engage2learn Middle School Efficacy Study 2021-2022
An Exploration of NWEA MAP Growth: Math & Science 6-8

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Learning Experience Design (LXD)
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Prepared by Paul Chase, Ph.D., Rachel Schechter, Ph.D., Katherine Li, MAT with
LXD Research

Research Summary

Responsive coaching at engage2learn is an innovative, and with this and previous reports – an evidence-based solution. This 2021-2022 study compellingly validates the efficacy of the engage2learn program through an exploration of NWEA MAP® Growth™ and STAAR test scores for Math and Science, Grades 6-8. LXD Research, an independent research firm, analyzed educator achievement through the life of the engage2learn partnership with a large urban school district in Texas.

This report focuses on student growth on benchmark assessments (over 2,000 students in total) during the 2021-2022 school year and evaluates the relationship between educator engage2Learn participation and student growth, along with differences in school climate. The robust sample, 169 teachers across 10 schools, showed that the impact of teacher participation in engage2Learn on student academic growth is positive and significant in both math and science.

Key Findings

The e2L "High Yield Life Ready Best Practices" are research-based instructional practices associated with increased student achievement, engagement, and life ready skills. Teachers set goals on the growth indicators and coaches provide options and resources to assist teachers in growing towards and meeting their goals. Teachers who participate in the program learn e2L Best Practices.

We analyzed student outcome data from students of e2L teachers, non-e2L teachers in the same schools, and teachers in Comparison Schools.
- Students of e2L teachers had significantly higher growth in math and science achievement scores (MAP RIT Scores) than students of teachers in the other two non-e2L groups (Grades 6-8).
- Students of e2L teachers were also significantly more likely to meet math and science growth targets than students in the other two non-e2L groups.

- Students of e2L teachers had higher math and science scores in spring 2022 <u>State of Texas Assessments of Academic Readiness</u> (STAAR) and were more likely to be "On or Above Grade Level" in Math and Science than students in the Comparison School Group.
- Based on the teacher climate survey, in the spring of 2022, the treatment schools showed significantly higher average scores than the comparison schools for each of six school climate categories.
- Based on the teacher climate survey, the overall school climate improved significantly more in the e2L treatment schools than the comparison group schools from spring 2021-spring 2022.

Table 1. Results Summary of MAP RIT Scores and Growth by Category (e2L Teachers vs. Comparison School)

Subject	Higher RIT Score Gains from Fall to Spring?	Higher Percentage of Students Met Growth?	Higher STAAR Scores?
Math	*+3.6 RIT points gained (8.1 vs. 4.5)	*+10 percentage points (48% vs. 38%)	*+13 STAAR points (1584 vs. 1571)
Science	*+5.7 RIT points gained (7.1 vs. 1.4)	*+41 percentage points (65% vs. 24%)	*+208 STAAR points (3686 vs. 3478)

Introduction

Public education in the United States faces teacher shortages and declining enrollment. In particular, states consistently report staffing challenges in subject areas including special education, mathematics, science, foreign language, and English as a second language classrooms (McVey & Trinidad, 2019). Proposed solutions to this problem in public education come through diverse channels including new teacher hiring policies, retention incentives, and research-based personalized instructional teacher and leadership coaching support and technology tools such as those provided by engage2learn. Recognizing the quality of teacher preparation and training programs and perceived working conditions as factors in teacher retention spotlights the need and opportunity for novel innovations in servicing teacher training and professional development (Geiger & Pivovarova, 2018).

Research shows that teacher turnover undermines student achievement and school improvement efforts (Kini & Podolsky, 2016; Ronfeldt et al., 2013). On a related hopeful note, research demonstrates that well-designed mentoring programs improve

retention rates and increase feelings of efficacy and instructional skills for new teachers (Sutcher et al., 2019). The next phase of understanding, and what is missing from the research landscape, is research on the relationships between teaching retention strategies such as mentorship and coaching, and academic achievement.

The engage2learn approach to educator support provides an in-person and virtual coaching system that builds capacity and engagement in public schools. Learning Experience Design Research (LXD Research), a third-party independent evaluator, was hired to analyze data collected during the 2021-2022 school year. The goal was to measure how engage2learn contributed to the faculty's shared and growing use of instructional best practices in the classroom, and if those best practices impacted student outcomes. Specifically, this study investigates the impact of educator e2L participation on student achievement in math and science.

Implementation Description

Engage2learn (e2L) partnered with the district to provide coaching for teachers, instructional lead teachers, assistant principals, instructional coaches, and office staff. Teachers were coached on the Best Practices and worked with their e2L Coach to design their own path toward standards mastery within the district-selected competencies. Teachers earn badges for their participation by demonstrating evidence of practice. **Strand Badges** represent meeting or exceeding expectations in three related growth indicators (GIs) within a competency. **Leveled Standard Badges** indicate at least three GIs across a set of related Best Practice competencies.

Standards Alignment
Designs units, objectives, resources, activities, and assessments that are aligned to conceptually clustered standards and are relevant to learners.

Assessment/Formative Feedback
Designs and facilitates standards-aligned formative and summative assessments to monitor progress of all learners in academic standards and future-ready skills and provides feedback for learners to guide decision-making and progress toward mastery.

Differentiation/Scaffolding
Designs and facilitates opportunities for individualized learning and makes adjustments to meet the needs of all learners.

Small Group Instruction
Designs and facilitates effective, differentiated small group instruction workshops personalized to individual learner needs.

District Demographics
- Over 150,000 Students
- 21% Black, 70% Hispanic/Latino, 6% White
- 66% Economically Disadvantaged
- 45% ELL

Teacher Demographics
34% Black, 32% Hispanic/Latino, 28% White

2021-2022 Teacher Outcomes

Teacher Instructional Competency Growth

This study focused on 10 schools within the district, five of which were comparison schools (78 teachers) and five of which received e2L coaching for educators selected in the coaching cohort (65 teachers).

Teachers set their own path for making progress towards mastery in e2L Best Practices. Over the years, teachers who participated in the e2L intervention gained e2L "badges," indicating growth in multiple Best Practices. The theory of change suggests that e2L participation predicts accelerated gains in their students' achievement measures.

Within the 5 "treatment" schools that could receive e2L coaching, a total of 22 math and science teachers received coaching and earned e2L Strand Badges or Leveled Standard Badges by the spring of 2022, and 43 teachers had not yet participated. Two of the participating teachers began earning e2L badges in the fall of 2020, and the other 20 teachers began in the fall of 2021 (Figure 1).

Figure 1. Running Total of Best Practice Badges Earned by Grade 6-8 Teachers in the Sample from Fall 2020 to Spring 2022
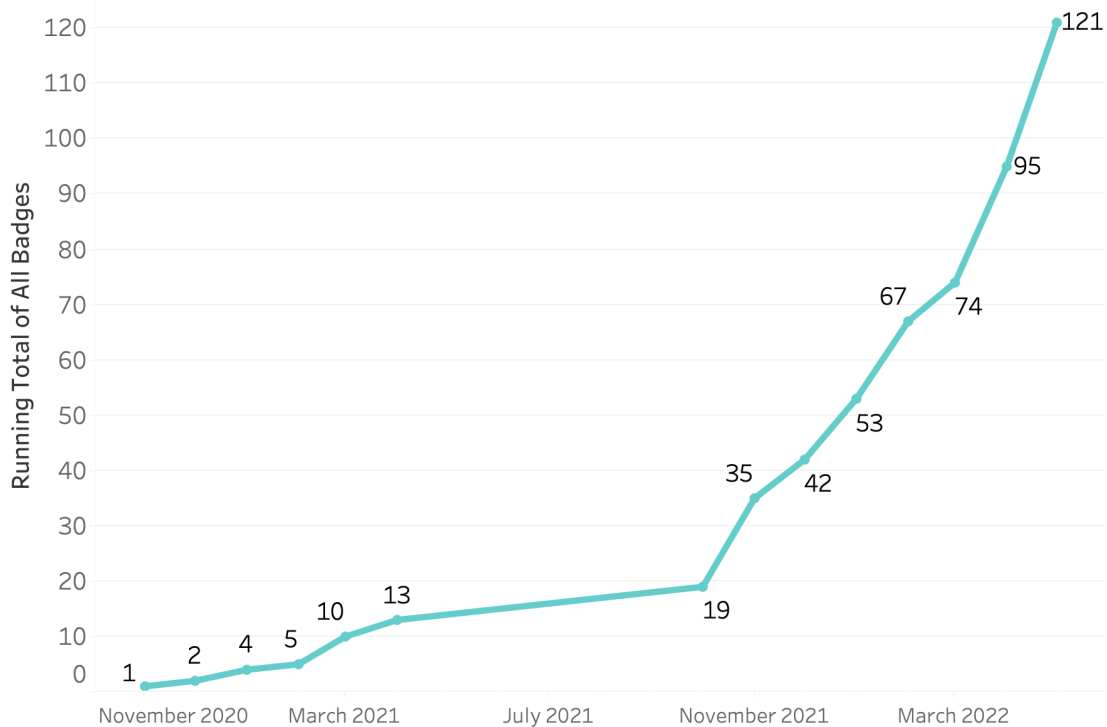
Although educators pursued various e2L Best Practices based on their interests, the most popular Best Practices studied by nearly half of participants were "Assessment & Formative Feedback" and "Standards Alignment." (Figure 2).

Figure 2. Most Popular e2L Best Practices

Standards Alignment
Designs units, objectives, resources, activities, and assessments that are aligned to conceptually clustered standards and are relevant to learners.

Assessment/Formative Feedback
Designs and facilitates standards-aligned formative and summative assessments to monitor progress of all learners in academic standards and future-ready skills and provides feedback for learners to guide decision-making and progress toward mastery.

Definition: Assessment and Formative Feedback refers to the process of gathering information to develop a deep understanding of what students know, understand, and can do as a result of their knowledge gained from an educational experience and monitoring the progress of all learners in academic standards and Life Ready Skills.

Definition: The Glossary of Education Reform cites "alignment" as being used in a variety of educational contexts; however, standards alignment involves "a specific, technical process…used to develop lessons, deliver instructions, and evaluate student learning growth and achievement," (Glossary of Education Reform, 2013).

Teacher Sample Definition

As noted above, there were 110 math and science teachers in the study. 45 teachers (41%) were in the comparison school and received no intervention. 43 teachers (39%) were in the e2L treatment school but did not yet receive any e2L coaching. 22 teachers (20%) were in the e2L treatment school and *did* receive e2L coaching, and were therefore considered the treatment group. One additional teacher was assigned to the treatment group but did not participate in the e2L program. Therefore, the non-participating teacher and their seven students were excluded from our study. The main analyses compare the difference in academic outcomes for the students of teachers in these three groups.

Impact of engage2learn on Student Growth

The school district provided LXD Research with NWEA MAP scores and STAAR scores for all students during the 2021-2022 school year. Overall performance was examined and the results of an exploration of the impact of e2L on student achievement is reported below.

Establishing Comparable Groups for the Study Sample

In order to establish the equivalence of groups at baseline (i.e., at the beginning of the fall of 2021) groups were matched through Propensity Score Matching procedures. Propensity score matching (PSM) is a quasi-experimental method in which the researcher uses statistical techniques to balance treatment and comparison groups by matching participants in the treatment and comparison groups by key characteristics. Using these propensity score matches, researchers can more precisely estimate the impact of an intervention by selecting comparison group(s) that match the intervention group(s).

In the case of this study, researchers used the PSM Python add-on program for SPSS version 28 for Propensity Score Matching. Key baseline characteristics (i.e., fall 2021 RIT MAP Math scale scores) were selected to match the "Comparison Schools" Group, "Same Schools, no e2L exposure" Group, and "E2L Teachers" Group. The result of the PSM was a set of participants that did not statistically differ in fall 2021 MAP Math or Science scores, nor did they significantly differ in percent racial minority, gender, or economic disadvantage (for details, please see Table 2 below).

Table 2. Propensity Score Matched Groups: Baseline Scores and Demographics

	Comparison School Group Means	Same School, No e2L Exposure Group Means	E2L Teachers Group Means	Significant Difference?
Fall (Baseline) MAP RIT Math Score	206.9	206.7	206.6	No; p = .92 (No)
Fall (Baseline) MAP RIT Science Score	200.8	200.4	202.2	No; p = .56
Percent Racial/ Ethnic Minority	98%	97%	97%	No; p = .53
Percent Male	55%	50%	49%	No; p = .21
Percent Economically Disadvantaged	90%	90%	90%	No; p = .96

Overall Student Growth

MAP provides students with RIT scores, which allow researchers to compare scores across cohorts and grade levels. In addition, MAP created projected RIT growth targets for each student based on their grade and RIT score at the beginning of the year.

For every student, MAP provides a projected growth target and then indicates whether or not students met that target at the end of the year as "Yes" or "No". Rebounds from the pandemic appeared slightly stronger in math, overall. Table 3 (below) shows the average RIT change in scale scores from 2021-2022, as well as the percentage of students who met growth targets in math and science, respectively.

Table 3. 2021-2022 MAP RIT Math & Science Gains and Percent Met Projected Growth

	RIT Math Change Scores	RIT Math Met Projected Growth	RIT Science Change Scores	RIT Science Met Projected Growth
Average Across All Participants	+5.2 points	38%	+3.2 points	38%

Math and science were also indexed by the State of Texas Assessments of Academic Readiness (STAAR®) at the end of each school year. Table 4 (below) indicates the spring 2022 average math and science scale scores for students in the sample on the STAAR, as well as the percentage of students in the sample who were on or above grade level for math and science.

Table 4. Spring 2022 STAAR Math & Science Scores & On/Above Grade Level Status

|	STAAR Math Scale Scores	STAAR Math Percent On/Above Grade Level	STAAR Science Scale Scores	STAAR Science Percent On/Above Grade Level
Average Across All Participants	1586	19%	3538	18%

Impact of e2L on Student Math Outcomes

Math MAP RIT Score Gains from Fall 2021 (BOY) to Spring 2022 (EOY)

E2L teachers were coached in one or more e2L best practices. We compared growth in RIT Math Scale Scores for students of teachers from the comparison schools, the same (treatment) school but without e2L exposure, and the e2L Teachers, to determine if e2L participation predicted student growth in math for the full sample across Grades 6-8.

Math MAP RIT score gains results showed a significant difference between the three groups. Students in the e2L Teacher group had significantly higher growth in Math MAP RIT Scores (an average gain of 8.1) than students in the Same School Group (an average gain of 3.7)[1]. Students in the e2L Teachers group also showed significantly greater (approximately twice as much) growth compared with students in the Comparison School Group (an average gain of 4.5)[2].

Figure 3. Gains on MAP Math Scores from Fall 2021 to Spring 2022 by Comparison School, Same (Treatment) School without e2L exposure, and e2L Teachers[3]

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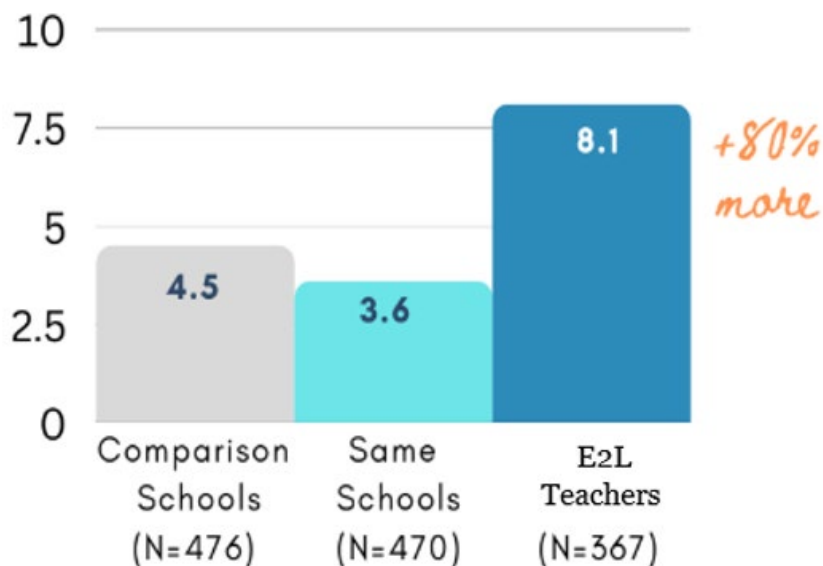
[1] t(1473) = 9.3, p < .001, Cohen's d effect size = .49
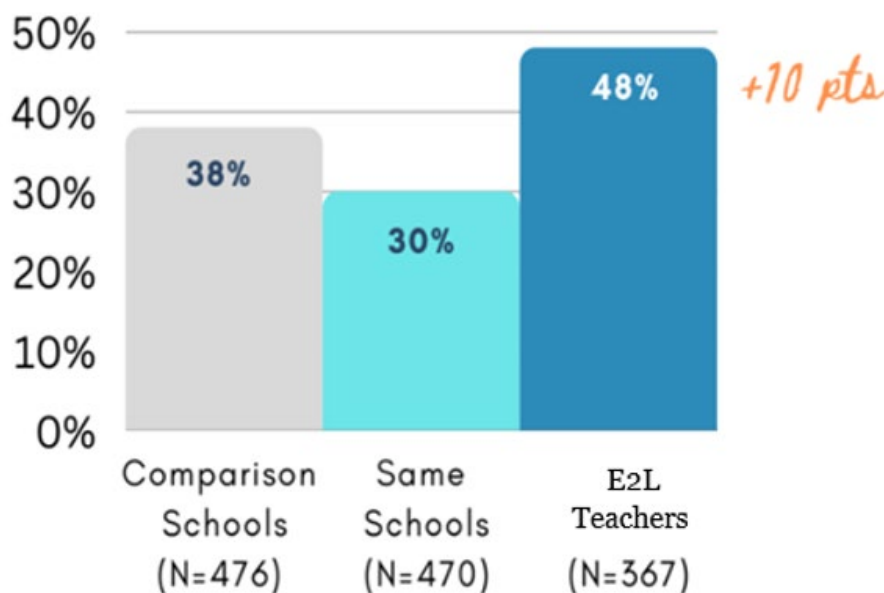[2] t(1408) = 7.1, p < .001, Cohen's d effect size = .38
[3] Orange script text on the images indicate the difference between the e2L Teachers and the Comparison Schools

Meeting Math Growth Targets from Fall 2021 (BOY) to Spring 2022 (EOY)

We likewise compared teachers from comparison schools, same school without e2L exposure, and e2L Teachers to determine if e2L predicted whether a student met their math growth targets for the full sample across Grades 6-8.

Results once again suggest a significant difference between the three groups in the percentage of students who met their math growth targets. Students of teachers in the e2L Teachers group were significantly more likely to meet math growth targets (48%) than teachers in the Same School Group (30%)[4]. Students of teachers in the e2L Teachers group were also more likely to meet math growth targets compared with students in the Comparison School Group (38%)[5].

Figure 4. Percent met Growth Targets from Fall 2021 to Spring 2022 by Comparison School, Same (Treatment) School without e2L exposure, and e2L Teachers

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[4] t(876) = 5.2, p < .001, Cohen's d effect size = .36
[5] t(844) = 2.9, p = .003, Cohen's d effect size = .20

State of Texas Assessments of Academic Readiness (STAAR) Math Scores at Spring 2022

Math is also indexed by the State of Texas Assessments of Academic Readiness (STAAR®) at the end of each school year. A STAAR scale score is a conversion of the raw score onto a scale that is common to all test forms for that assessment. The scale score takes into account the difficulty level of the specific set of questions based on the test, and quantifies a student's performance relative to the passing standards and proficiency levels.

We likewise compared teachers from comparison schools, same school without e2L exposure, and e2L Teachers to determine if e2L participation predicted STAAR math scores for the full sample across Grades 6-8.

Results showed a significant difference between the three groups in STAAR math scores, but not always in the same direction as in the RIT math scale score. Students of teachers in the e2L Teachers group had significantly *lower* STAAR math scores (1584) than teachers in the Same School Group (1601)[6]. However, students of teachers in the e2L Teachers group had significantly *higher* STAAR math scores than students in the Comparison School Group (1571)[7].

Figure 5. STAAR Math Scores (Spring 2022) by Comparison School, Same (Treatment) School without e2L exposure, and e2L Teachers


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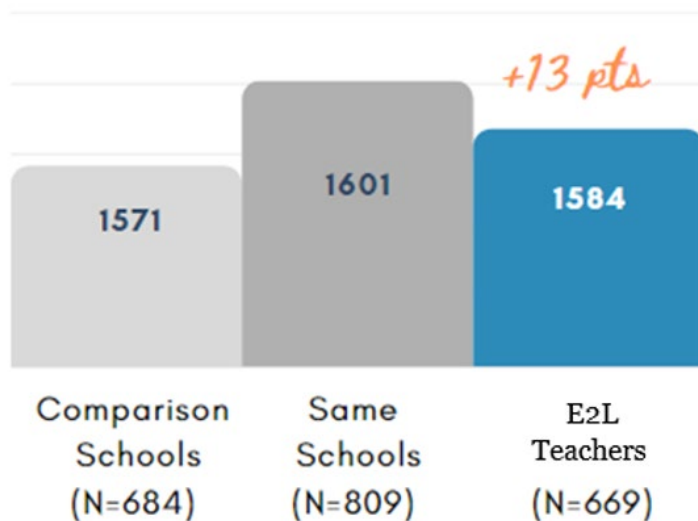
[6] t(1476) = -3.0, p = .003, Cohen's d effect size = -.16
[7] t(1351) = 2.1, p = .030, Cohen's d effect size = .12

STAAR Math Percent On or Above Grade Level at Spring 2022

End-of-year (STAAR®) math scores also include a measure of a student's math mastery relative to their grade level (e.g., below, on, or above grade level). Using the results of the STAAR test, we compared teachers from comparison schools, same school without e2L exposure, and e2L Teachers to determine if e2L participation predicted the percent of students on or above grade level at Spring, 2022.

Results showed some significant differences among the three groups in percent on or above grade level in math. Students of teachers in the e2L Teachers group had no significant difference in percent of students on or above grade level (23%) than teachers in the Same School Group (21%)[8]. However, the e2L Teachers group had significantly higher percentage (approximately double) of students on or above grade level than the Comparison School Group (12%)[9].

Figure 6. STAAR Math Percent On or Above Grade Level (Spring 2022) by Comparison School, Same (Treatment) School without e2L exposure, and e2L Teachers

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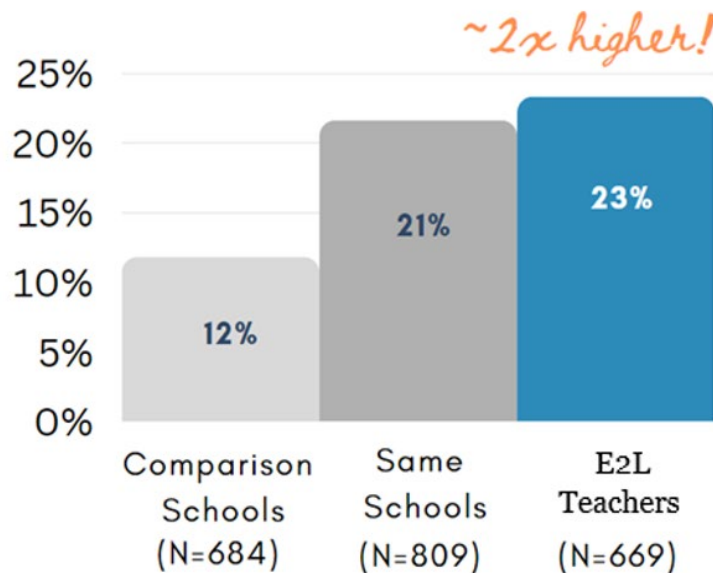
[8] $t(1476) = 0.8$, $p = .44$, (not significant)
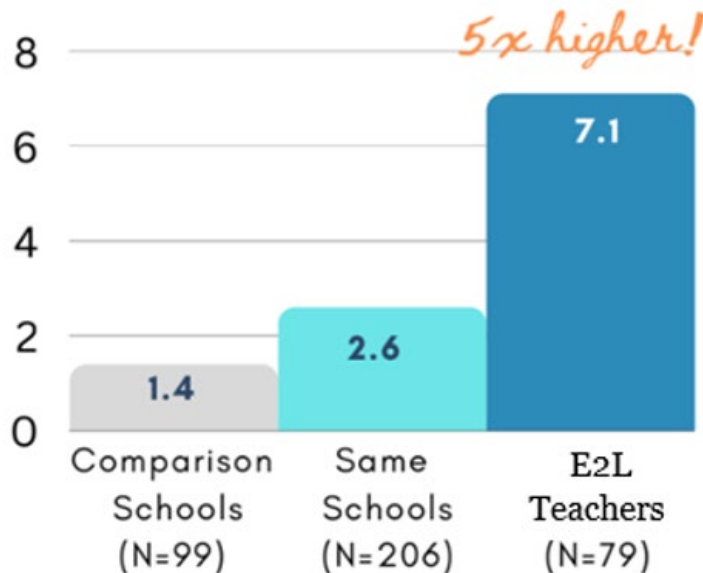[9] $t(1351) = 5.6$, $p < .001$, Cohen's d effect size $= .31$

Impact of e2L on Student Science Outcomes

Science MAP Gains from Fall 2021 (BOY) to Spring 2022 (EOY)

Similar to our analysis of Math, we compared students of comparison school teachers, same school teachers without e2L exposure, and e2L Teachers to determine if e2L participation predicted student growth in science scores for Grade 8 students (Note: Grade 8 was the only year during which Science was measured via MAP RIT scores and STAAR scores).

Results of the Science MAP RIT score gains showed a significant difference between the three groups. Students in the e2L Teachers group had significantly higher growth in Science MAP RIT Scores (an average gain of 7.1) than students in the Same School Group (an average gain of 2.6)[10]. Students in the e2L Teachers group showed significantly (approximately five times) greater growth than students in the Comparison School Group (an average gain of 1.4)[11].

Figure 7. Gains on MAP Science Scores from Fall 2021 to Spring 2022 by Comparison School, Same (Treatment) School without e2L exposure, and e2L Teachers

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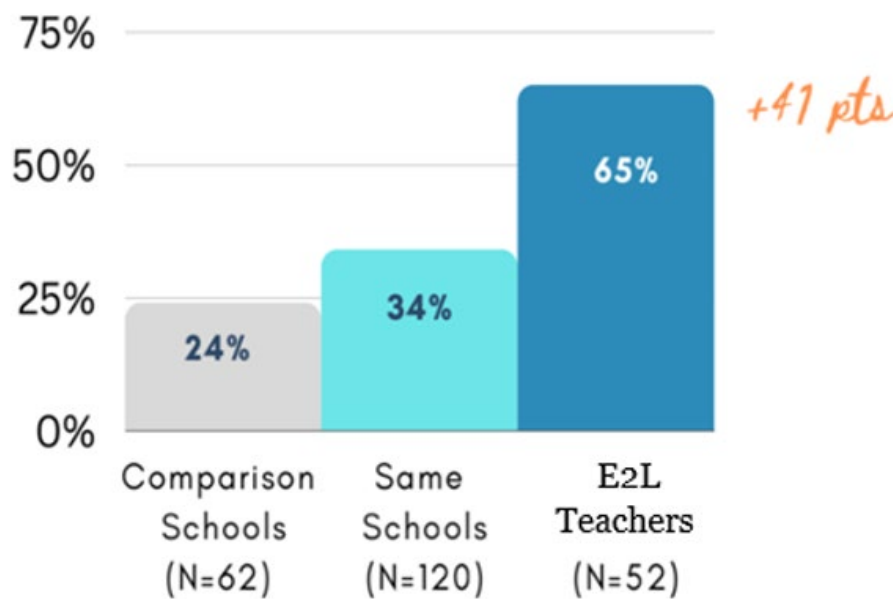[10] t(283) = 3.8, p < .001, Cohen's d effect size = .50
[11] t(176) = 3.6, p < .001, Cohen's d effect size = .54

Meeting Science Growth Targets from Fall 2021 (BOY) to Spring 2022 (EOY)

We likewise compared teachers from comparison schools, same school without e2L exposure, and e2L Teachers to determine if e2L participation predicted whether Grade 8 students met their science growth targets.

Results once again showed a significant difference between the three groups in the percentage of students who met their science growth targets. Students of teachers in the e2L Teachers group were significantly more likely to meet science growth targets (65%) than teachers in the Same School Group (34%)[12]. Students of teachers in the e2L Teachers group were even more likely to meet science growth targets compared with students in the Comparison School Group (24%)[13]. The effect size of these differences were particularly strong (.64 and .89, respectively).

Figure 8. Percent met Science Targets from Fall 2021 to Spring 2022 by Comparison School, Same (Treatment) School without e2L exposure, and e2L Teachers

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[12] t(169) = 3.8, p < .001, Cohen's d effect size = .64
[13] t(111) = 4.7, p < .001, Cohen's d effect size = .89

STAAR Science Scores Across Groups at Spring 2022

Science is also indexed by the STAAR test at the end of each school year. We likewise compared teachers from comparison schools, same school without e2L exposure, and e2L Teachers to determine if e2L participation predicted STAAR science scores for Grade 8 students.

Results showed a significant difference between the three groups in STAAR science scores. Students of teachers in the e2L Teachers group did not significantly differ in STAAR science scores (3686) compared with teachers in the Same School Group (3588)[14]. However, students of teachers in the e2L Teachers group had significantly higher STAAR science scores than students in the Comparison School Group (3478)[15].

Figure 9. STAAR Science Scores (Spring 2022) by Comparison School, Same (Treatment) School without e2L exposure, and e2L Teachers

+208 pts

		3686
	3588	
3478		
Comparison Schools (N=411)	Same Schools (N=309)	E2L Teachers (N=63)
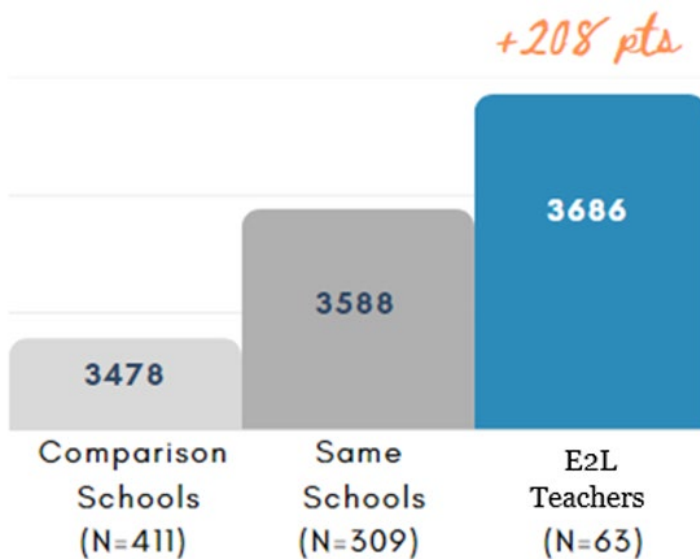
[14] t(370) = 1.3, p = .19 (*not significant*)
[15] t(472) = 3.0, p = .003, Cohen's d effect size = .40

STAAR Science Percent On or Above Grade Level at Spring 2022

End-of-year (STAAR®) science scores also include a measure of a student's science mastery relative to their grade level (e.g., below, on, or above grade level). Using the results of the STAAR test, we compared teachers from comparison schools, same school without e2L exposure, and e2L Teachers to determine if e2L predicted the percent of Grade 8 students on or above grade level in the spring of 2022.

Results showed some significant differences among the three groups in percent on or above grade level in science. Students of teachers in the e2L Teachers group had a significantly greater percentage of students on or above grade level (31%) than teachers in the Same School Group (20%)[16]. Likewise, the e2L Teachers group had a significantly higher percentage (approximately double) of students on or above grade level than the Comparison School Group (14%)[17].

Figure 10. STAAR Science Percent On or Above Grade Level (Spring 2022) by Comparison School, Same (Treatment) School without e2L exposure, and e2L Teachers

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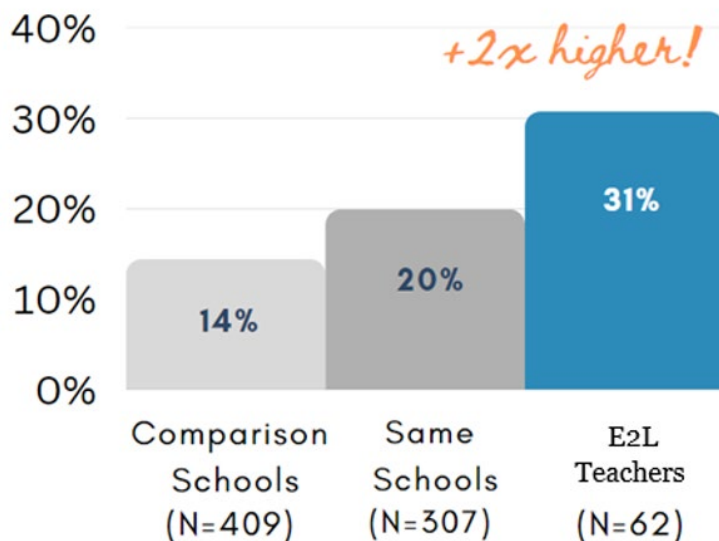
[16] t(367) = 1.9, p = .030, Cohen's d effect size = .26
[17] t(469) = 3.2, p < .001, Cohen's d effect size = .44

Climate Survey Overviews and Takeaways

For the past ten years, the district has been engaging in a teacher-focused climate survey that requests feedback each fall and spring. To understand how the climate of the school may be impacted by programs happening at the schools using e2L, a portion of this report includes an analysis of the climate survey trends.

The climate survey includes six categories: Beliefs and Priorities, College-Going Culture, Culture of Feedback and Support, Positive Culture and Environment, Teacher-Principal Trust, and Teacher-Teacher Trust. Many items in these categories relate to e2L Best Practices and standards. Data is summarized below, with the percent of teachers with positive responses as the key metric. When examining the Spring 2022 results, a clear trend shows that teachers in the e2L schools have more positive responses than teachers in the comparison schools.

Figure 11. Climate Survey, Average Percent Positive Responses per Category in Spring 2022
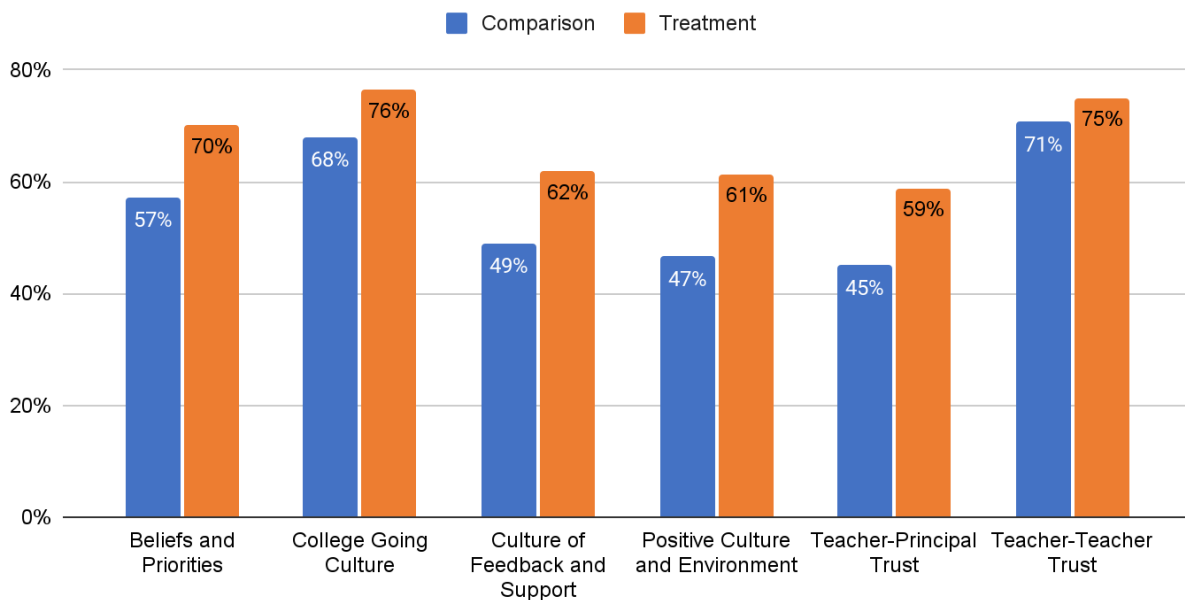

There is a significant difference between treatment and comparison schools on the percent of positive responses in each category of the climate survey. This survey took place in spring, 2022.

At the start of the e2L professional learning program, the treatment schools had lower ratings than the comparison schools (which is one of the reasons why the

climate survey metric was chosen by the district to examine as an outcome of the intervention).

The treatment school ratings improved over time until they were virtually identical to the comparison schools in the spring before the pandemic began. The climate survey was not conducted during spring 2020, but resumed the following year. Results suggest that schools that received e2L and other supports were buffered to an extent by the effects of the pandemic compared to the other schools. A rigorous analysis of these trends (using 2021 Climate scores as a covariate) confirmed that the rebound after the pandemic was faster for treatment schools than comparison schools (p < .001, Cohen's d effect size = .37).

Figure 12. Average Spring Climate Survey Ratings from 2017-2022
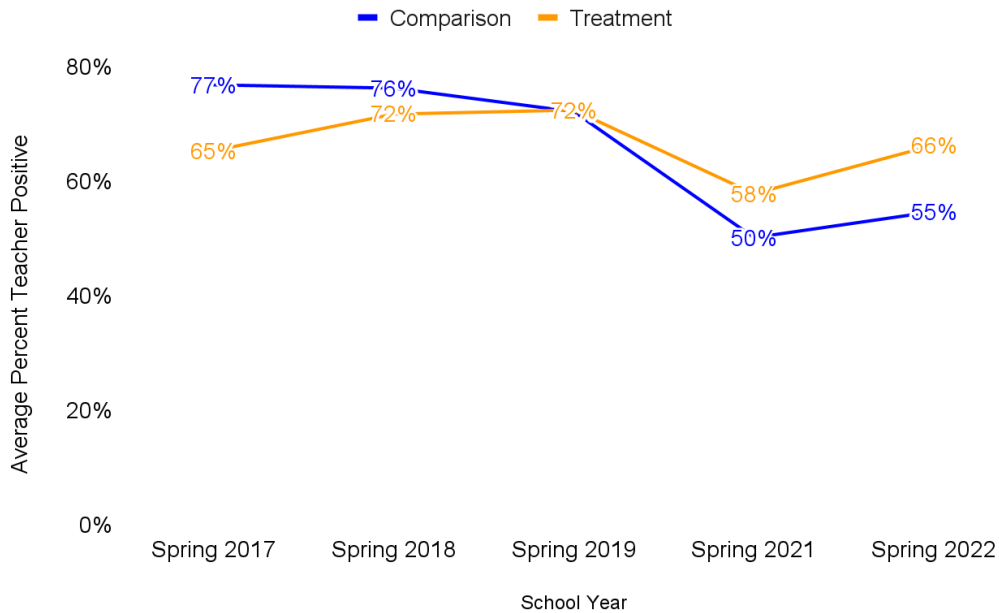
Conclusion & Limitations

Responsive coaching at engage2learn is an innovative and, with this report, evidence-based solution. The findings of this 2021-2022 study compellingly validate the efficacy of the engage2learn program through an exploration of NWEA MAP Growth in math and science. The findings have value on their own to stakeholders interested in the impact of coaching and standards alignment, and serve as a foundation for future mixed-methods research.

Data tracked and analyzed in this report cover educator achievement over one year of the partnership, focusing on student growth on benchmark assessments during the 2021-2022 school year, as well as end-of-year test scores. The news is positive for student growth. The robust sample, a total of 110 teachers across 10 schools, showed that the impact of the e2L program on student academic growth is positive and significant in math and science. Students of teachers who participated in the e2L program had significantly higher growth in Math and Science MAP RIT Score gains than students of teachers in the comparison schools. Students of e2L teachers were also significantly more likely to meet math and science growth targets than teachers in comparison schools. The findings are particularly convincing due to the consistency of significant results across subject areas and assessments. E2L Teachers had higher end-of-year STAAR scores on math and science, and had a significantly larger percentage of students scoring at or above grade level.

The impact and findings are relevant for diverse stakeholder groups including those who care primarily about student achievement and those who believe in or are curious about the connection between strong and innovative teacher coaching and student outcomes. Uses for the research are many. The district may use the findings to make decisions about continued or increased levels of partnership with engage2learn. Product leaders have the opportunity to reinforce the research-based messaging of its product to existing users and pursue additional users who require and/or value evidence-based products. The evidence suggests that coaching and building skills related to the most popular e2L Best Practices (i.e., Assessment & Formative Feedback and Alignment to Standards) may be of particular use for educators. The findings may also contribute to the larger discussion among policymakers, educational theorists, administrators, and educators working to find evidence-based solutions to the growing problem of teacher shortages and turnover, as indicated by the improvements in school climate associated with e2L-supported schools.

Limitations in the study do exist and may be addressed through future research and inquiry. For example, teachers in the study were not randomly assigned to e2L and

comparison school groups. The e2L schools had other supports and activities that may have impacted the climate survey, and certainly could have either boosted or reduced the impact of e2L (an interaction effect with an unknown variable). The focus on secondary data has inherent limitations that should be addressed in future mixed-methods research. The addition of educator voices in future studies will offer feedback about implementation and engagement, add insight to the assessment data, and allow for the research to inform ongoing product design, development, and iteration. For example, interviews and surveys could include questions that lead to understanding whether and to what extent features around choice and customization matter in the user's experience and commitment to the program.

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Updated Findings using Evidence for ESSA Version 2.0 Standards

Math

Table 1. Spring 2022 EOY MAP Math Scores: Comparison School and e2L Teachers

	Comparison School Group Mean	E2L Group Mean	Comparison Group SD	Significance	Effect Size
EOY MAP RIT Math Score	213.0	216.4	18.3	*p* < .001 (Yes)	.19

Table 2. Spring 2022 EOY MAP Math Scores: Same School w/o e2L Exposure vs. e2L Teachers

	Same School w/o e2L Group Mean	E2L Group Mean	Same School w/o e2L SD	Significance	Effect Size
EOY MAP RIT Math Score	210.9	216.4	16.6	*p* < .001 (Yes)	.33

Table 3. Percent met Spring 2022 Math Growth Targets: Comparison School and e2L Teachers

	Comparison School Group Mean	E2L Group Mean	Comparison Group SD	Significance	Effect Size
Met Projected Math Growth	.38 (38%)	.48 (48%)	0.49	*p* = .003 (Yes)	.20

Table 4. Percent met Spring 2022 Math Growth Targets: Same School w/o e2L Exposure vs. e2L Teachers

	Same School w/o e2L Group Mean	E2L Group Mean	Same School w/o e2L SD	Significance	Effect Size
Met Projected Math Growth	.30 (30%)	.48 (48%)	0.46	$p < .001$ (Yes)	.39

Table 5. Spring 2022 STAAR Math Overall Scores: Same School w/o e2L Exposure vs. e2L Teachers

	Comparison School Group Mean	E2L Group Mean	Comparison Group SD	Significance	Effect Size
STAAR Math Overall Scores	1571	1584	103	$p = .03$ (Yes)	.12

Table 6. Spring 2022 STAAR Math Overall Scores: Comparison School and e2L Teachers

	Same School w/o e2L Group Mean	E2L Group Mean	Same School w/o e2L SD	Significance	Effect Size
STAAR Math Overall Scores	1601	1584	119	$p = .003$ (Yes)	.15

Table 7. Percent met Spring 2022 STAAR Math Growth Targets: Comparison School and e2L Teachers

	Comparison School Group Mean	E2L Group Mean	Comparison Group SD	Significance	Effect Size
STAAR Math Met Growth Targets	.12 (12%)	.23 (23%)	.32	$p < .001$ (Yes)	.36

Table 8. Percent met Spring 2022 STAAR Math Growth Targets: Same School w/o e2L Exposure vs. e2L Teachers

	Same School w/o e2L Group Mean	E2L Group Mean	Same School w/o e2L SD	Significance	Effect Size
STAAR Math Met Growth Targets	.22 (22%)	.23 (23%)	.41	$p = .40$ (No)	n/a (.02)

Science

Table 9. Spring 2022 EOY MAP Science Scores: Comparison School and e2L Teachers

	Comparison School Group Mean	E2L Group Mean	Comparison Group SD	Significance	Effect Size
EOY MAP RIT Science Score	201.8	209.1	14.9	$p < .001$ (Yes)	.49

Table 10. Spring 2022 EOY MAP Science Scores: Same School w/o e2L Exposure vs. e2L Teachers

	Same School w/o e2L Group Mean	E2L Group Mean	Same School w/o e2L SD	Significance	Effect Size
EOY MAP RIT Science Score	205.1	209.1	14.9	$p = .01$ (Yes)	.27

Table 11. Percent met Spring 2022 Science Growth Targets: Comparison School and e2L Teachers

	Comparison School Group Mean	E2L Group Mean	Comparison Group SD	Significance	Effect Size
Met Projected Science Growth	.24 (24%)	.65 (65%)	.43	*p* < .001 (Yes)	.94

Table 12. Percent met Spring 2022 Science Growth Targets: Same School w/o e2L Exposure vs. e2L Teachers

	Same School w/o e2L Group Mean	E2L Group Mean	Same School w/o e2L SD	Significance	Effect Size
Met Projected Science Growth	.34 (34%)	.65 (65%)	.48	*p* < .001 (Yes)	.64

Table 13. Spring 2022 STAAR Science Overall Scores: Same School w/o e2L Exposure vs. e2L Teachers

	Comparison School Group Mean	E2L Group Mean	Comparison Group SD	Significance	Effect Size
STAAR Science Overall Scores	3478	3686	504	*p* = .003 (Yes)	.41

Table 14. Spring 2022 STAAR Science Overall Scores: Comparison School and e2L Teachers

	Same School w/o e2L Group Mean	E2L Group Mean	Same School w/o e2L SD	Significance	Effect Size
STAAR Science Overall Scores	3589	3686	518	*p* = .17 (No)	n/a (.19)

Table 15. Percent met Spring 2022 STAAR Science Growth Targets: Comparison School and e2L Teachers

	Comparison School Group Mean	E2L Group Mean	Comparison Group SD	Significance	Effect Size
STAAR Science Met Growth Targets	.14 (14%)	.31 (31%)	.35	*p* = .002 (Yes)	.46

Table 16. Percent met Spring 2022 STAAR Science Growth Targets: Same School w/o e2L Exposure vs. e2L Teachers

	Same School w/o e2L Group Mean	E2L Group Mean	Same School w/o e2L SD	Significance	Effect Size
STAAR Science Met Growth Targets	.20 (20%)	.31 (31%)	.40	*p* = .06 (No)	n/a (.27)

Table 17. Comparison Group and e2L Teacher Average Percent Positive Spring Climate Survey Ratings Spring 2022 with 2021 Ratings as a covariate

	Comparison Group Adjusted Mean	E2L Group Adjusted Mean	Comparison Group SD	Significance	Effect Size
Weighted Percent Positive Spring Climate Survey Ratings	.55 (55%)	.64 (64%)	.50	*p* = .001 (Yes)	.18

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