading subject tests. Tutorials for subject-area tests provide students an individualized course of study that includes direct instruction and practice based on the results of unit pretests. The course of study continually adapts to students' unique learning needs as they complete unit modules and formative assessments.

After completing 100% of the unit modules, students complete a posttest to evaluate their progress. Tutorials assessment results link students' performance to concepts assessed by the ACT® tests, quickly identifying where students have demonstrated content mastery and where they still need to focus their learning.

## Results

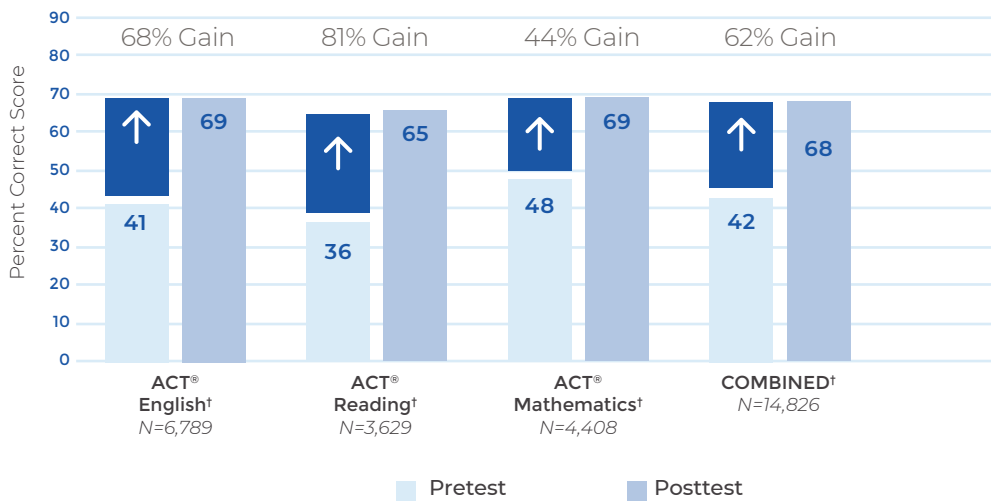
*Students using Tutorials achieved similar or higher scores on EOC retake tests.*

Results of paired-samples t-tests (Table 2) suggest that ACT® Tutorials had a statistically significant impact on Tutorials posttest achievement compared to pretest performance. The findings suggest:

- Student achievement improved 62% from pretest to posttest following use of ACT® Tutorials combined (Figure 1).
- The gain from pretest to posttest was equivalent to 32 percentile points for Tutorials combined (Figure 2).

Figure 1 shows posttest improvement ranged from 44% to 81% by subject and 62% combined following use of ACT® Tutorials. Table 1, in the appendix, shows pretest, Test It, and posttest descriptive statistics.

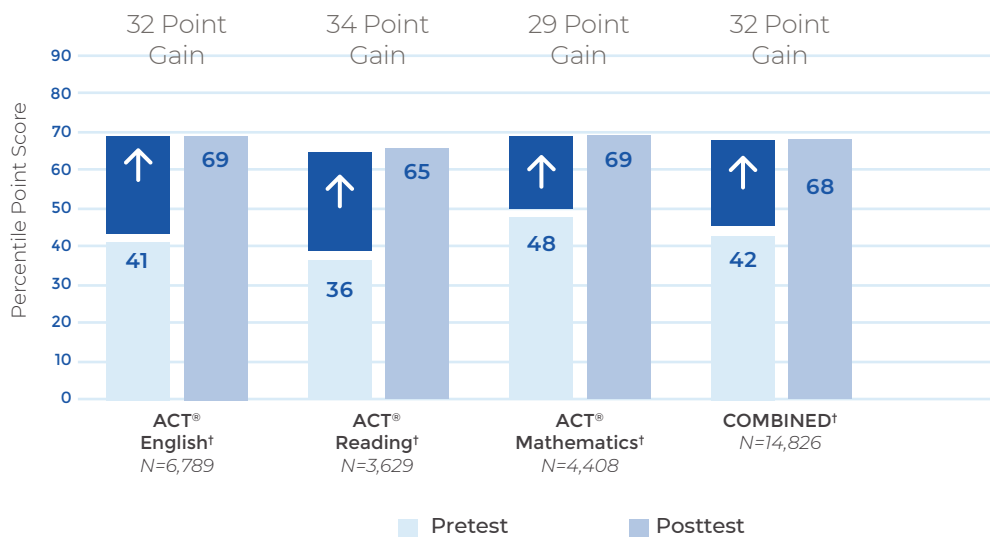
**Figure 1**  
ACT® Tutorials Average Pretest, Posttest, and Gain: Percent Correct Score



† Statistically significant,  $p < .001$   
N=number of modules included in the analysis

Figure 2 shows the equivalent percentile corresponding to the average ACT® Tutorials pretest and posttest score, and the gain between assessments. Student posttest achievement improved between 29 and 34 percentile points by subject relative to pretest achievement and 32 percentile points overall following ACT® Tutorials use (Figure 2).

**Figure 2**  
ACT® Tutorials Average Pretest, Posttest, and Gain: Equivalent Percentile Score



† Statistically significant,  $p < .001$   
N=number of modules included in the analysis

## Apex Learning Tutorials Description

Apex Learning ACT® Tutorials provide targeted instruction, practice, and review of content and skills assessed by each test included in the ACT® exam. Pretests and embedded formative assessments build an individualized course of study for each student that includes direct instruction, practice, review, and assessment, and that continually adapts to each student's unique learning needs.

## Apex Learning Tutorials Description

### Study Design

Apex Learning ACT® Tutorials provide targeted instruction, practice, and review of content and skills assessed by each test included in the ACT® exam. Pretests and embedded formative assessments build an individualized course of study for each student that includes direct instruction, practice, review, and assessment, and that continually adapts to each student's unique learning needs.

### Participants

During the 2017-2018 school year, students from across the nation used more than 40,000 ACT® Tutorials modules. Student enrollments with completed unit pretests, 100% of unit modules, and unit posttests were included in the analytical dataset.

### Data Preparation

Apex Learning provided 42,014 records of student level module data. Thirty-five percent (35%) of records containing pretest, Test It, and posttest scores were included in the analytical dataset.

### Analysis

Paired-samples t-tests were used to determine if the average module posttest score was significantly greater than the average module pretest score by subject area and subjects combined. Cohen's d was used as a measure of effect size.

### Limitations

A single group design was used to analyze the impact of Tutorials use on pretest to posttest gain. Single group design studies are limited by not having a comparison group to control for events unrelated to the intervention that could impact posttest performance. Events unrelated to the intervention include participant maturation, testing, instrument decay, and regression to the mean.

### Outcome Measures

The outcome measure used in this study is the Tutorials posttest score reported at the module level.

## Appendix

Table 1. Module Level Descriptive Statistics								
Subject		Enrollment ID	Initial Pre-test Score		Max Test It Score		Max Post-test Score	
		N	Mean	SD	Mean	SD	Mean	SD
English	ACT English	6,789	40.90	31.41	71.97	29.36	69.41	32.58
	ACT Reading	3,629	36.13	29.57	70.54	30.03	65.28	32.32
Math	ACT Mathematics	4,408	47.52	27.31	69.15	28.93	69.23	29.20
Combined		4,826	41.52	29.43	70.55	29.44	67.97	31.36

Table 2. Paired-Samples T-Tests						
Subject		Paired Differences Mean	t	df	Sig. p	Effect Size D
English	ACT English	28.50	59.64	6,788.00	0.00†	0.91
	ACT Reading	29.15	45.48	3,628.00	0.00†	0.99
Math	ACT Mathematics	21.71	49.93	4,407.00	0.00†	0.79
Combined		26.45	88.85	14,825.00	0.00†	0.90

† Statistically significant,  $p < .001$



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### Contact

#### Apex Learning

1215 Fourth Ave., Suite 1500

Seattle, WA 98161

Phone: 1 (206) 381-5600

Fax: 1 (206) 381-5601

[ApexLearning.com](http://ApexLearning.com)