THE EDTECH COLLECTIVE
Instructure Partner Ecosystem

LINCOLN EMPOWERED

ESSA Level III Study

Prepared for:
Lincoln Learning

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EXECUTIVE SUMMARY

Lincoln Learning contracted with Instructure to examine the association between students' use of Lincoln Empowered and their learning outcomes. Using the Every Student Succeeds Act (ESSA) standards as guidance in developing a study design, findings in this report align with Level III requirements (Promising Evidence).

Study Sample and Methodology

This study used a correlative design to align with ESSA Level III evidence standards. The total study sample consisted of 649 unique students who completed at least one full-year Lincoln Empowered course during the 2024–25 school year, spanning four grade bands: K–2 (n = 161), 3–5 (n = 141), 6–8 (n = 105), and 9–12 (n = 246). For each grade band, analysis was conducted across four core subject areas: English Language Arts (ELA), Mathematics, Science, and Social Studies.

Researchers used two measures to understand the implementation and effectiveness of Lincoln Empowered courses on student learning outcomes: (1) usage data, measured by total minutes spent on course completion and (2) outcome data, which used internal end-of-course grade, calculated by averaging the two semester class grades within a full-year course.

Researchers used descriptive statistics to describe participant characteristics and support analyses of implementation. Then, researchers conducted regression analyses to examine the association between students' Lincoln Empowered usage and their end-of-course grades. The analyses included students' school of enrollment as a covariate to control for potential selection bias.

Main Research Findings

Grades K–2	
●	There was no statistically significant association between Lincoln Empowered usage and Grades K–2 students' end-of-course grades for ELA, Mathematics, Science, and Social Studies.

Grades 3–5	
+	Increased number of minutes Grades 3–5 students spent on Lincoln Empowered courses positively associated with higher end-of-course grades in ELA, and this result was statistically significant.
●	There was no statistically significant association between Lincoln Empowered usage and Grades 3–5 students' end-of-course grades for Mathematics, Science, and Social Studies.

Grades 6–8	
+	Increased number of minutes Grades 6–8 students spent on Lincoln Empowered courses positively associated with higher end-of-course grades, and the results are statistically significant for all four subject areas: ELA, Mathematics, Science, and Social Studies.

Grades 9–12	
+	Increased number of minutes Grades 9–12 students spent on Lincoln Empowered courses positively associated with higher end-of-course grades, and the results are statistically significant for all four subject areas: ELA, Mathematics, Science, and Social Studies.

Conclusions

This study satisfies ESSA evidence requirements for Level III (Promising Evidence) given the positive, statistically significant association between Lincoln Empowered usage and end-of-course grades for students in Grades 3–5 (ELA only), Grades 6–8 (all subject areas examined) and Grades 9–12 (all subject areas examined).

TABLE OF CONTENTS

INTRODUCTION 5

METHODS 5

IMPLEMENTATION 8

STUDENT LEARNING OUTCOMES 10

LIMITATIONS AND FUTURE RESEARCH 14

CONCLUSIONS 14

REFERENCES 15

APPENDIX A. LINCOLN EMPOWERED LOGIC MODEL 16

APPENDIX B. ADDITIONAL INFORMATION ON STUDY FINDINGS 17

INTRODUCTION

Lincoln Learning developed Lincoln Empowered to offer a personalized, standards-based curriculum that seamlessly blends content and best-in-class technology to create a pathway for students to own their learning.

As part of its efforts to evaluate the effectiveness of Lincoln Empowered, Lincoln Learning contracted with Instructure to examine the impact of Lincoln Empowered usage on student learning outcomes in grades K–12. After co-developing a logic model for Lincoln Empowered (Appendix A; Henschel, 2023), Instructure designed the study to satisfy Level III requirements (Promising Evidence) according to the Every Student Success Act (ESSA, 2015), and had the following research questions:

Research Questions

Implementation

1. On average, how many minutes did students spend on completing Lincoln Empowered courses for English Language Arts (ELA), Mathematics, Science, and Social Studies, respectively, during the 2024–2025 school year?

Outcome

2. While controlling for the student's school of enrollment, how is the total number of minutes students spent on completing a Lincoln Empowered course associated with their end-of-course grade for ELA, Mathematics, Science, and Social Studies, respectively?

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

METHODS

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

Study Design, Setting, and Participants

This study used a treatment-only, correlative design to align with ESSA Level III evidence standards. The total study sample consisted of 649 unique students[1] who completed at least one full-year Lincoln Empowered course during the 2024–25 school year, spanning four grade bands: K–2 (n = 161), 3–5 (n = 141), 6–8 (n = 105), and 9–12 (n = 246). For each grade band, analysis was conducted across four core subject areas: ELA, Mathematics, Science, and Social Studies[2]. Table 1 shows the number of students by grade band and subject area.

Table 1. Number of Students by Grade Band and Subject Area

Grade band	Subject Area			
	ELA	Mathematics	Science	Social Studies
K–2	152	144	39	37
3–5	133	106	44	41
6–8	86	87	82	87
9–12	164	164	102	66

Measures

To accurately assess the association between Lincoln Empowered usage and students' learning outcomes, it is necessary to account for the structure of the Lincoln Empowered curriculum. Specifically, each full-year course consists of two distinct semester-long classes. Because the raw data captured usage and learning outcome at the semester level, these metrics were aggregated to reflect the full-year usage and performance. Note that all analyses were stratified by grade band (K–2, 3–5, 6–8, 9–12) and core subject area (ELA, Mathematics, Science, and Social Studies). The variables were operationalized as follows:

[1] The total number of unique students per grade band exceeds the overall unique student count because four students were enrolled in both Grades 6–8 and Grades 9–12 courses. These students were kept in the final dataset as the courses they completed were of different subject areas.
[2] Students who completed more than one full-year Lincoln Empowered course within the same subject area were removed from the study, as enrollment in multiple full-year courses could skew the time a student is able to dedicate to any single course.

Lincoln Empowered Usage. This is represented by the total number of minutes students spent on a full-year Lincoln Empowered course. Researchers calculated this by summing all minutes spent across both semester classes for a specific course.

Learning Outcomes. This is represented by a composite end-of-course grade. Researchers calculated this by averaging the final grades of the two semester classes for a specific course.

Student-level Covariates. Researchers included students' school of enrollment as a control variable in the regression analyses.

Data Analysis

Descriptive statistics were first used to summarize participant characteristics and examine usage patterns. Then, researchers conducted linear regressions to examine how Lincoln Empowered usage was related to students' end-of-course grades. The analyses included a student-level covariate to control for potential selection bias (i.e., school of enrollment), and were stratified by grade band (K–2, 3–5, 6–8, 9–12) and core subject area (ELA, Mathematics, Science, and Social Studies).

IMPLEMENTATION

This section examines how students used Lincoln Empowered during the 2024–25 school year to better understand the extent of student engagement with the platform.

1

On average, how many minutes did students spend on completing Lincoln Empowered courses for ELA, Mathematics, Science, and Social Studies, respectively, during the 2024–2025 school year?

Table 2 shows the descriptive statistics of Lincoln Empowered usage (e.g., number of students (n), average minutes spent on course completion, standard deviation (SD), minimum, and maximum) by grade band and subject area.

Table 2. Average Lincoln Empowered Usage by Grade Band and Subject Area

Number of Minutes by Grade Band	*n*	Average	SD	Minimum	Maximum
Grades K–2[3]					
ELA	152	8126	4468	812	20399
Mathematics	144	3961	2317	499	10232
Science	39	1799	967	217	4262
Social Studies	37	2205	1221	305	5335
Grades 3–5					
ELA	133	10266	4800	1509	23095
Mathematics	106	6524	3358	1313	15975
Science	44	5632	3555	1074	14374
Social Studies	41	5706	2860	1279	11819
Grades 6–8					
ELA	86	5232	4177	361	16264
Mathematics	87	6881	4470	370	17689
Science	82	4260	2972	185	13586
Social Studies	87	5278	4007	310	15948

[3] Lincoln Empowered courses for Grades K–2 Science and Social Studies though are structured as a full-year course only had 90 hours of instructional time, as compared to other grade bands that had 180 hours of instructional time. While this does not impact the analyses, readers must take caution when interpreting the implementation analyses.

Number of Minutes by Grade Band	*n*	Average	SD	Minimum	Maximum
Grades 9–12					
ELA	164	3110	1981	269	8389
Mathematics	164	3175	1721	319	8230
Science	102	3146	1870	630	8720
Social Studies	66	2795	1574	165	5984

Overall, researchers observed that the number of students who completed full-year Lincoln Empowered courses in Grades K–2, 3–5, and 9–12 was generally higher in ELA and Mathematics than in Science and Social Studies, while remaining comparable across all subject areas in Grades 6–8. Although students across all subject areas and grade bands demonstrated consistent engagement, students in Grades K–5 dedicated more time to ELA than other subject areas. In contrast, the average time spent on completing a Lincoln Empowered course was more uniform across subject areas in the secondary grades (6–12). Notably, the total time spent on course for Grades 9–12 was relatively lower than the other three grade bands.

STUDENT LEARNING OUTCOMES

The following section examines how Lincoln Empowered usage is associated with students' end-of-course grades during the 2024–25 school year.

2

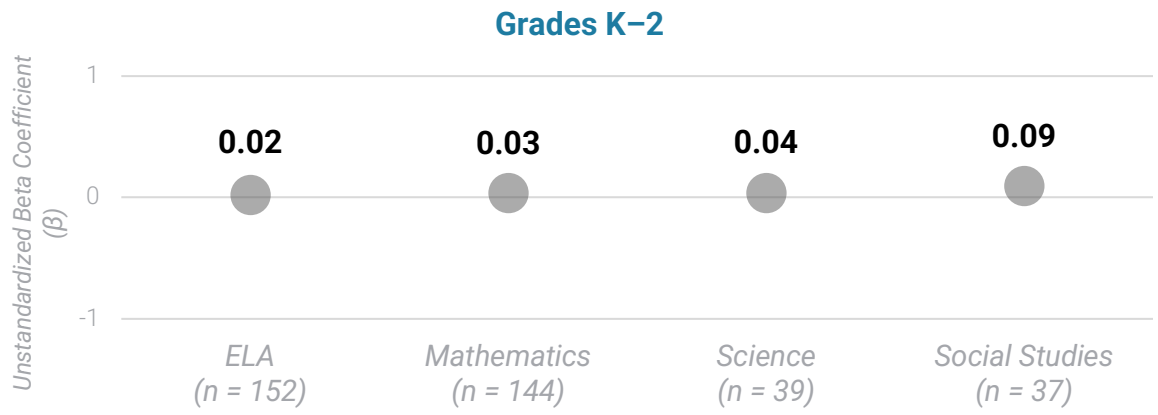
While controlling for the student's school of enrollment, how is the total number of minutes students spent on completing a Lincoln Empowered course associated with their end-of-course grade for ELA, Mathematics, Science, and Social Studies, respectively?

To address the outcome question, researchers employed linear regressions examining the associations between Lincoln Empowered usage and students' end-of-course grades, controlling for their schools of enrollment. Analyses were stratified by grade band (K–2, 3–5, 6–8, 9–12) and core subject area (ELA, Mathematics, Science, and Social Studies).

Researchers reported statistically significant findings at the $p < .05$ level, which indicates that such results would be unlikely to have occurred due to chance alone. Significant, positive findings are marked **blue** in figures with an asterisk. Findings that are not statistically significant are marked **gray**. Additional information on these analyses and findings can be found in Appendix B.

Grades K–2. For Grades K–2 students, analyses of the association between time spent on Lincoln Empowered courses and student end-of-course grades revealed no statistically significant findings across any of the four core subject areas (see Figure 1). While the direction of the association was positive for all subject areas, the coefficients did not reach the threshold for statistical significance.

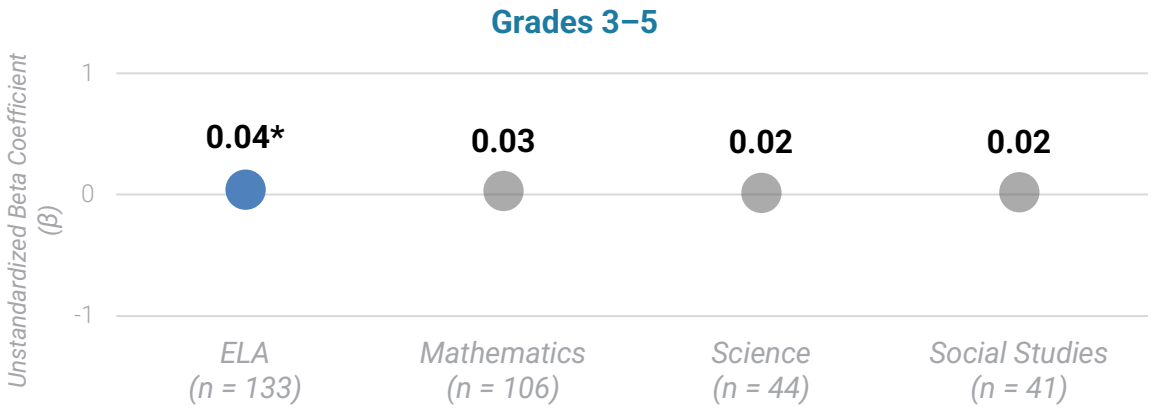
Figure 1
Association Between Time Spent on Lincoln Empowered Courses and End-of-Course Grades for Grades K–2 Students by Subject Area



Note. Statistically significant findings are reported at the $p < .05$ level and indicated with an asterisk in the figure. Unstandardized Beta (β) coefficients represent the predicted change in student end-of-course grades for every 60 minutes of Lincoln Empowered usage.

Grades 3–5. As illustrated in Figure 2, a statistically significant positive association was found between time spent on Lincoln Empowered courses and student end-of-course grades in ELA (β = 0.04, p = .04) for Grades 3–5 students. While the direction of the associations was positive for Mathematics (β = 0.03, p = .38), Science (β = 0.02, p = .81), and Social Studies (β = 0.02, p = .80), these results did not reach statistical significance.

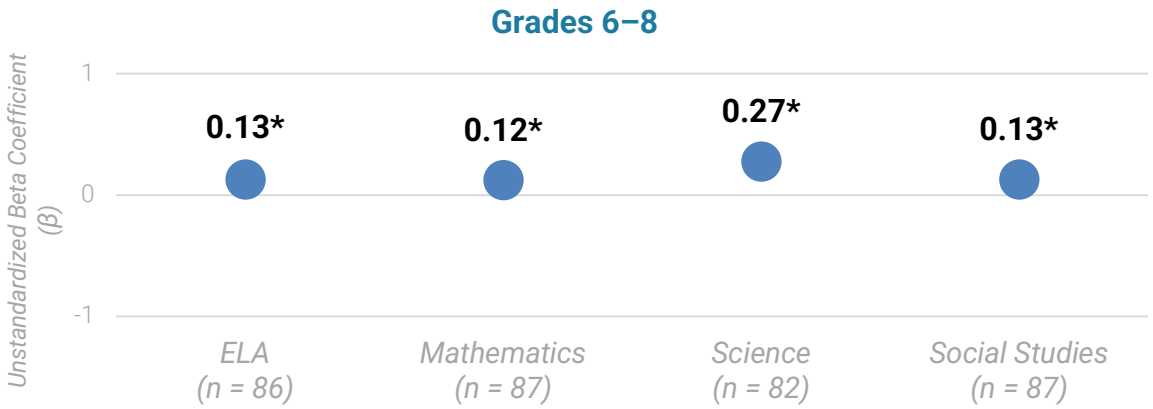
Figure 2
Association Between Time Spent on Lincoln Empowered Courses and End-of-Course Grades for Grades 3–5 Students by Subject Area



Note. Statistically significant findings are reported at the $p < .05$ level and indicated with an asterisk in the figure. Unstandardized Beta (β) coefficients represent the predicted change in student end-of-course grades for every 60 minutes of Lincoln Empowered usage.

Grades 6–8. As shown in Figure 3, statistically significant positive associations were found between time spent on Lincoln Empowered courses and student end-of-course grades for all four subject areas examined for Grades 6–8 students: ELA (β = 0.13, p = .005), Mathematics (β = 0.12, p = .003), Science (β = 0.27, p < .001), and Social Studies (β = 0.13, p < .001).

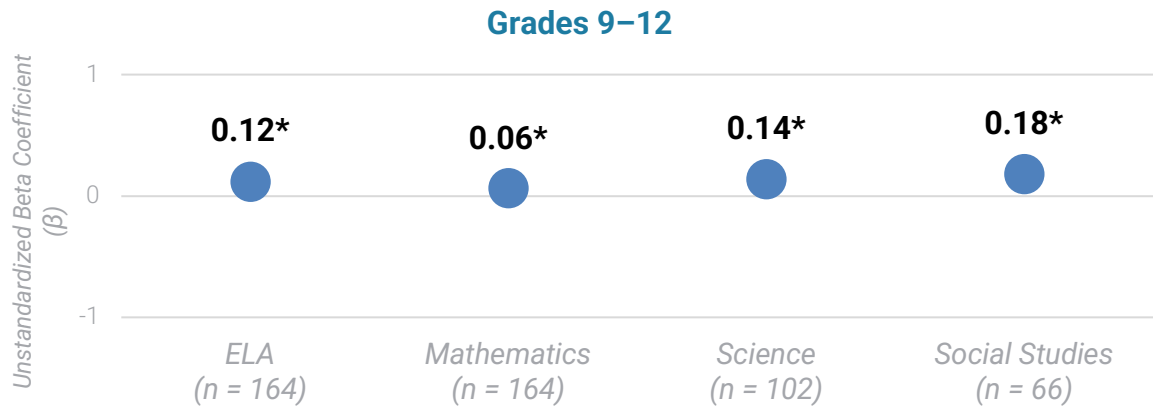
Figure 3
Association Between Time Spent on Lincoln Empowered Courses and End-of-Course Grades for Grades 6–8 Students by Subject Area



Note. Statistically significant findings are reported at the p < .05 level and indicated with an asterisk in the figure. Unstandardized Beta (β) coefficients represent the predicted change in student end-of-course grades for every 60 minutes of Lincoln Empowered usage.

Grades 9–12. As shown in Figure 4, statistically significant positive associations were observed between time spent on Lincoln Empowered courses and student end-of-course grades for all four subject areas examined for Grades 9–12 students: ELA (β = 0.12, p < .001), Mathematics (β = 0.06, p = .046), Science (β = 0.14, p = .004), and Social Studies (β = 0.18, p = .015).

Figure 4
Association Between Time Spent on Lincoln Empowered Courses and End-of-Course Grades for Grades 9–12 Students by Subject Area



Note. Statistically significant findings are reported at the p < .05 level and indicated with an asterisk in the figure. Unstandardized Beta (β) coefficients represent the predicted change in student end-of-course grades for every 60 minutes of Lincoln Empowered usage.

LIMITATIONS AND FUTURE RESEARCH

The current study offers promising results for Lincoln Empowered, but further research is needed to address its limitations and strengthen findings:

- *Research Design.* Future studies could use quasi-experimental or experimental designs aligned with ESSA Level II or I.
- *Limited Scope.* The study was limited to full-year Lincoln Empowered courses during the 2024–25 school year. Future research should include other quarter-year and semester-based courses to determine whether course durations impact learning outcomes.

CONCLUSIONS

In conclusion, findings indicate nine statistically significant, positive associations between Lincoln Empowered usage and students' end-of-course grades. Specifically, the study revealed positive, statistically significant association between Lincoln Empowered usage and end-of-course grades for students in Grades 3–5 (ELA only), Grades 6–8 (all subject areas examined) and Grades 9–12 (all subject areas examined).

Overall, these findings support ESSA evidence requirements for Level III (Promising Evidence) for Grades 3–5 (ELA only), Grades 6–8 (all subject areas examined) and Grades 9–12 (all subject areas examined) based on significant correlational results. Specifically, this study met the following, minimum criteria for Level III:

- ✓ Correlative designed questions
- ✓ Proper design and implementation
- ✓ Statistical controls through covariates
- ✓ At least one statistically significant, positive finding

REFERENCES

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

APPENDIX A. LINCOLN EMPOWERED LOGIC MODEL

LINCOLN LEARNING

Lincoln Empowered
Logic Model

Problem Statement: There's no one-size-fits-all instructional approach when it comes to students' learning which is why they need flexibility to choose the learning model that best fits them. Lincoln Empowered offers a personalized, standards-based curriculum that seamlessly blends content and best-in-class technology to create a pathway for students to own their learning.

Inputs
What is provided?

LINCOLN EMPOWERED PROVIDES
- Online national standards-aligned curriculum including:
  - State Empowered curriculum
  - 170+ courses and 12,437 modules
  - Learning objects[1] for diverse learning modalities
  - Formative and summative assessments
  - Course resources
  - Supplemental course kits and printed materials
  - Course variations including:
    - State Empowered (state-aligned)
    - Credit Recovery[2]
  - Auto-Graded[3]
- Lincoln Content Bank[4]
- Learning management system (LMS) including student courses and dashboard
- Cognia and WASC accredited
- Diverse delivery methods (virtual school, hybrid learning, and home school)
- Instructional services

DISTRICT PROVIDES
- Technology resources (e.g., online applications, physical devices, software)
- Teacher resources, as applicable

Participants
Who uses Lincoln Empowered?
- PreK–12 students
- Teachers
- School staff
- Administrators (school and district)
- Families/Guardians

Activities
How are participants using Lincoln Empowered?

STUDENTS
- Login to the LMS through Student Information System (SIS)
- Attend sessions/office hours
- Complete activities/assignments/lessons/assessments[5] assigned in courses using different learning objects
- Email teachers for support
- Receive credit for completing course

TEACHERS
- Login into dashboard
- Conduct sessions/office hours
- Use course pacing guide to understand course arrangement
- Personalize course by creating a home room, incorporating agendas or creating announcements
- Add their own content or Lincoln Learning content from the repository
- Customize student experience by hiding content or adjusting assessment settings
- Grade and provide students with feedback
- Communicate and support students through email conversations
- Monitor student progress
- Generate reports and analytics
- Access teacher tutorials[6] and course resources

ADMINISTRATORS
- Login into dashboard
- Proxy as users, run teacher activity reports, and view Empowered course sections that are utilized by Lincoln Learning or client teachers
- Review SIS communications log
- Reset user passwords
- Upload OneRoster Zip files in SIS
- Facilitate adds/drops/transfer enrollments
- Utilize purchasing tab to review, approve, or deny requests

FAMILIES/GUARDIANS
- Login to dashboard
- Use course pacing guides to understand course arrangement and pacing to support student learning and parent teacher guides, where applicable
- Create daily schedule
- Access course resources
- Monitor student activities, assignments, grades and courses in dashboard
- Purchase course materials from Lincoln Learning or Amazon, if needed
- Interact with Lincoln Learning homeschooling community to engage with other home school parents, ask questions, and share successes
- Review quarterly home school newsletter

Outputs
What are the measurable results of implementing Lincoln Empowered?

STUDENTS
- Total number of active minutes
- Average weekly minutes
- Total number of sessions/office hours/logins
- Average duration of sessions/office hours
- Number and nature of activities/assignments/lessons/assessments courses completed
- Modality of instruction
- Number of emails to teachers
- In-progress score
- Final course score
- Number of credits received

TEACHERS
- Number of logins
- Number of sessions/office hours conducted
- Number of course pacing guides accessed
- Number of home rooms, agendas, and announcements
- Type of course content used
- Modality of instruction
- Number and nature of hidden content and assessments adjusted
- Frequency of teacher feedback
- Number of emails to students
- Number of student records created
- Number of enrollment reports accessed
- Number of activity reports accessed
- Number of tutorials and course resources accessed

ADMINISTRATORS
- Number of logins
- Number of accessed teacher activity reports
- Number of communications
- Number of password resets
- Number and nature of enrollment data imported
- Number of adds/drops/transfer enrollments
- Purchase reviews/approvals/denials

FAMILIES/GUARDIANS
- Number of logins
- Number of course pacing guides accessed
- Number of daily schedules created
- Number of course resources accessed
- Modality of instruction
- Number of activity reports accessed
- Materials purchased
- Number of Lincoln Learning homeschooling community engagements
- Number of newsletters reviewed

Outcomes
What are the expected changes or impacts of using Lincoln Empowered?

SHORT-TERM
Students
- Have exposure to the smaller components of a standard

Teachers
- Will personalize the learning experience of their students with a multitude of resources
- Save time by viewing assessments, grades, discipline, attendance, and contact information on a single dashboard

Administrators
- Receive more transparent and quicker feedback regarding students and teachers

INTERMEDIATE
Students
- Have a greater understanding of the smaller components of a standard to demonstrate mastery of the standard as a whole

Teachers
- Can pinpoint areas of student weakness and can identify opportunities where supplemental content can be provided to personalize the student experience at an individual basis

Administrators
- Improve school wide efficiency and operations

LONG-TERM
Students
- Will achieve mastery in their academic courses based on the standard set
- Are better prepared for their future education

Teachers
- Are better able to meet the learning needs of all students

Administrators
- Create a culture of valuing data in their district

[1] Learning objects are bite-sized pieces of content delivered across various learning modalities (i.e., read it, teach it, watch it, play it, practice it, show it, apply it, assess it, answer key, reinforce it & extend it) to improve student learning.
[2] Credit Recovery courses allow students to focus on content they still need to master.
[3] Auto-Graded courses and assessments allow students to progress through a course at their own pace and includes auto-graded assessments that are scored by the LMS and automatic feedback is delivered to the student through the LMS.
[4] Lincoln Content Bank is an online tool for supplemental learning. Supporting individualized tutoring solutions, blended, hybrid, or virtual learning, remediation and enrichment, homework options, and supplemental materials
[5] For Credit Recovery Courses, students will take a pretest.
[6] Teacher tutorials are available to teachers on how to navigate and optimize Lincoln Learning products and services within LMS.

Prepared for Lincoln Learning, September 2023

LEARN PLATFORM BY INSTRUCTURE

APPENDIX B. ADDITIONAL INFORMATION ON STUDY FINDINGS

Table B1. Linear Regression Results for Time Spent on Lincoln Empowered Courses Predicting End-of-Course Grades by Subject Area (Grades K–2)

Subject Area	Unstandardized Beta Coefficient	Standard Error	*t* statistic	*p*-value
ELA	0.02	0.01	1.53	.13
Mathematics	0.03	0.03	1.31	.19
Science	0.04	0.10	0.39	.70
Social Studies	0.09	0.09	1.03	.31

Note. In all models, the predictor variable is time spent on course, scaled in 60-minute increments.

Table B2. Linear Regression Results for Time Spent on Lincoln Empowered Courses Predicting End-of-Course Grades by Subject Area (Grades 3–5)

Subject Area	Unstandardized Beta Coefficient	Standard Error	*t* statistic	*p*-value
ELA	0.04	0.02	2.08	.04
Mathematics	0.03	0.03	0.89	.38
Science	0.02	0.07	0.24	.81
Social Studies	0.02	0.07	0.26	.80

Note. In all models, the predictor variable is time spent on course, scaled in 60-minute increments.

Table B3. Linear Regression Results for Time Spent on Lincoln Empowered Courses Predicting End-of-Course Grades by Subject Area (Grades 6–8)

Subject Area	Unstandardized Beta Coefficient	Standard Error	*t* statistic	*p*-value
ELA	0.13	0.04	2.89	.005
Mathematics	0.12	0.04	3.10	.003
Science	0.27	0.06	4.72	< .001
Social Studies	0.13	0.04	3.48	< .001

Note. In all models, the predictor variable is time spent on course, scaled in 60-minute increments.

Table B4. Linear Regression Results for Time Spent on Lincoln Empowered Courses Predicting End-of-Course Grades by Subject Area (Grades 9–12)

Subject Area	Unstandardized Beta Coefficient	Standard Error	*t* statistic	*p*-value
ELA	0.12	0.03	3.82	< .001
Mathematics	0.06	0.03	2.01	.046
Science	0.14	0.05	2.99	.004
Social Studies	0.18	0.07	2.51	.015

Note. In all models, the predictor variable is time spent on course, scaled in 60-minute increments.