



THE EDTECH COLLECTIVE

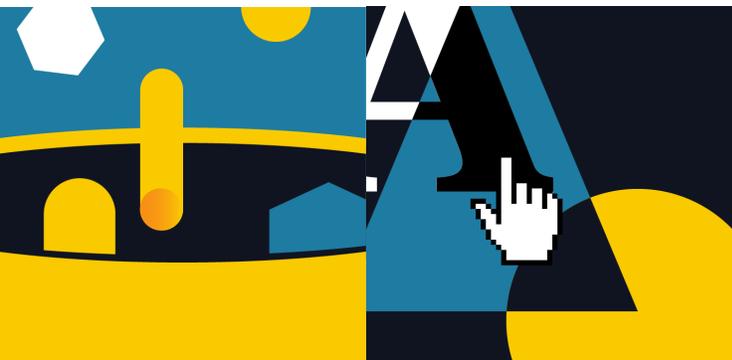
Instructure Partner Ecosystem

K12 TUTORING: VIRGINIA

ESSA Level III Study (2023–24)

Molly Henschel, Ph.D., Associate Director of Research
Andrew Scanlan, Senior Researcher

January 31, 2025



EXECUTIVE SUMMARY

K12 Tutoring contracted with Instructure, a third-party edtech research company, to examine the relationship of the total number of minutes in tutoring sessions with English language arts (ELA) and math learning outcomes. Using the Every Student Succeeds Act (ESSA) standards as guidance in developing a study design, findings in this report align with ESSA Level III (Promising Evidence).

Study Sample and Methodology

This study used a correlational design to align with ESSA evidence standards. It included 626 math students and 507 reading students in 4th–8th grade from one school district in Virginia. Researchers used internal *K12 Tutoring* implementation data (i.e., the total number of minutes) and demographics from the 2023–24 school year. In addition, analyses included Virginia Standards of Learning (SOL) assessment math and ELA scores from spring 2023 and 2024.

Analyses included descriptive statistics and regression models to examine the relationship of different times in *K12 Tutoring* sessions and students' spring 2024 SOL math and ELA performance (while controlling for spring 2023 performance).

Implementation

Math students averaged 557 minutes (9 hours), ranging from 30 to 2,460 minutes. Reading students averaged less time with 423 minutes (7 hours), ranging from 30 to 1,680 minutes.

Main Research Findings

Analyses included descriptive statistics and regression models to examine the relationship of the total number of minutes in *K12 Tutoring* sessions and students' spring 2024 SOL math and ELA performance (while controlling for spring 2023 performance).

Main Research Findings	
	There was a statistically significant, positive relationship for the total number of minutes and SOL math scores in 4 th , 5 th , and 7 th grades.
	There was no statistically significant relationship for the total number of minutes and SOL ELA scores.

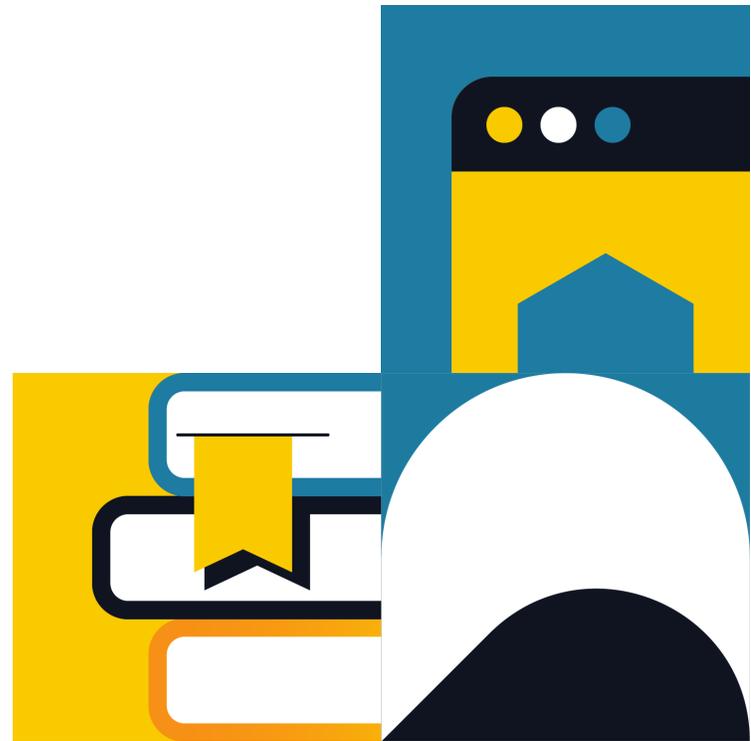
Conclusions

Given the positive findings, this study provides results to satisfy ESSA evidence requirements for Level III (Promising Evidence).



TABLE OF CONTENTS

INTRODUCTION	4
STUDY DESIGN AND METHODS	5
IMPLEMENTATION	6
STUDENT OUTCOMES	7
CONCLUSIONS	9
REFERENCES	10
APPENDIX A	11



INTRODUCTION

K12 Tutoring is a high-dosage tutoring solution that aims to reduce learning loss and empower students to regain and surpass their academic potential. As part of their ongoing efforts to demonstrate the effectiveness of their solution, *K12 Tutoring* contracted with Instructure, a third-party edtech research company, to examine the relationship between usage of *K12 Tutoring* and students' English language arts (ELA) and math learning outcomes. Using the Every Student Succeeds Act (ESSA) standards as guidance in developing a study design, findings in this report align with ESSA Level III (Promising Evidence). The following research questions guided this study:

Implementation

- 1) On average, what total number of minutes did 4th–8th grade students receive *K12 Tutoring* in math and reading?

Student Outcomes

- 2) How did 4th–8th grade students' math and ELA achievement vary based on variation in the total number of minutes spent on *K12 Tutoring*?

This report details the study design and methods, implementation, findings, and conclusions.



STUDY DESIGN AND METHODS

This section of the report briefly describes the study participants, measures, and analysis methods.

Study Design

This study used a correlational design to align with ESSA evidence standards. It included students who participated in *K12 Tutoring* during the 2023–24 school year.

Setting

The study included 4th–8th grade students from seven schools in one school district in Virginia. The final sample included 626 math students and 507 reading students, with some students potentially included in both groups.

Participants

Based on student demographic data provided by the district, the math sample was evenly distributed across grades: 4th grade (18%), 5th grade (22%), 6th grade (19%), 7th grade (23%), and 8th grade (18%). Eighteen percent of students identified as belonging to a racial or ethnic minority group, and 22% identified as having a disability. The district identified 61% of the students in the sample as economically disadvantaged.

The reading sample was also evenly distributed across 4th grade (23%), 5th grade (19%), 6th grade (18%), 7th grade (19%), and 8th grade (20%), with 16% of students belonging to a racial or ethnic minority group and 26% having a disability. Fifty-seven percent of the students were economically disadvantaged.

Measures

Researchers used internal *K12 Tutoring* implementation data (i.e., the total number of minutes). Researchers also used Virginia Standards of Learning (SOL) assessment math and ELA scale scores, which range from 0 to 600, as the primary achievement outcome and demographics provided by the district.

Data Analysis

K12 Tutoring uploaded de-identified data from the 2023–24 school year through a secure file transfer protocol link to Instructure researchers. Researchers characterized usage (i.e., the total number of minutes) using descriptive statistics. Researchers then conducted regression models to examine the influence of varying total number of minutes in *K12 Tutoring* on students' spring 2024 SOL performance, while controlling for prior year performance on the SOL (spring 2023).

IMPLEMENTATION

This section examines how *K12 Tutoring* was used during the 2023–24 school year. Researchers analyzed the total amount of time students spent in tutoring sessions to understand the extent of their engagement with the program.

1

On average, what total number of minutes did 4th–8th grade students receive *K12 Tutoring* in math and reading?

The total number of minutes that students received *K12 Tutoring* varied across grades and subjects. For math, all students averaged 557 minutes (9 hours), with a range of 30 to 2,460 minutes. In reading, all students averaged slightly less time with 423 minutes (7 hours), with a range of 30 to 1,680 minutes. Table 1 includes the variation in usage by grade level and subject.

Table 1. *K12 Tutoring* average usage by subject and grade level

Grade	Average Number of Minutes	Range of Minutes
Math (<i>n</i> = 626)	557	30 to 2,460
4 th Grade (<i>n</i> = 115)	374	30 to 600
5 th Grade (<i>n</i> = 137)	365	60 to 600
6 th Grade (<i>n</i> = 120)	919	60 to 1,680
7 th Grade (<i>n</i> = 144)	674	30 to 2,460
8 th Grade (<i>n</i> = 110)	436	60 to 1,290
Reading (<i>n</i> = 507)	423	30 to 1,680
4 th Grade (<i>n</i> = 119)	308	60 to 600
5 th Grade (<i>n</i> = 96)	214	30 to 510
6 th Grade (<i>n</i> = 92)	548	30 to 1,680
7 th Grade (<i>n</i> = 97)	497	30 to 1,650
8 th Grade (<i>n</i> = 103)	570	30 to 1,530

STUDENT OUTCOMES

The following sections examine how *K12 Tutoring* relates to student achievement on the spring 2024 SOL math and ELA assessment. Researchers controlled for prior achievement on the corresponding SOL content area (spring 2023). Additional information on these analyses and findings can be found in Appendix A.

Researchers reported statistically significant findings at the $p < .05$ level, which indicates a 95% probability that observed differences in student outcomes are not due to chance. To determine the magnitude of the relationship, researchers also calculated standardized effect sizes (omega squared, Ω^2). Standardized beta coefficients are translated into percentile point differences using the WWC Improvement Index (WWC, 2022). Significant findings are marked blue (positive results) or orange (negative results) in figures with an asterisk. Findings that are not statistically significant are marked gray.

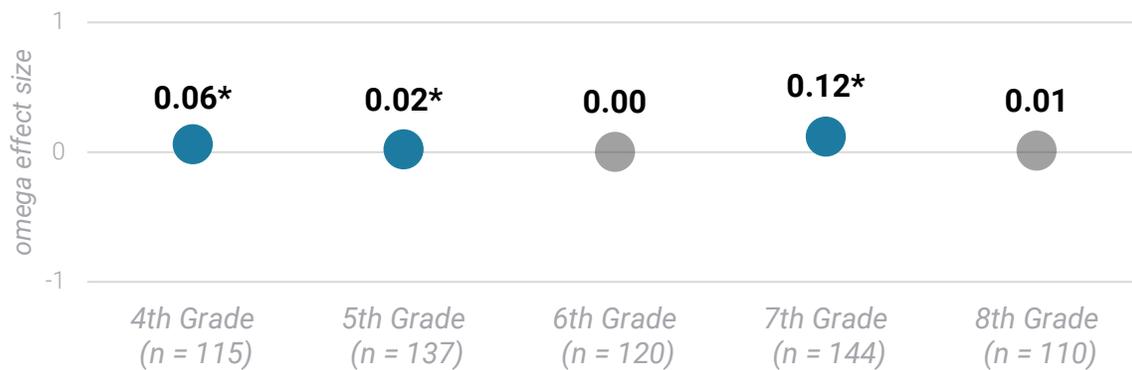
2

How did 4th–8th grade students' math and ELA achievement vary based on variation in the total number of minutes spent on *K12 Tutoring*?

Researchers conducted multiple linear regression models to examine the relationship between varying *K12 Tutoring* implementation by grade level and subject with spring 2024 math and ELA performance, controlling for prior year achievement.

Math outcomes. Results showed multiple statistically significant, positive relationships between the total number of minutes spent in *K12 Tutoring* sessions and SOL math scores. Specifically, the more time spent in tutoring was positively related with higher SOL math scores for 4th grade ($p = 0.01$, $\Omega^2 = 0.06$), 5th grade ($p = 0.49$, $\Omega^2 = 0.02$), and 7th grade ($p < 0.001$, $\Omega^2 = 0.12$; See Figure 1). This translates to every 60 minutes (1 hour) spent in *K12 Tutoring* sessions, an average student's math score increased by 3.92 (4th grade), 2.36 (5th grade), and 1.13 (7th grade) percentile points.

There were statistically significant, positive relationships for total number of minutes and SOL math scores in 4th, 5th, and 7th grades.

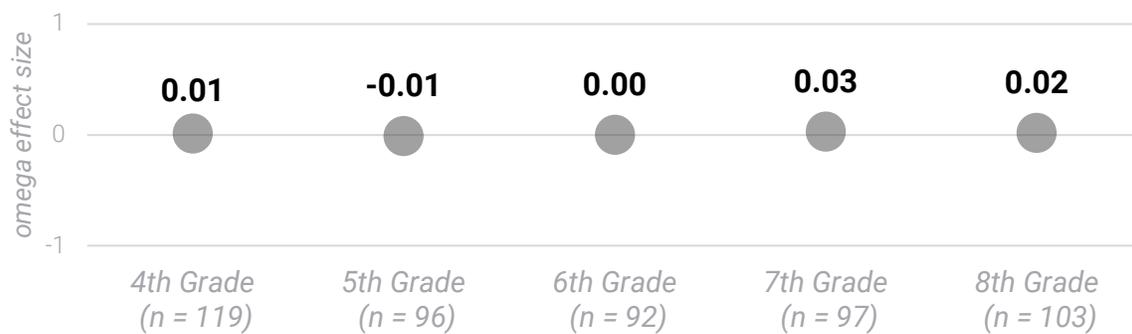


Note: Statistically significant findings are reported at the $p < .05$ level and indicated with an asterisk in the figure.

Figure 1. Omega squared effect sizes of regression models examining the relationship between total number of minutes and SOL math scores

Reading outcomes. Results showed no statistically significant relationships between the total number of minutes spent in *K12 Tutoring* sessions and SOL ELA scores (see Figure 2).

There were no statistically significant relationships for total number of minutes and SOL ELA scores.



Note: Statistically significant findings are reported at the $p < .05$ level.

Figure 2. Omega squared effect sizes of regression models examining the relationship between total number of minutes and SOL ELA scores

CONCLUSIONS

In conclusion, findings indicate a statistically significant positive relationship between the total number of minutes in math *K12 Tutoring* sessions and SOL math scores for 4th, 5th, and 7th grades. There were no statistically significant relationships between the number minutes and SOL ELA scores. It is important to note that this study included smaller sample sizes across grades and content areas. Future research could explore outcomes in schools that include more students receiving tutoring services to provide a more comprehensive understanding of the program's efficacy.

Given the positive findings, this study provides results to satisfy ESSA evidence requirements for Level III (Promising Evidence). Specifically, this study met the following, minimum criteria for Level III:

- ✓ Correlational study elements
- ✓ Proper design and implementation
- ✓ Statistical controls through covariates
- ✓ At least one statistically significant, positive correlation with statistical controls for selection bias

REFERENCES

Every Student Succeeds Act, Pub. L. No. 114-95 (2015).
<https://www.govinfo.gov/app/details/PLAW-114publ95>.

What Works Clearinghouse (2022). What Works Clearinghouse procedures and standards handbook, version 5.0. U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance (NCEE). This report is available on the What Works Clearinghouse website at <https://ies.ed.gov/ncee/wwc/Handbooks>.



APPENDIX A

The following section provides additional details regarding analyses examining the relationship between the total number of minutes in *K12 Tutoring* and spring 2024 performance on the Virginia Standards of Learning (SOL) assessment. Researchers reported statistically significant findings at the $p < .05$ level and calculated standardized effect sizes.

How did 4th–8th grade students' math and ELA achievement vary based on variation in the total number of minutes spent on *K12 Tutoring*?

Researchers ran multiple linear regression analyses with the spring 2024 SOL math and ELA test scale scores as the outcomes of interest. The models included the total number of minutes in *K12 Tutoring* sessions by grade level and spring 2023 SOL math and ELA test scale scores, respectively (see Table A1).

Table A1. Greater details of linear regressions between the total number minutes and student achievement on spring 2024 SOL math and ELA scores

Grade	Coefficient	Standard Error	t-value	p-value	Effect size (Ω^2)
Math ($n = 626$)					
4 th Grade ($n = 115$)	0.08	0.03	2.82	0.01	0.06*
5 th Grade ($n = 137$)	0.05	0.02	1.98	0.049	0.02*
6 th Grade ($n = 120$)	0.01	0.01	1.10	0.27	<0.001
7 th Grade ($n = 144$)	0.03	0.01	4.48	0.00	0.12*
8 th Grade ($n = 110$)	-0.01	0.01	-1.31	0.19	0.01
Reading ($n = 507$)					
4 th Grade ($n = 119$)	0.01	0.02	0.31	0.76	0.01
5 th Grade ($n = 96$)	-0.02	0.04	-0.47	0.64	-0.01
6 th Grade ($n = 92$)	0.01	0.01	1.07	0.29	0.00
7 th Grade ($n = 97$)	0.02	0.01	1.94	0.06	0.03
8 th Grade ($n = 103$)	0.01	0.01	1.72	0.09	0.02