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2017—2018 Creative Learning Initiative: Creative Teaching Implementation and Outcomes

Department of
Research and Evaluation
AUSTIN INDEPENDENT SCHOOL DISTRICT

About the report

This report, which is the second in a series of three reports evaluating CLI for the 2017-2018 school year evaluates teacher's reactions to training in Creative Teaching, how and why they use it in the classroom, and how that usage relates to student outcomes. Though the discussion regarding student outcomes can be highly technical at times, the report uses call out boxes and appendixes to give more advanced understanding of statistical methodology. In addition to this report, you can also reference the interactive report on Creative Teaching for more detailed information on implementation:

http://www.austinisd.org/dre

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Executive Summary

The Creative Learning Initiative (CLI) is a community-wide effort to bring creative learning and the arts to each and every student in Austin. Lead by MINDPOP, the City of Austin, and the Austin Independent School District (AISD), CLI supports systemic and sustainable programs that integrate creativity, the arts, Creative Teaching strategies with classroom teaching, campus programming, and campus improvement. Since 2012, CLI has provided 56 campuses with the ongoing support to design and implement comprehensive campus plans to become more arts rich. At the campus level, the three pillars of the program are to (a) increase students' access to sequential fine arts instruction, (b) foster classroom learning with Creative Teaching across the curriculum, and (c) increase community arts programming during and out of the school day.

Creative instruction across the curriculum is a critical pillar of CLI. The CLI initiative supports a professional development model that empowers teachers to use a specific set of research based strategies, collectively called "Creative Teaching", to enhance students' learning. CLI's initial goal for arts-rich schools is that 75% to 100% of the teachers are competent in using Creative Teaching strategies and use them throughout their curricula, at least once per week.

CLI teachers continue to rate professional development in Creative Teaching very highly, and the majority of non-CLI teachers are eager to learn more: In teacher surveys on Creative Teaching 96% report the workshops increased their skill, 79% reported the coaching to be very effective, and 95% that the strategies engage their students. Even teachers at non-CLI schools view Creative Teaching favorably, with 74% being interested in learning more about the method. However, with budget shortfalls on the horizon, the comprehensive roll-out method that has been used in the past will probably need modification. *Therefore, in the interest of efficiency, we recommend targeting support to teachers who are already interested in implementing Creative Teaching in their classrooms.*

Creative Teaching is positively related to several desirable student outcomes: Specifically, elementary students who have teachers who use Creative Teaching at higher levels report higher levels of engagement and score better on STAAR math (Table 1). In addition, our research found a positive relationship between Creative Teaching and STAAR reading scores for students with Limited English proficiency (LEP students). *Therefore, we recommend the use of Creative Teaching strategies in the elementary classroom, not just for student engagement, but also to enhance learning.*

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Program Description and Goals

Creative instruction across the curriculum is a critical pillar of CLI. The CLI initiative supports a professional development model that empowers teachers to use a set of research based Creative Teaching strategies to enhance students' learning. Unlike many forms of arts integration, which match a prescribed arts standard with an academic standard within the curriculum, the Creative Teaching strategies focus on the instructional technique rather than the curriculum content. The Creative Teaching techniques draw on practices from drama, visual arts, music, movement, and digital media as the instructional framework to engage students, drive inquiry, promote rigor, and create personal connections to the material in any content area including an integrated curriculum. The Creative Teaching strategies selected by MINDPOP for inclusion in the initiative provide opportunities for development or generation of ideas, creative choice making, analysis and synthesis, mental and physical modeling, point of view, translation of ideas, and transfer of learning to different contexts, as well as the opportunity to share ideas with others (Figure 1). These essential elements of Creative Teaching are natural and logical extensions of many powerful instructional theories, most of which are aligned with brain-based pedagogy, socio-constructivist learning theory, multiple intelligence theory, project-based learning, total physical response, and schema development and designed for foster social-emotional learning and cultural proficiency.

Figure 1.
Essential Elements of Creative Teaching

Source. MINDPOP
Note. See Appendix A for Creative Teaching rubric.

CLI's initial goal for arts-rich schools is that 75% to 100% of the teachers are competent in using Creative Teaching strategies and use them throughout their curricula, at least once per week. Each year, one new vertical team is added to the CLI professional development cohort, and one vertical team graduates to sustaining status. For schools just beginning CLI, the Creative Teaching professional development model starts with skill-based workshops, led by CLI staff and representatives of local arts organizations.

Administrators at CLI schools commit to scheduling two professional development workshops per year for their entire teaching staff for 3 years.[1] In the first year of adoption, they study drama-based strategies; in the second year, they study visual-arts-based strategies; and in the third year, they study music- and movement-based strategies. The workshops teach how to successfully facilitate the specific arts-based strategies; when to use the strategies within the lesson cycle or in the curriculum; and why to use a particular strategy for cognitive, social, artistic, or academic gains.

The CLI professional development model extends the skill-based workshops with ongoing coaching opportunities that integrate arts-based strategies with core curriculum content. During planning sessions, the coach usually works with grade-level teams (elementary) or subject teams (secondary) to develop teachers' skills in the selection of an appropriate Creative Teaching strategy to achieve specific learning objectives. Together, they select the strategy and then plan an effective lesson outline. During the modeling, the coach demonstrates or co-teaches sessions with specific strategies in the classroom. After the modeling or co-teaching, the coach and teacher reflect on the experience and discuss the implementation of the instruction. During these visits, coaches gather information on frequency of strategy use in the classroom and assess each teacher on his or her ongoing development of competency to implement the strategies (see page 7 for more information about methodology and Appendix A for Creative Teaching Competency Rubric).

Beyond the core professional development opportunities that CLI provides schools in their first 3 (foundational) years of being a CLI school, the initiative also works to keep Creative Teaching active on sustaining campuses by training teacher leaders on those campuses. Three leaders from each sustaining campus, called creative learning leaders, are trained and supported to deliver refresher courses in Creative Teaching and support the principal in a variety of ways to related to being a creative campus overall. CLI also offers several stand-alone professional development opportunities, including refresher courses for teachers at sustaining schools, summer workshops, and short content-specific courses that are open to any teacher in the district. These are sometimes taught by the CLI staff, sometimes by arts partners, and often by both.

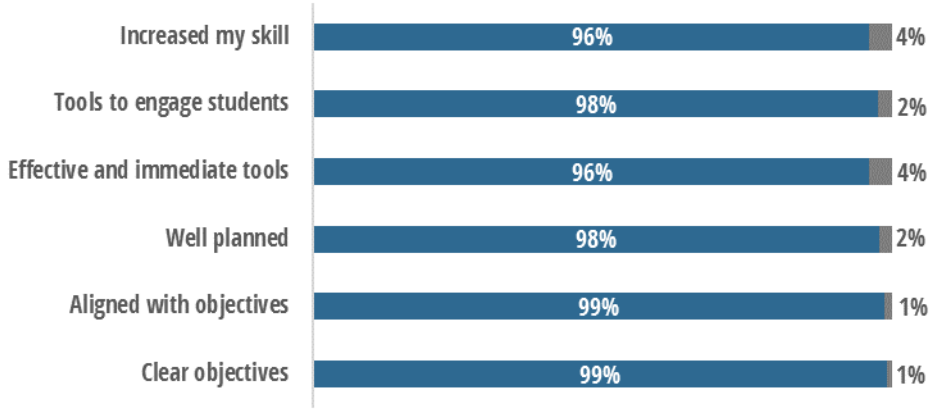
This robust professional development model is ultimately designed to build Creative teaching skills in teachers of all grade levels and all subjects. By the end of the 3-year foundational program, the goal is that at arts-rich schools, at least 75% of teachers are competent in using Creative Teaching strategies and use them throughout their curricula at least once a week. To measure progress toward this ambitious goal, and to guide program improvement, we use survey data from the teachers and implementation assessments from the coaches to understand how teaching practices are affected by the program activities.

[1] The workshops were developed by MINDPOP and partnerships with field experts, including Katie Dawson and Lara Dossett from Drama for Schools, Krissie Marty from Forklift Dance, Emily Cayton and Hanna Zurko from The Contemporary Austin, Dr. Tina Curran and Dr, Megan Alrutz from The University of Texas at Austin, and Marcelo Teson and Charlie Lockwood from Texas Folklife Resources. Workshop facilitators are drawn from these organizations, as well as Creative Action, Paramount, ZACH Theatre, Ballet Austin, Austin Soundwaves, and others.

Professional Development in Creative Teaching

In 2017—2018, staff from 27 CLI campuses participated in and reflected on 179 professional development sessions in Creative Teaching tailored to subject and grade level. Teacher survey results from 2,328 responses indicate that almost all teachers found the experience to be of high quality (Figure 2).

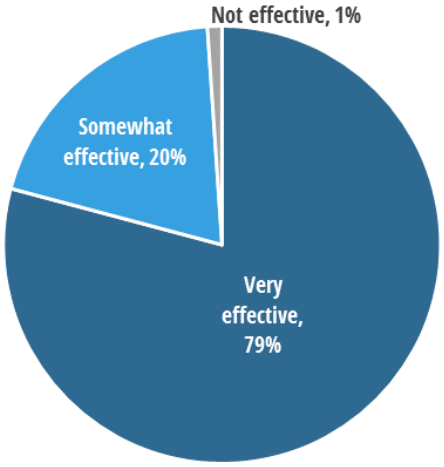
Figure 2.
Almost all teachers agreed or strongly agreed that the workshops were of high quality.



Source. CLI Workshop Survey. *n* = 2,328

In addition to workshops, teachers were also provided with opportunities to receive one -on-one follow-up coaching. In 2017—2018, 731 teachers received coaching from the 3.5 full-time CLI Creative Teaching coaches. Of these interactions, 85 percent were at elementary schools and 15 percent were at secondary schools; 60 percent of the interactions were in small groups and 40 percent were engaged individually. At the end of the year, teachers were surveyed about their experiences working with coaches. On average, teachers rated the overall quality of their coach as 4.7 (n = 186) on a scale from 0 (unskilled) to 5 (highly skilled). The majority found coaching to be very effective at increasing their skills in Creative Teaching (Figure 3).

Figure 3.
Teachers who received coaching reported their time spent to be effective at increasing their Creative Teaching skills.

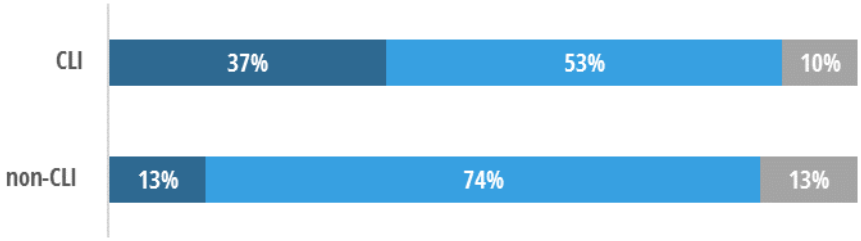


Source: CLI fall and spring workshop surveys. *n* = 225

In summary, the professional development sequence provided by CLI has been excellently rated by teachers at each step of the sequence: through all three years of the workshop sequence and individualized instructional coaching during the foundational years, as well as support received by Creative Campus Leaders at sustaining schools. Despite turnover at schools and normal challenges to implementation along the way, at the end of 2017—2018, 85% of teachers at CLI schools said they were knowledgeable in Creative Teaching. Surprisingly, at schools where CLI has not yet been introduced, 37% of teachers also reported being knowledgeable in Creative Teaching. These teachers might have been trained at a CLI school and moved to a non-CLI school; they might have taken one of CLI's standalone workshops, or have learned it through another colleague. Of the remaining 63% of teachers at non-CLI schools who say they are not knowledgeable about Creative Teaching, who understandably have not been exposed to the professional development in Creative Teaching, 80% of those expressed interest in learning more about it. This percentage was even higher at the elementary level, with 83% of non-CLI elementary teachers interested in more training in Creative Teaching. Overall, survey data suggest that there is a strong appetite for Creative Teaching in both schools that already have CLI and even those that do not. Across all schools, 64% of teachers expressed interest in learning more about Creative Teaching with 53% interested at CLI schools and 74% interested at non-CLI schools (Figure 4).

Figure 4.

Teachers who report they are already knowledgeable in Creative Teaching or want to learn more about Creative Teaching make up the majority of the instructional staff at both CLI (90%) and non-CLI schools (87%), and those that report being not interested make up a small minority.



Source: 2017—2018 Employee Coordinated Survey (*n* = 1,266)
Note. Teachers that are noted as already knowledgeable reported "I am knowledgeable about the strategies and not interested in learning more" in addition to stating agreement with the statement that Creative Teaching benefitted their students. Teachers that are noted as wanting to know more may have reported themselves as knowledgeable or not knowledgeable, but all indicated their interest in learning more. Those that are noted as not interested were either already knowledgeable, but didn't think that Creative Teaching benefitted their teaching (5% at CLI schools and 1% at non-CLI schools) or reported being not knowledgeable and not interested in learning more.

Creative Teaching Implementation Highlights

Workshops offered in Fall and Spring:

In 2017—2018, 1240 teachers at foundational CLI campuses participated in and reflected on 124 professional development workshops tailored to subject and grade level and designed to increase the frequency and competency of Creative Teaching in the classroom. They reported the workshops were engaging (97%), relevant (96%), inspiring (95%) and invigorating (93%) (Source: Creative Teaching Workshop Survey, n = 1972 responses from 1240 teachers).

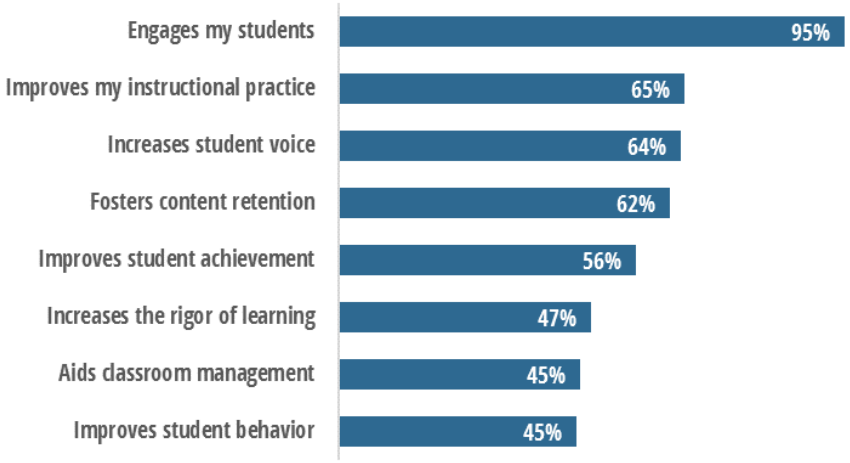
Coaching offered throughout the year:

In 2017—2018, 75% of teachers (717 of 957) in the Eastside, LBJ and Anderson vertical teams received coaching by CLI instructional coaches. The number of coaches decreased from the prior year, as did the average number of teachers per coach and the average minutes of coaching per teacher (source: CLI Coach Documentation.) However, coach quality ratings by teachers increased significantly from an average of 4.3 on 5-point scale in 2016—2017 to an average of 4.8 in 2017—2018 ($p < .001$); (source: CLI End of Year Survey, n = 225). The two measures, "time-coached" and "coach quality", when multiplied together, create a third variable we call the "coach factor" which has been found to be predictive of teacher competence in Creative Teaching (see 2016—2017 Annual Report). The average "coach factor" remained the same from 2016—2017.

Teachers Using Creative Teaching in the Classroom

When CLI teachers provided reasons why they decided to incorporate Creative Teaching strategies the most frequent reason reported was that it engaged their students (Figure 5). A majority of teachers also reported that it improved their instructional practice, increased student voice, and fostered content retention.

Figure 5.
Almost all teachers reported they included Creative Teaching in their regular teaching practice because it engages their students. A majority of teachers reported the strategies improved their instruction, increased student voice, fosters content retention, and improved student achievement.



Source: CLI End of Year Survey, *n* = 620
Note. Respondents could select all reasons they felt applied. Numbers will not sum to 100%.

Creative Teaching Implementation Highlights (cont.)

Frequency of Use:

Across all CLI schools, teachers use an average of 1.7 unique strategies at least once a week. By school level, elementary teachers use an average of twice as many unique Creative Teaching strategies as secondary teachers use (2.3 strategies per week, compared to 1.0 in middle and 1.2 in high). Teachers across all levels gave similar reasons for why they used Creative Teaching in the classroom, with 95% reporting that it engaged their students (*n* = 729). A majority of teachers reported the strategies improved their instruction, increased student voice, fosters content retention, and improved student achievement. Barriers to Creative Teaching implementation in the classroom were sometimes different by school level. Across all levels, the most frequent reasons for not doing Creative Teaching in the classroom were, "not having enough time" (51%) or Creative Teaching "competes with other priorities" (47%). While not a majority opinion, secondary teachers were much more likely to report that Creative Teaching, "doesn't get to the rigor of my content," than were elementary teachers (18% elementary, 35% in middle, and 47% in high).

Competency of Use:

Coaches reported competency ratings for 600 of the teachers who were coached. Of those who received coaching, 32% met or exceeded the program goal for 2017—2018. Across all CLI schools, including foundational and sustaining campuses, 62% of teachers (regardless of whether they were coached or not) rated their confidence in Creative Teaching as a 75% or higher on a 0 to 100-point scale.

Creative Teaching and Student Outcomes

In addition to tracking teacher's reactions to professional development in Creative Teaching and their subsequent use of it in the classroom, we wanted to understand how Creative Teaching in the classroom relates to student outcomes. For each desired outcome we used a complex multiple regression model to look for relationships with teachers' Creative Teacher use, factoring in both how well teachers know the method and how often they use it with their students. These analyses were run for all students together, as well as by student demographic sub-groups. The summary of those relationships can be seen in the chart below (Table 1). The regression model always held two powerful variables as constants: the teacher's general quality of instruction and the student's socio-economic status. When relationships were determined to be significant, we investigated other factors that might be confounding the results (See page 8 for Methodology information). In some cases, we found that historical differences between vertical teams might be explaining the results.

Table 1.

The level of Creative Teaching implementation was positively related to several student outcomes at the elementary level.

Elementary	Overall	LEP	Non-LEP	Special Ed	Non-Special Ed	Hispanic	Non-Hispanic
STAAR 3rd-5th Math	↑	-	-	-	-	-	-
STAAR 3rd -5th Reading	-	↑	-	-	-	↑	-
STAAR 5th Science	-	-	-	-	-	-	-
Elementary Engagement	↑	-	-	-	-	-	-
"I like to come to school"	↑	-	-	-	-	-	-
"My schoolwork makes me think about things in new ways"	-	-	-	-	-	-	-
"I have fun learning in my classes"	↑	-	-	↑↑	↑	-	-
School attendance	-	-	-	-	-	-	-
SEL skills	-	-	-	-	-	-	↓

Secondary	Overall	LEP	Non-LEP	Special Ed	Non-Special Ed	Hispanic	Non-Hispanic
Secondary Engagement	-	-	-	-	-	-	-
"I like to come to school"	-	-	-	-	-	-	-
"My schoolwork makes me think about things in new ways"	-	-	-	-	-	-	-
"I have fun learning in my classes"	-	-	-	-	-	-	-
School attendance	↓	-	-	-	-	-	-

Source: AISD student records; Creative Teaching implementation ratings

Note. Each regression model was analyzed for the overall population, with the students' SES status and the teachers' general instructional quality as controls, as well as looking for interactions by each sub group. When a significant interaction was detected for a sub group, the regression model was run comparing those in the group to those not in the group. ↑indicates a significant ($p < .05$) positive relationship between creative teaching received by students in that group and the students' outcomes; ↑↑ also indicates a significant ($p < .05$) positive relationship between creative teaching received by students in that group and the students' outcomes, but one had a stronger increase in the positive direction; ↓indicates a significant ($p < .05$) negative relationship between creative teaching received by students in that group and the students' outcomes; "-" indicates no significant relationships found. Representative samples were available based on White status Black status, Asian status, or two or races status, but no moderating effects were found on any student outcomes based on those differences.

Creative Teaching Analysis Method

In the interest of analytic rigor, this year's analysis of Creative Teaching was restricted to most valid data, took an increasingly strict approach to controlling for external variables, and was designed to look for both overall relationships, and moderating effects for student subgroups. First, we limited our analysis to certain groups of teachers and certain groups of students. For the teacher cohort, we limited our analysis to those who received coaching and for whom we have data on both their competency of use, based on a professional observation, and their self-reported frequency of use ($n = 560$). With this information we created a Creative Teaching factor for each teacher, which is the product of each teacher's competency in Creative Teaching and their frequency of use in the classroom. For the student cohort, we limited our analysis to students who received instruction from those teachers and attended one school for 85% of the year or more ($n = 4{,}414$). The students' exposure to Creative Teaching was weighted based on their relative exposure to their many different teachers' Creative Teaching factor. The totality of these restrictions improved the quality of the data used in the analysis, but made it impossible to get enough data to have a representative sample to study secondary academic outcomes.

To ensure that we were not confounding good overall teaching with good Creative Teaching, we controlled for the overall teaching proficiency, using spring scores from the instructional practice observation score of the district's teacher appraisal system. The Instructional Practice Observation Rubric is content neutral and measures pedagogical skills related to student engagement, assessment and feedback, differentiation, problem solving and critical thinking, classroom expectations, routines and procedures, and classroom climate. Teachers' instructional practice scores were significantly correlated with the Creative Teaching factor ($r = .14$, $p < 0.0001$). By controlling for those relationships, our analyses were able to estimate the unique influence of Creative Teaching on student outcomes, above and beyond the influence of overall teaching proficiency.

We also controlled for SES, but for different reasons. Numerous studies indicate strong correlations between SES and academic achievement, which was supported by our historic data regarding AISD students. To give some idea of the strength of the relationship, even at the campus level, in prior years we found a strong correlation between the percentage of students on a campus who qualified for free or reduced price lunch and all student outcomes. In 2016-2017 the weakest negative relationship between SES and the percentage of students meeting the STAAR science standard ($r = .71$, $p < 0.05$) and the strongest negative relationship on the percentage of students meeting the STAAR advanced reading standard ($r = .95$, $p < 0.05$). In other words, as the percentage of students with free and reduced lunch increases on a campus, the percentage of students passing the STAAR tests decreased. The influence of SES is so strong, that it needs to be silenced in order to hear the influence of less impactful factors. In our multilinear regression analysis of elementary student outcomes, we controlled for each child's individual SES, as determined by free or reduced price lunch status from school records, in order to best capture the unique influence of Creative Teaching.

To determine whether certain sub groups of students related to Creative Teaching in different ways, we ran also each analysis looking for significant interaction effects based on those subgroups. When a significant interaction was detected for a sub group, the regression model was run comparing those in the group to those not in the group.

Finding #1: Elementary Students had better engagement when teachers implemented Creative Teaching at higher levels.

The level of teacher implementation in Creative Teaching strategies was found to be positively related to student engagement, as measured by the engagement scale of the 2017—2018 Student Climate Survey ($\beta = .081$, $p = .0006$, $n = 1{,}719$), controlling for teachers' overall proficiency and students' SES, two factors known to greatly influence student outcomes (Table 1, Figure 6). Student engagement scores were derived from a subset of seven questions on the 2017–2018 AISD Student Climate Survey:

- *I like to come to school.
- I enjoy doing my schoolwork.
- My homework helps me learn the things I need to know.
- *My schoolwork makes me think about things in new ways.
- *I have fun learning in my classes.
- My teachers connect what I am doing to my life outside the classroom.
- I receive recognition or praise for doing good work.

Program leaders judged three of these statements (i.e., those indicated by asterisks above) to be most relevant to the implementation of CLI, so we analyzed these statements individually. Again, controlling for SES and overall teachers' overall proficiency, teacher implementation of Creative Teaching was significantly related to student's responses to the following statements: "I like to go to school" ($\beta = .103$, $p = .005$, $n = 1{,}667$) and "I have fun learning in my classes" ($\beta = .096$, $p = .0021$, $n = 1{,}662$). This pattern repeats the results of analysis done in 2016-2017. As in previous years, these findings are aligned with the perceptions of the teachers, 98% of whom believed the professional development opportunities they received through CLI gave them tools to more actively engaged students in their learning.

Figure 6.

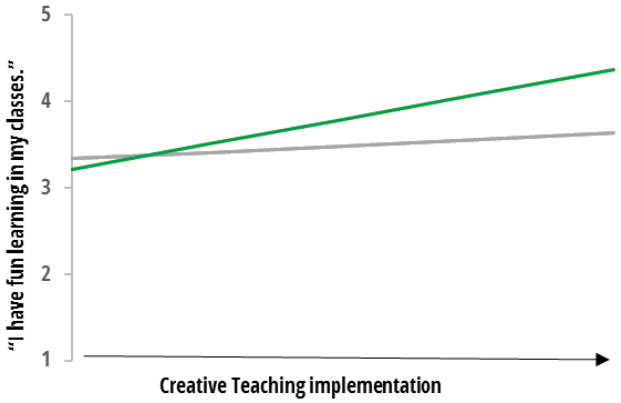
Elementary students with teachers who implemented Creative Teaching at higher levels were more engaged in school than students whose teachers implemented at lower levels.

Note. Student engagement scale includes four items in addition to the three shown above (i.e. I enjoy doing my schoolwork; My homework helps me learn the things I need to know; My teachers connect what I am doing to my life outside the classroom, I receive recognition or praise for doing good work). Variables with asterisks were significant in the regression model, controlling for SES and overall instructional practice. The figure above does not factor in those controls, but rather, represents the mean student response of the highest and lowest quartiles of Creative Teaching implementers.

In addition to the overall positive relationships, we found a positive moderating effect for students receiving special education services (SPED students) on the relationship between Creative Teaching implementation and the statement "I have fun learning in my classes." Although Creative Teaching implementation was already positively related to engagement for all students, the SPED students experienced a much stronger relationship ($\beta = .36$, $p = .004$) than did the non-SPED students ($\beta = .067$, $p = .04$) between Creative Teaching implementation and having fun learning in their classrooms (Figure 7). This finding was supported by narrative comments by special education teachers that said that Creative Teaching, "creates a positive learning environment," is "super fun," and "kids love it."

Figure 7.

SPED students level of agreement with "I have fun learning in my classes" increased more than non-SPED student as Creative Teaching implementation increased.



Source: CLI coach documentation, teacher appraisal records, student records 2017—2018

Note. For the purpose of illustrating the theoretical interaction, overall instructional practice and SES are entered into the regression equation at the mean for this group of 1,662 elementary students. Sped stats: $\beta = .36$; $p = .004$; and non-Sped stats: $\beta = .067$, $p = .04$.

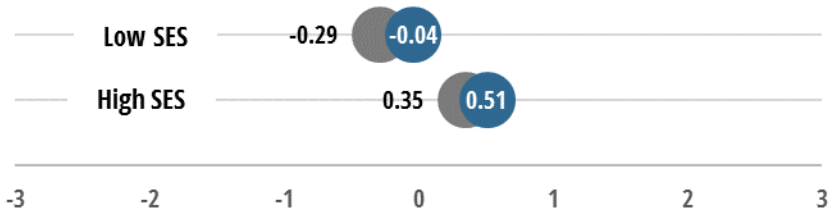
Even though 94% (256 of 273) of secondary teachers reported that they choose to use Creative Teaching in their classroom because it engages their students, no statistical relationships were found for secondary engagement.

Finding #2: Elementary students had better outcomes in math when their teachers implemented Creative Teaching at higher levels.

Teacher implementation in Creative Teaching strategies was found to be positively related to the 3rd-5th grade STAAR scores in Math (β = .014, p = .025, n = 1,160), controlling for teachers' overall proficiency and students' SES (Figure 8). This means that students who had teachers implementing Creative Teaching at higher levels had higher math tests scores (converted to Z scores for analysis*) than students whose teachers implemented Creative Teaching at lower levels.[2]

Figure 8.

Student whose teachers implemented Creative Teaching at higher levels scored better on 3-5th STAAR Math than students whose teachers implemented Creative Teaching at lower levels.



Source: CLI coach documentation, student records 2017—2018 (n = 568)
Note. The regression model analyzing STAAR math scores controlled for SES and overall instructional practice. The figure above does not factor overall instructional practice, but rather, represents the average STAAR math scores of the highest and lowest quartiles of Creative Teaching implementers for low and high SES students.

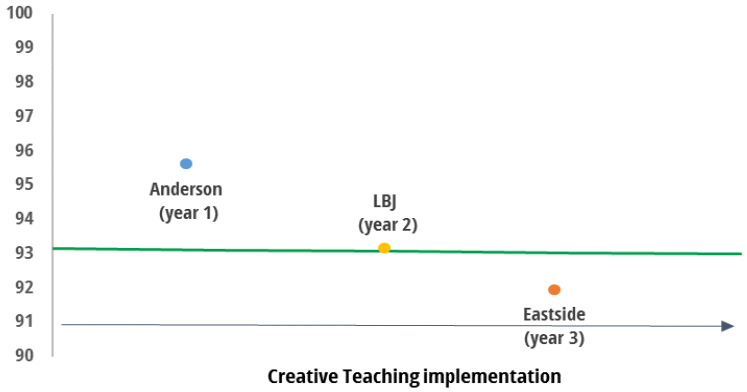
[2] Z scores are used in this report to transform students' STAAR scale scores. When scores are scaled differently (e.g., STAAR scores are scaled at each grade level in each subject), it is impossible to compare them with each other. Transforming scores math scores from 3rd, 4th, and 5th grades into z score is a way to standardize scores so they can be fairly compared between groups or over time. In this analysis, Z scores range from −3 to +3, 0 indicates the mean score, negative values indicate scores below the mean, and positive values indicate scores above the mean.

Finding #3: Elementary LEP students had better outcomes in STAAR reading when their teachers implemented Creative Teaching at higher levels.

Though Creative Teaching implementation wasn't related to reading scores for all students, or for non-LEP students on their own, there was a significant positive relationship for LEP students between Creative Teaching implementation and STAAR reading scores (β = .14, p = .03) (Figure 9). The same pattern was observed between Hispanic and non-Hispanic groups of students, however significance disappeared if LEP students were removed from the Hispanic model (β = .12, p = .04). However, there is a lot of overlap between the Hispanic and LEP demographic groups in elementary school, and the significance of the Hispanic relationship disappeared when LEP students were eliminated from the Hispanic model and increased when the Hispanic model was limited to LEP students. This suggests that the Creative Teaching strategies might be particularly well suited to students who are not proficient in English.

No results were found when looking at STAAR results on 5th grade science and not enough data was collected to analyze secondary academic outcomes.

Figure 9.
For LEP students, STAAR reading scores are better when their teachers' Creative Teaching implementation is better, but not for non-LEP students.

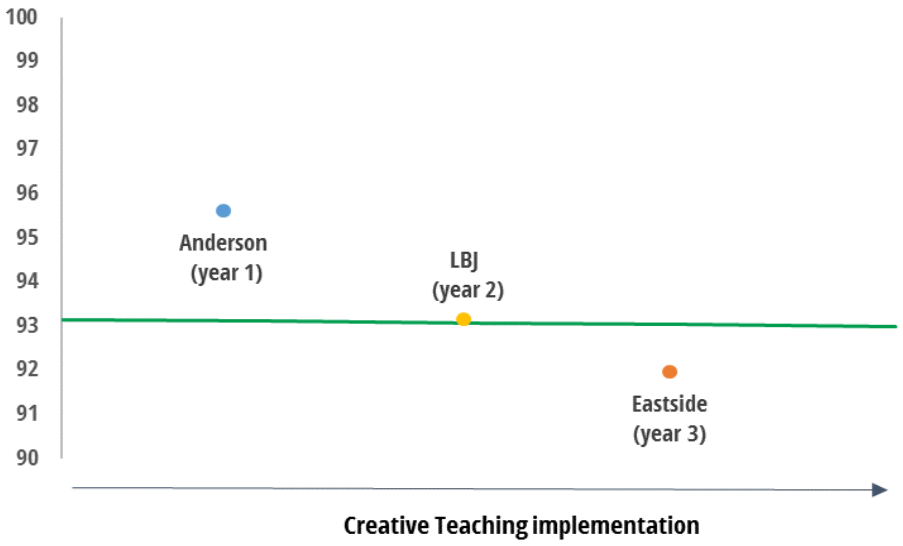


Source: CLI coach documentation, teacher appraisal records, student records 2017—2018
Note. LEP interaction: p = .004 β = .24, n = 1,703. No relationship for non-LEP (n = 997), sig and positive for LEP (p = .03, β = .14, n = 706). sig and positive for LEP (p = .04, β = .12, n = 1,046).

Finding #4: Secondary attendance was inversely related to Creative Teaching implementation, probably due to differences between vertical teams.

We found a weak, but significant, inverse relationship between secondary attendance and Creative Teaching implementation, when controlling for teachers' overall instructional practice and the students' economic status ($p = .011$, $\beta = 15.57$, $n = 1{,}111$). This theoretical relationship (indicated by the green line in Figure 10 below) might be explained by the fact that our current analysis is cross-sectional (one snapshot in time) rather than longitudinal (controlling for prior outcomes or using degree of change). The vertical teams that have been involved in CLI the longest and have the most practiced teachers also happen to have historically much lower attendance than those vertical teams that have more recently joined (all comparisons between vertical teams are significantly different, $p < .05$). No relationships were found for elementary attendance this year, though previous years' analyses have found a positive relationship between elementary attendance and Creative Teaching implementation. In our analysis of the 2017—2018 data, no interactions were found were student sub-groups at either the elementary or secondary level.

Figure 10.
The inverse relationship between secondary attendance and Creative Teaching implementation can be explained by the number of years a vertical team has been involved in CLI and their overall average attendance.

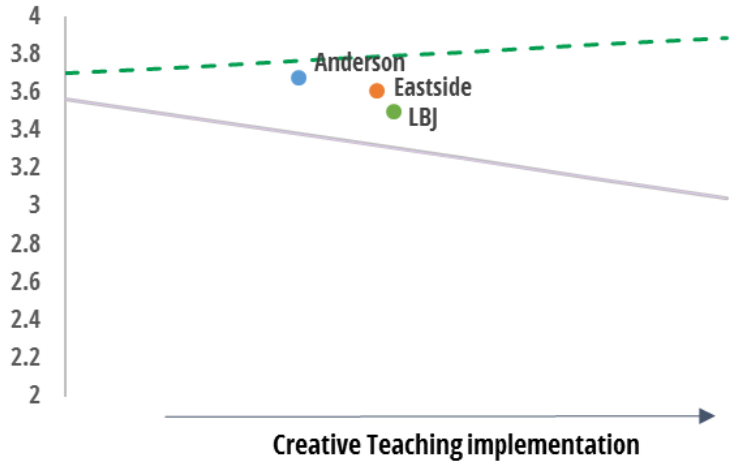


Source: CLI coach documentation, teacher appraisal records, student records 2017—2018

Finding #5: Non-Hispanic elementary students had worse outcomes in SEL skills when their teachers implemented Creative Teaching at higher levels.

We found a positive moderating effect for Hispanic students on the relationship between Creative Teaching implementation and their SEL skills when compared to their peers (Figure 11). Under further scrutiny, this difference in impact seems to be less a story about a positive relationship for Hispanic students than it is an inverse relationship for non-Hispanic students. This theoretical relationship (indicated by the light purple line Figure 11 below) might be explained by the fact that the vertical teams that have been involved in CLI the longest have significantly lower SEL skills overall than those that have more recently joined (all comparisons are significantly different, $p < .05$).

Figure 11.
While there was an inverse relationship for non-Hispanic students between their teachers' Creative Teaching implementation and their SEL skills, the relationship did not extend to Hispanic students, and might be explained by differences between vertical teams.



Source: CLI coach documentation, teacher appraisal records, student records 2017—2018
Notes: Hispanic interaction: $p < .0001$, $\beta = .14$, $n = 3,635$. No relationship for Hispanic students on their own (n = 2,050), sig and negative for non-Hispanic students ($p = .009$, $B = -.078$, $n = 1,585$).

Conclusions and Recommendations

As with any cross sectional study that only captures one moment in time, we are cognizant of the limitations of this study. The methodology used in this report strictly controlled for strong contributing factors from individual students and individual teachers, but not the campus. Some findings might have been confounded by the number of years a school was in CLI and their pre-existing outcomes. (Add? For example, some vertical teams were strategically recruited into CLI in order to address some existing challenges at those campuses, such as historically low attendance rates.) Future measurement efforts should control for baseline outcomes to get a clearer perspective of how Creative Teaching is impacting diverse schools. Despite these limitations, for the first time, this report systematically examined differences in the relationships between Creative Teaching implementation and desired outcomes, while factoring in student demographic information on race, ethnicity, SPED status, LEP status and SES status. Understanding more about how different types of students are interacting with Creative Teaching can be extremely beneficial to the continued development of the strategies and implementation procedures. To that end, we offer this summary and programmatic recommendations.

In 2017—2018, professional development opportunities in Creative Teaching continued to be celebrated by almost all teachers, who highly rated the workshops and coaching experiences. In terms of classroom implementation across CLI schools, teachers used an average of 1.7 unique strategies at least once a week, with elementary teachers using Creative Teaching strategies at approximately twice the rate of secondary teachers. Almost all teachers reported they include Creative Teaching in their regular teaching practice because it engaged their students. For elementary teachers, this belief was supported by the findings that elementary students with teachers who implement Creative Teaching at higher levels were more likely to report higher levels school engagement. Specifically, those students reported that they like to come to school more and that they have more fun learning in their classes. The majority of teachers also reported the strategies improved their instruction, increased student voice, fostered content retention, and improved student achievement. At the elementary level, there was also evidence to support the use of Creative Teaching in reading instruction for LEP students, and math instruction across all demographic groups. However, at the secondary level, we and did not have enough data to analyze the relationship between Creative Teaching and academic outcomes, found no evidence to support a relationship between school engagement and Creative Teaching, and found a weak, but significant, negative link between attendance and Creative Teaching. Given the outcomes, we advise the following:

Recommendation #1: Use Creative Teaching in elementary schools for student engagement. Creative Teaching strategies are designed to engage students, not just by getting them out of their seats, but also by thinking about topics in more rigorous ways. Creative teaching strategies often use student-generated symbolism to conduct analysis or synthesis on a topic that might have otherwise been simply delivered through direct instruction. Because evidence suggest that higher levels of Creative Teaching implementation are related to higher levels of engagement, we recommend that teachers leverage Creative Teaching to harness their student engagement across all

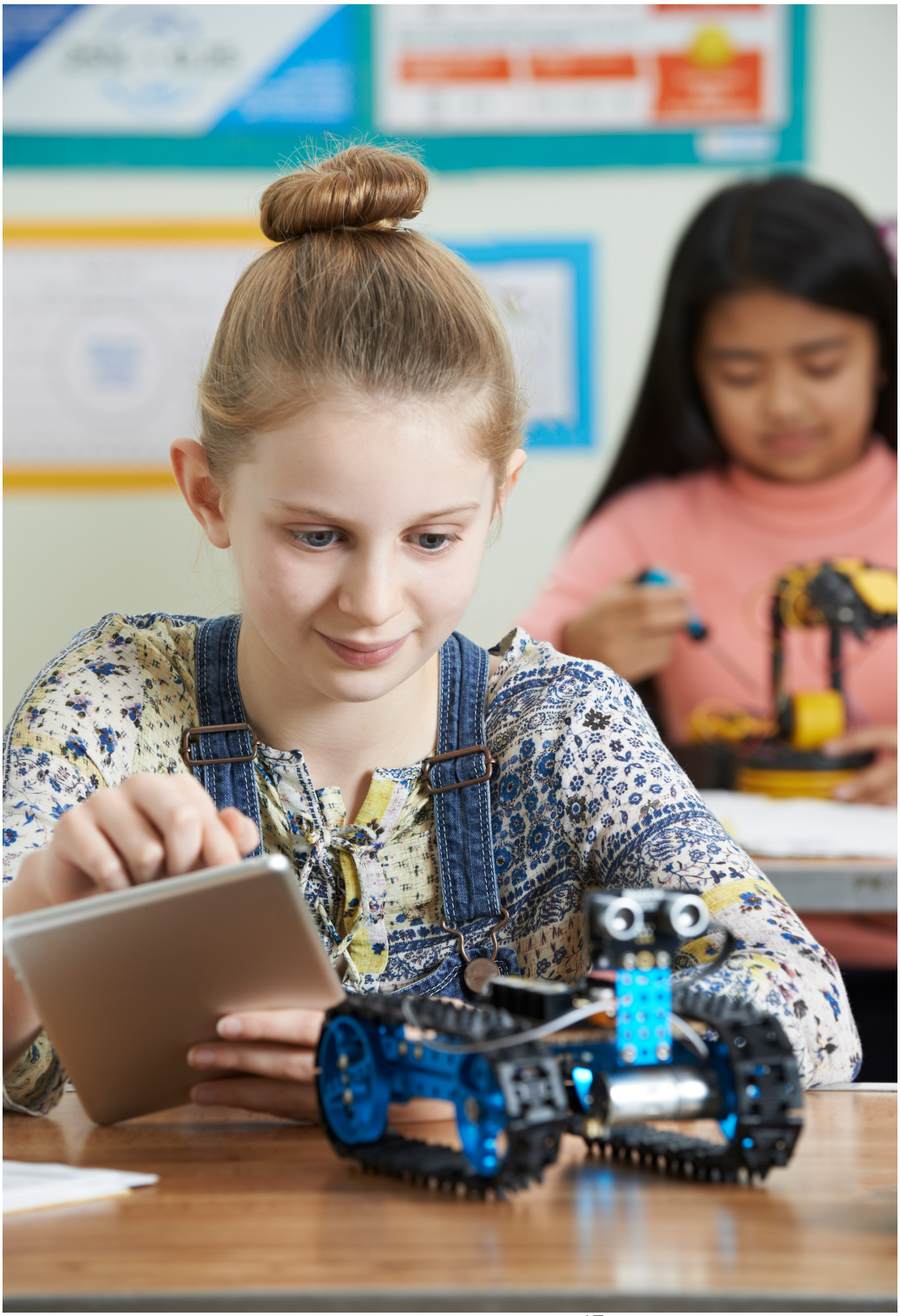
subjects. Creative Teaching might be particularly useful in schools where students engagement is low and students are struggling with their levels of engagement.

Recommendation #2: CLI leaderships should continue to prioritize collaboration with the multilingual leadership to leverage the advantages Creative Teaching seems to provide for LEP students on STAAR reading achievement in elementary school. Findings in this report that suggest that LEP students who have teachers who implement Creative Teaching at higher levels also have higher scores in STAAR Reading. This is not surprising because Creative Teaching strategies deemphasize the need for English vocabulary that is necessary to process concepts through traditional direct instruction and instead offer access to complex concepts through visual and kinesthetic forms of learning. While this report doesn't attempt to establish exactly why reading outcomes for LEP students are positively associated with Creative Teaching, we do know that there has been some deliberate collaboration between the CLI team and the multilingual team in recent years. One possible interpretation is that collaborative work has started to be fruitful. In any case, our recommendation is that future collaboration should be continued.

Recommendation #3: Rethink the approach to Creative Teaching in secondary schools. Based on the absence of evidence that has been ascertained by this round of analysis, as well as from previous year's analyses, we are unable to make a clear evaluation of Creative Teaching's relationship with student outcomes at the secondary level. It is beyond the scope of this report to say whether the lack of evidence is due to measurement procedures or barriers to implementation. It is entirely possible that Creative Teaching could be having an effect on secondary student outcomes which has not been captured by our methodology. On the other hand, it is possible that Creative Teaching is not actually yielding the desired outcomes the program intends. Because of these trends, in our absence of findings on student outcomes, we recommend a strategic rethinking of Creative teaching measurement or implementation in secondary schools (i.e., consider employing a different set of Creative Teaching strategies, particularly those that target SAT/ACT skills, offer subject specific professional development, and develop a more robust library of exemplar lessons that work with the most advanced TEKS in each subject area.)

Recommendation #4: Accelerate the roll out process by targeting professional development to teachers who are most interested in implementing Creative Teaching in their classrooms. Until now, CLI has rolled out implementation one vertical team per year and tried to bring 100% of the teachers towards Creative Teaching competency. This was done intentionally, prioritizing schools with the highest economic need to go earlier, with a goal that Creative Teaching reach every student at those schools. However, in 2018-2019, it was decided that the program was too logistically strapped to continue this rate of expansion without an increase in resources. Given the district's current budget shortfall, such an increase seems incredibly unlikely. During the same time period, however, teachers reported extremely high levels of satisfaction with their Creative Teaching development and 64% (812 teachers) reported being interested in learning more about Creative Teaching strategies. We recommend targeting professional development toward those teachers who are eager to practice Creative Teaching in the classroom with the expectation not only that it will be more efficient

use of the Creative Teaching coaches, but that it might eventually spread to other teachers through information channels. If program leaders decide to go this route, we also recommend exploring ways to continue prioritizing the professional development of teachers at school with high economic need so that Creative Teaching continues to be equitably available to all AISD students.



Appendices

Appendix A. Creative Teaching Condensed Rubric

Stage of Creative Teaching cycle	0 - Not using	1 - Beginning	2 - Developing	3 - Applying	4 - Adapting and innovating
Facilitating Creative Teaching	Teacher **never** facilitates Creative Teaching or assesses and adjusts instruction during the lesson	With **support**, teacher **inconsistently** facilitates Creative Teaching and assesses and adjusts instruction during the lesson to engage **some** students in a learning process to promote deeper understanding	With **minimal** support, teacher **somewhat consistently** facilitates Creative Teaching and assesses and adjusts instruction during the lesson to differentiate for **some** students in a learning process to promote student-led inquiry and deeper understanding	Teacher **consistently** facilitates Creative Teaching and assesses and adjusts instruction during the lesson to engage and differentiate for **most** students in a learning process to promote student-led inquiry and deeper understanding	Teacher facilitates Creative Teaching **with fidelity** and **fluently** assesses and adjusts instruction during the lesson to engage and differentiate for **all** students equitably in a rigorous learning process that requires students to use all six Creative Teaching elements to promote student-led inquiry, metacognition and deeper understanding

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Austin Independent School District

Authors
Melissa Andrews, M.A., M.Ed., Cinda Christian, Ph.D., Holly Williams, Ph.D., Hui Zhao, Ph.D.

Department of Research and Evaluation
1111 West 6th Street, Suite D-350 | Austin, TX 78703-5338
512.414.1724 | fax: 512.414.1707

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