Lake County School District Cohort VIII Project Dream Evaluation Report

Submitted to:
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Date of Report: **October 15, 2022**
Dates of Service: **August 30, 2021-June 10, 2021**

Program Name(s): **Project Dream with the Lake County Elementary School**
Cohort: **VIII**

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Program Description

Program History
Project Dream through the Lake County School District encompasses After School, Friday, and Summer programs. Programs are mainly funded through the 21st Century Community Learning Centers (CCLC) Grant Program; donations and district funds also sustain programs. After School - Project Dream takes place Monday-Thursday when school is in session after school hours. Friday - Project Dream programs take place on most Fridays throughout the school year. And Summer – Project Dream takes place over summer break in alignment with other local offerings. All programs include social-emotional learning, academic enrichment, athletics, club programs, and activities with local partner organizations. Project Dream began after school programs in 2010 in response to community need; many families in Lake County work out of the county and therefore, need a safe place for their students to be during after school hours. Project Dream soon took on summer programming in the form of Rockies Rock summer camp. This summer camp has since shifted to be under our partner organization, Get Outdoors Leadville! However, Project Dream is still involved by providing scholarships for students to join the camp and running after camp care for families so that they might continue to work full-time during the summer months. In the fall of 2020, Lake County School District moved to a four-day week calendar. In response to this shift, Project Dream began a full day of Friday programming so students would again have a safe place to be on this day. As illustrated, Project Dream serves the community and their needs. As such, programs have consistently responded to community needs and have formed programming around those needs.

Program Vision
Working together with community partners, we will create a healthier, safer, more prosperous Leadville where children are empowered to learn, encouraged to explore, challenged to grow, and inspired to lead.

Program Mission
LCSD challenges students to reach their fullest potential through personal, engaged and rigorous learning in the classroom and beyond. Through Project Dream we engage families, school staff, and our community to provide students with a variety of enriching activities, positive relationships in a Crew-like setting, and tools for greater social-emotional and academic success, all designed to complement the students' school day.

Program Beliefs
- We believe that LCSD can work alongside strong community partners to enrich the lives of our students.
- We believe that we can create an inclusive environment to engage and empower students and their families.
- We believe that through engagement and empowerment, we can create opportunities that enhance the experiences of students in Lake County.

Program Goals and Objectives
- **Academic Achievement:** Provide opportunities for academic enrichment to help students meet state and local academic standards.
- **Essential Skills:** Offer students a broad array of additional services, programs, and activities designed to reinforce and complement the regular academic program of participating students.
- **Commitment to School:** Support increased attendance rates and overall commitment to school.
- **Family Engagement:** Offer families of students served by opportunities for active and meaningful engagement in their children's education.

Program Activities

- **After School Programs for K-2:** STEM Club, Outdoor Club with Get Outdoors Leadville!, Art Club, Gym Games, Cooking Club, Woodworking Club, Dance Club, Bookworms Club, Alphabet Club
- **Friday Programs for K-2:** Full-day programming which includes a social-emotional learning curriculum, literacy, Spanish lessons, and activities with community partners such as Get Outdoors Leadville! and the Lake County Public Library
- **Summer Programs for K-2:** Scholarships to attend the local, Rockies Rock summer camp, after care in the evenings in the form of Literacy Club, Art Club, Math Games Club, STEM Club, and the El Camioncito Club
- **Programs for Adults:** GED/ESL courses through the local, Colorado Mountain College, Family Learning Institutes, volunteer opportunities through the Parent Mentor Program

Demographics
According to the October Pupil Membership counts on the Colorado Department of Education's website (www.cde.state.co.us), 216 total students attended Lake County Elementary School during the 2021-2022 school year. This is the site served by the Cohort VIII grant. Project Dream served 188 of those students or 87% of the total student population at the school. Of those, there was a 50/50 split between males and females that participated in Project Dream, 26% were in kindergarten, 42% were in first grade, and 31% were in second grade. In addition, 51% of Project Dream participants qualified for free or reduced lunch compared to 53% school-wide and 54% identified as Hispanic or Latino compared to 56% school-wide. 9% of Project Dream participants received special education services compared to 12.5% school-wide, 32% were English Learners compared to 26% school-wide, and 13% qualified for homeless services. All Lake County Elementary School Students that qualified for homeless services participated in Project Dream during the 2021-2022 school year.

Evaluation Background

Evaluated Components
The component of the program that is evaluated are our STEM Clubs. At Lake County Elementary School, these clubs serve to expose students to the field of STEM. Each and every student that is enrolled in Project Dream will participate in the STEM Club. All activities during the STEM Club serve to promote students' creativity, innovation, critical thinking, and problem-solving skills but in different ways. On rotating weeks, students conduct experiments and have discussions around the experiments they conducted which include predictions and analysis. The opposing weeks, students explore skills through building with Lego kits, tangrams, and magnetic pieces. During exploration weeks, leaders try to let students do as much on their own as possible with prompting and support while during experiment weeks, leaders lead students through discussions and predictions.

During this evaluation, we have decided to expand upon our performance measures and evaluate additional areas. In our community, we have noticed that after graduation, very few students go into STEM careers. Because of this, we have begun promoting skills in STEM very early on. During after school programs, we have decided to commit a large amount of time and energy to providing these STEM Clubs at the elementary level so that students have early exposure to the field. According to the research, few opportunities exist at the elementary level for students to explore STEM but early exposure can impact career choices later in life (DeJarnette, 2012). Our goal each year is to see improvements in the skills listed below: creativity, innovation, critical thinking, and problem-solving.

Purpose of Evaluation
The purpose of this evaluation is to examine the efficacy of STEM Clubs on students' creativity, innovation, critical thinking, and problem-solving skills. We sought to address the following questions:

- **Research Question 1:** Was there an increase in regular STEM Club participants' creativity, innovation, critical thinking, and problem-solving skills according to the end-of-year teacher survey?
- **Research Question 2:** Was the growth in any of the four skill areas (creativity, innovation, critical thinking, and problem-solving) of regular STEM Club participants, greater or lesser for participants who are English-Learners or students who qualify for free or reduced lunch?

Evaluator Details
The Out of School Time Director conducted this evaluation in collaboration with the school's Site Supervisor using demographic data from the district's PowerSchool system, attendance data from EZReports, and survey data collected from students' classroom teachers. Project Dream began running STEM Clubs the first day of programs on August 30th, 2021. STEM Clubs concluded on June 10th, 2022. This report includes students who attended Lake County Elementary School and Project Dream programs during the 2021-2022 school year.

Evaluation Methods

Evaluation Design
To measure the impact of STEM Clubs on students' creativity, innovation, critical thinking, and problem-solving skills; post-survey data was used through a teacher survey administered using the EZReports system. Two comparison groups were used during this evaluation. We looked at students who qualified for free or reduced lunch versus those who did not and English Learners versus non-English Learners. The STEM Club leader at Lake County Elementary School remained consistent throughout the entire year which was one less variable in the evaluation. This leader ran the STEM Club each day Monday-Thursday with the bi-weekly rotations mentioned above. One week was experiment week where the leader ran experiments with the students prompting discussion through predictions and debrief conversations. Opposing weeks were exploration weeks where students built using Lego kits, tried to imitate patterns using tangrams, and created 3D sculptures using magnetic tiles. During exploration weeks, the leader would ask students open-ended questions about what they were doing and why. The leader tried not to interfere with students' work and let them grow through being challenged. The leader would lightly assist when a student asked for help but encouraged students to challenge themselves and work through the struggle to get to their final product.

Evaluation Areas of Interest
Of specific interest was the growth students made in their creativity, innovation, critical thinking, and problem-solving skills. Research has shown that skills such as creativity motivates students to learn and keeps them engaged in their learning (Blašková, 2014). Not only that but 21st century skills are in high demand for employers, many professionals state that they use skills such as creative thinking daily in their jobs (Berland, 2012).

Evaluation Tools and Data Used
At the close of the year, students' classroom teachers completed a survey for each student which asked the teacher to rate the student's growth on the following four skills: creativity, innovation, critical thinking, and problem-solving. In addition to the survey, we pulled demographic data from the district's PowerSchool system. Lastly, we pulled attendance data from the EZReports system to determine who qualified as a regular attendee of the club.

Results

Demographic of Participants

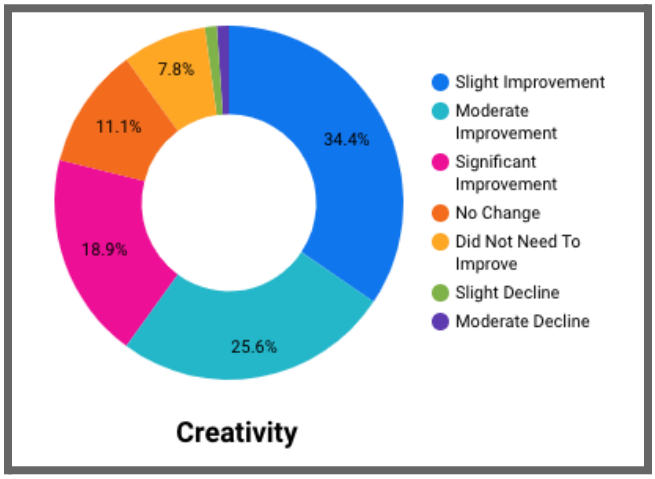
	Number	Percent
Total Participants	90	100%
Male	50	55.6%
Female	40	44.4%
Kindergarten	33	36.7%
First Grade	29	32.2%
Second Grade	28	31.1%
English Learners	16	17.8%
Non-English Learners	74	82.2%
Qualify for Free/Reduced Lunch	48	53.3%
Do not qualify for Free/Reduced Lunch	42	46.7%

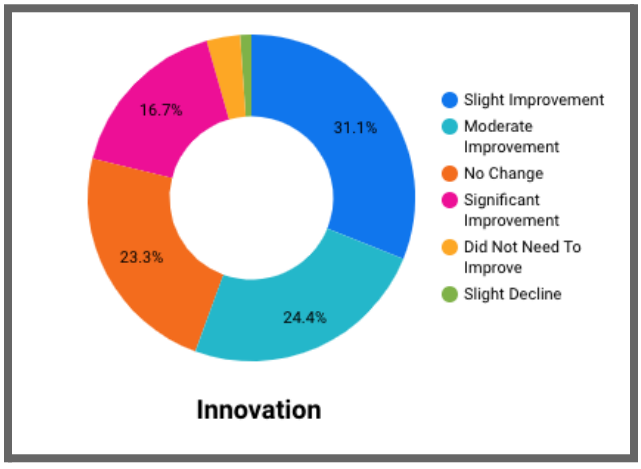
Analysis
Data was analyzed using percentage comparisons of the various groups based on end-of-year teacher surveys. We also looked at the different improvement ratings within comparison groups.

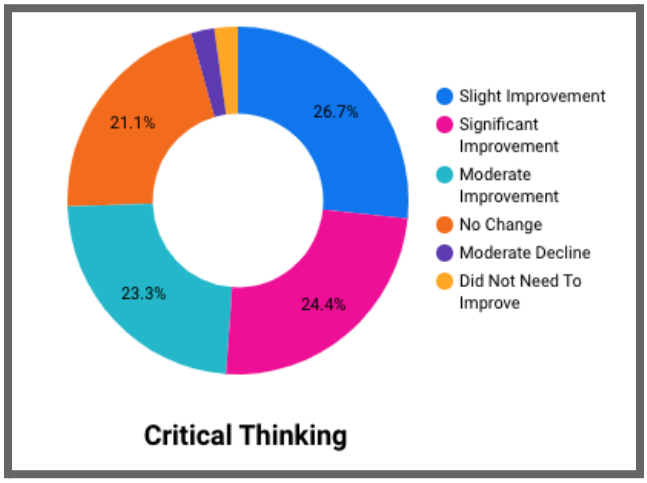
Findings

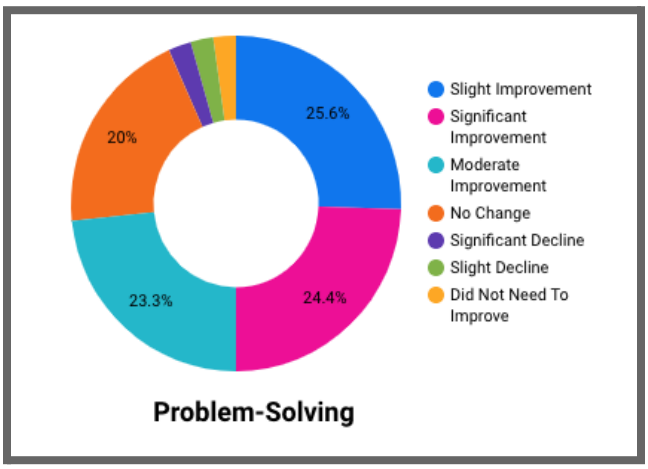
Research Question 1: Was there an increase in regular STEM Club participants' creativity, innovation, critical thinking, and problem-solving skills according to the end-of-year teacher survey?

As seen in the pie charts below, 78.9% of students that regularly participated regularly in STEM Clubs improved in **Creativity**, 72.2% improved in **Innovation,** 74.4% improved in **Critical Thinking,** and 73.3% improved in **Problem-Solving.** With this data, we can conclude that overall, students that participated regularly in STEM Clubs during after school Project Dream programs at the Lake County Elementary School, showed improvements in the four skill areas.





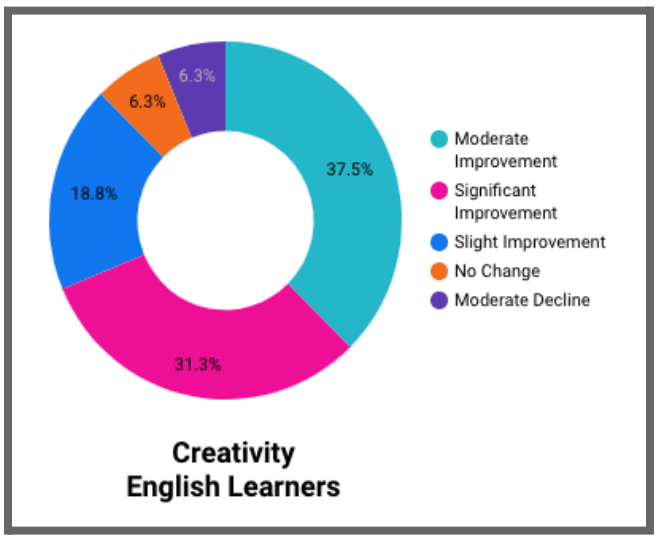


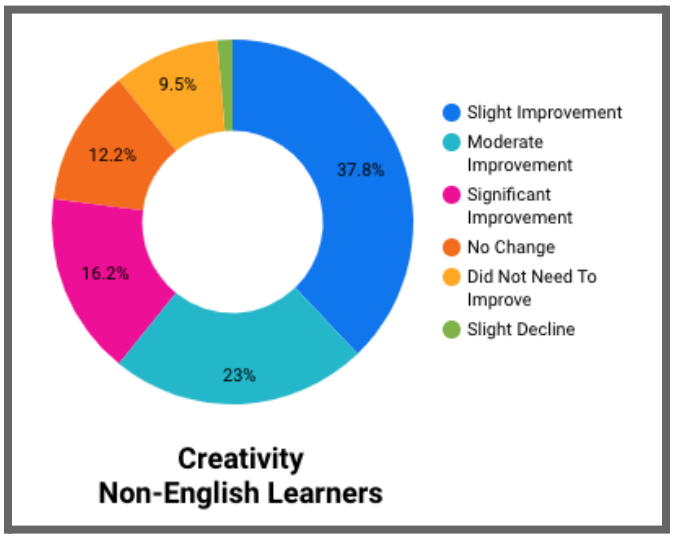


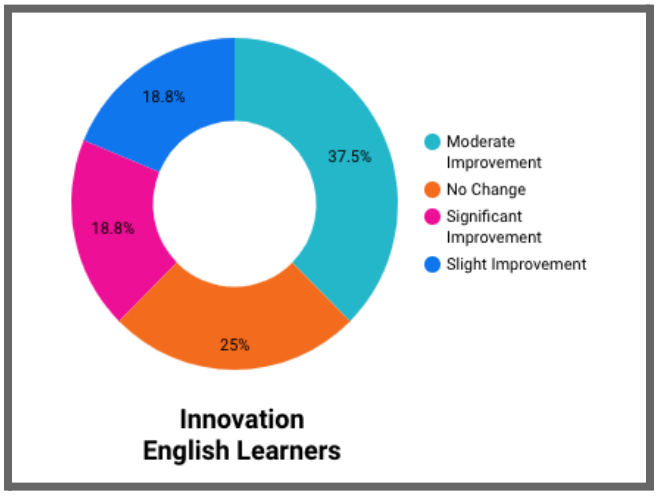
Research Question 2: Was the growth in any of the four skill areas (creativity, innovation, critical thinking, and problem-solving) of regular STEM Club participants, greater or lesser for participants who are English-Learners or students who qualify for free or reduced lunch?

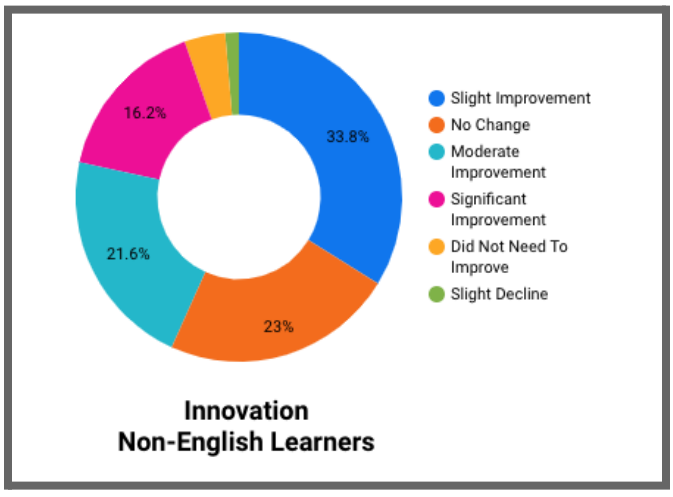
English Learners

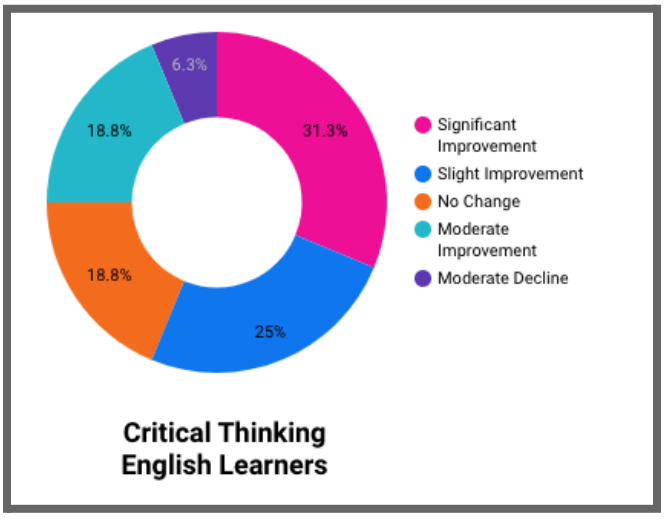
Beginning with English Learners in comparison to Non-English Learners, there are some notable differences to be observed. When comparing the two groups, 87.6% of English Learners improved in **Creativity** while only 77% of Non-English Learners improved in this skill area. Perhaps even more notable is that 31.3% of English Learners made *Significant Improvement* in the skill area of **Creativity** while only 16.2% of Non-English Learners made *Significant Improvement,* almost double the percentage of English Learners than non. Moving to the next skill area, **Innovation,** more comparable percentages can be observed. In this area, 75.1% of English Learners showed improvements while 71.6% of Non-English Learners made improvements. The main areas of difference worth noting are that 37.5% of English Learners made *Moderate Improvement,* while only 21.6% of Non-English Learners scored in the *Moderate Improvement* category. In the area of **Critical Thinking,** there are again some stark differences. Overall, 75.1% of English Learners showed improvements in this skill area while 74.3% of Non-English Learners showed improvements. Similar to **Creativity,** we see the largest percentage difference in the *Significant Improvement* category; 31.3% of English Learners showed *Significant Improvement* in the skill area of **Critical Thinking** while almost 10% less, 23%, of Non-English Learners showed the same improvement. The last skill area of **Problem-Solving** marks another large difference between the two groups evaluated. Overall, 81.4% of English Learners improved in this skill area while 71.6% of Non-English Learners showed improvements. This marks an almost 10% difference in overall improvements between the two groups. The main rated components to point out in this skill are the *Significant Improvement* and *Slight Improvement* categories. For English Learners, there were 31.3% of students that scored in each of the two categories. For Non-English Learners, there were 24.3% of students that fell into the *Slight Improvement* category and 23% that fell into the *Significant Improvement* category.


37.5%
31.3%
18.8%
6.3%
6.3%
Moderate Improvement
Significant Improvement
Slight Improvement
No Change
Moderate Decline
Creativity
English Learners


37.8%
23%
16.2%
12.2%
9.5%
Slight Improvement
Moderate Improvement
Significant Improvement
No Change
Did Not Need To Improve
Slight Decline
Creativity
Non-English Learners


37.5%
25%
18.8%
18.8%
Moderate Improvement
No Change
Significant Improvement
Slight Improvement
Innovation
English Learners


33.8%
23%
21.6%
16.2%
Slight Improvement
No Change
Moderate Improvement
Significant Improvement
Did Not Need To Improve
Slight Decline
Innovation
Non-English Learners


31.3%
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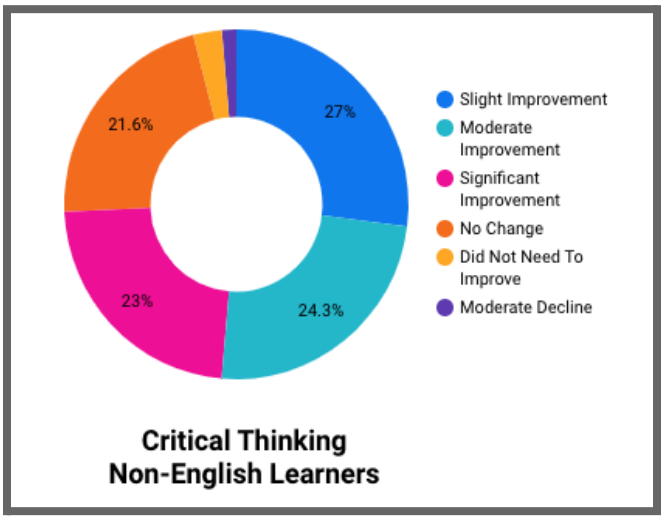
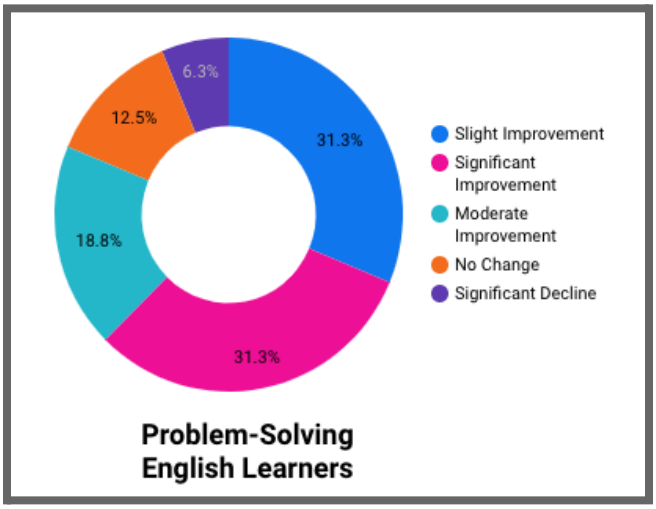
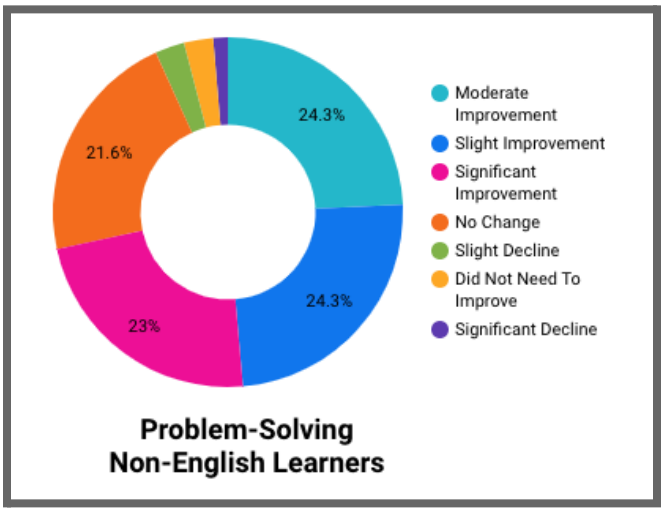
18.8%
6.3%
Significant Improvement
Slight Improvement
No Change
Moderate Improvement
Moderate Decline
Critical Thinking
English Learners

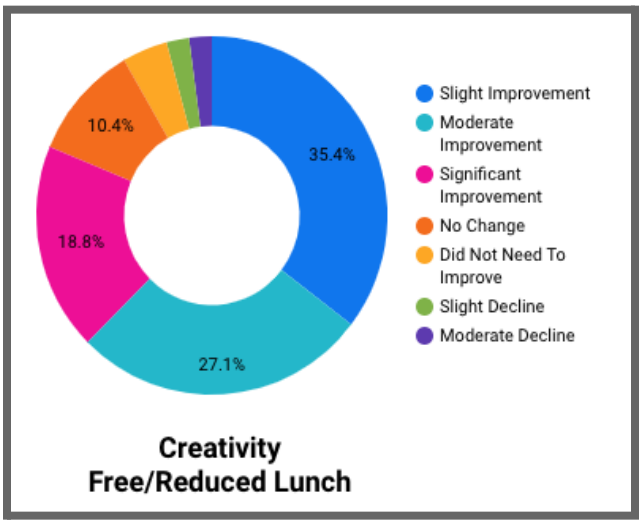

27%
24.3%
23%
21.6%
Slight Improvement
Moderate Improvement
Significant Improvement
No Change
Did Not Need To Improve
Moderate Decline
Critical Thinking
Non-English Learners

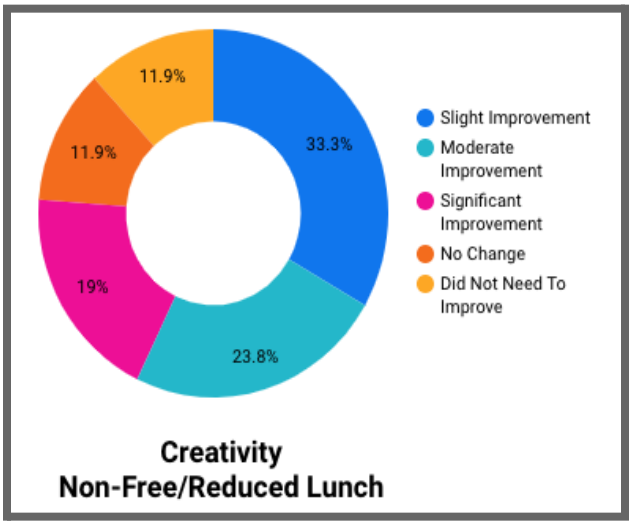


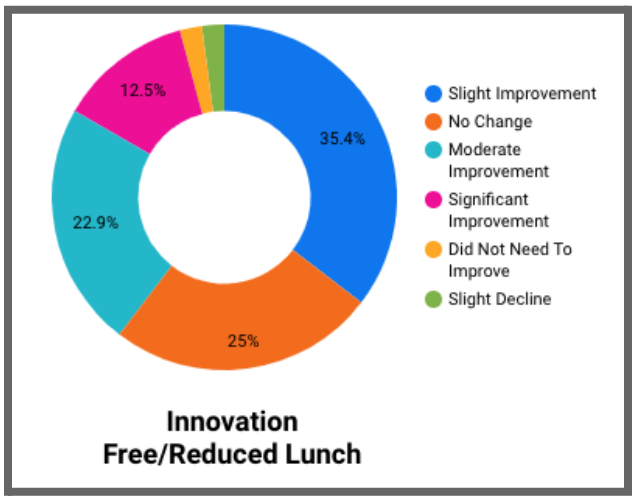


Free and Reduced Lunch

When analyzing the four skill areas comparing students that qualify for free and reduced lunch compared to those that did not qualify, some differences can be observed. When looking at **Creativity,** 81.3% of students that qualified for free or reduced lunch during the 2021-2022 school year made improvements while about %% less, 76.1%, of students that did not qualify for free or reduced lunch made improvements. For **Innovation,** 70.8% of students that qualified for free or reduced lunch made improvements while 73.8% of students that did not qualify for free or reduced lunch made improvements. The most noteworthy difference in **Innovation**, was that 21.4% of students that did not qualify for free or reduced lunch made *Significant Improvement* while only 12.5% of students that did qualify for free or reduced lunch made *Significant Improvement.* In the skill area of **Critical Thinking,** 75.1% of students that qualified for free or reduced lunch made improvements and 73.9% of students that did not qualify for free or reduced lunch made improvements. Although fewer students that did not qualify for free or reduced lunch made improvements overall, this group of students improved more significantly in the skill area of **Critical Thinking.** While only 18.8% of students that qualified for free or reduced lunch made *Significant Improvement,* 31% of students that did not qualify were rated in the same category. When analyzing **Problem-Solving,** 77.1% of students that qualified for free or reduced lunch made improvements while 69% of students that did not qualify for free or reduced lunch made improvements. The percentage scored in each area of *Slight Improvement, Moderate Improvement, and Significant Improvement* did not differ greatly, but the small percentage differences in each of these categories contributed to the 8% difference in overall improvement. All information presented can be seen in the charts below.


35.4%
27.1%
18.8%
10.4%
Slight Improvement
Moderate Improvement
Significant Improvement
No Change
Did Not Need To Improve
Slight Decline
Moderate Decline
Creativity
Free/Reduced Lunch


33.3%
23.8%
19%
11.9%
11.9%
Slight Improvement
Moderate Improvement
Significant Improvement
No Change
Did Not Need To Improve
Creativity
Non-Free/Reduced Lunch


35.4%
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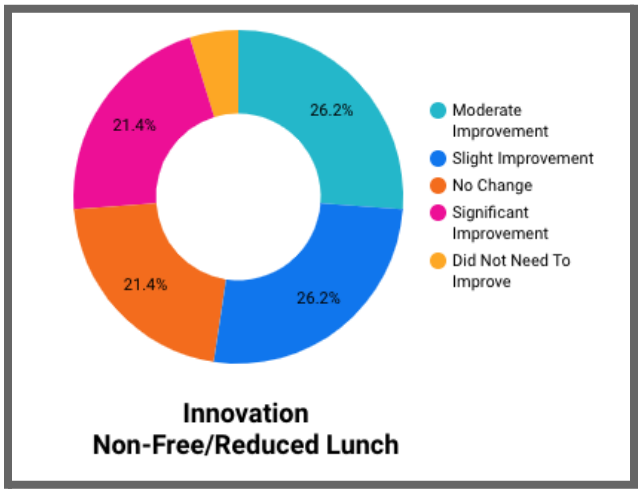
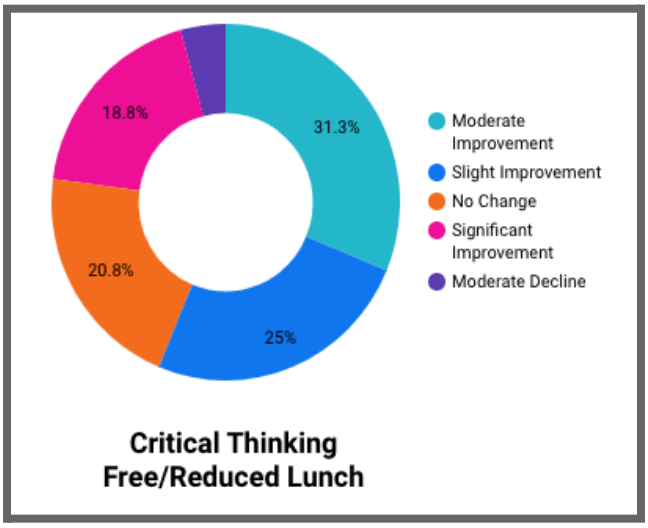
12.5%
Slight Improvement
No Change
Moderate Improvement
Significant Improvement
Did Not Need To Improve
Slight Decline
Innovation
Free/Reduced Lunch


26.2%
26.2%
21.4%
21.4%
Moderate Improvement
Slight Improvement
No Change
Significant Improvement
Did Not Need To Improve
Innovation
Non-Free/Reduced Lunch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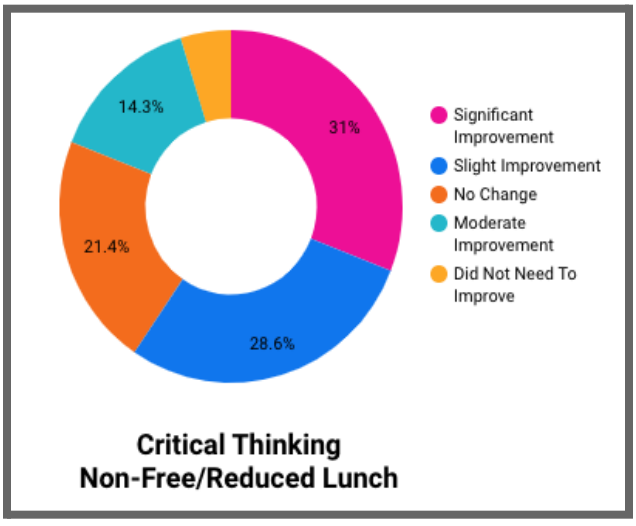
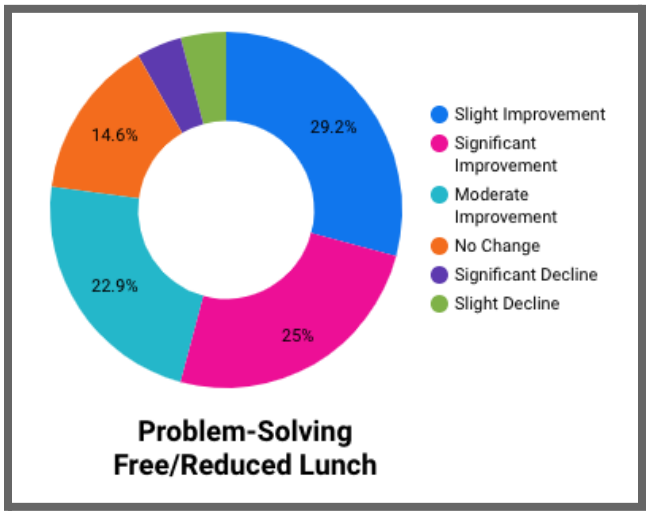
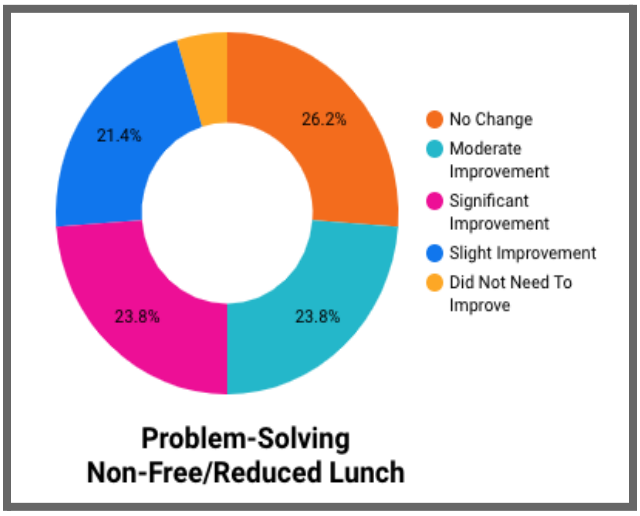
Moderate Improvement
Slight Improvement
No Change
Significant Improvement
Moderate Decline
Critical Thinking
Free/Reduced Lunch


31%
28.6%
21.4%
14.3%
Significant Improvement
Slight Improvement
No Change
Moderate Improvement
Did Not Need To Improve
Critical Thinking
Non-Free/Reduced Lunch





Conclusion

During the evaluation it was learned that Project Dream STEM Clubs at the Lake County Elementary School appear to show effectiveness in increasing **Creativity, Innovation, Critical Thinking,** and **Problem Solving** amongst students overall. This was shown in the findings from Research Question 1, where over 70% of students that regularly participated in STEM Clubs were rated as improving in the four skill areas. In the findings, it was discovered that English Learners made more significant improvements than Non-English Learners in each of the four skill areas. This was particularly true for **Creativity** and **Problem-Solving**. Although the other areas of **Innovation** and **Critical Thinking** did not show stark differences overall, English Learners seemed to have improved more drastically in these areas with a larger percentage of English Learners rated on the end-of-year teacher survey as having made *Significant Improvement.* We believe these differences are mainly due to language development and increased confidence over the course of the year. Project Dream STEM Clubs have students in groups of 12 or less. In these small groups, students are encouraged to be creative and problem-solve in an environment where it is okay to take risks and make mistakes. We believe that because of these small groups in a low-risk environment, students are more willing to take risks and carry that behavior over into their classrooms. Differences between students that qualified for free or reduced lunch and those that did not were less extreme. The largest differences noted were in the skill areas of **Creativity** and **Problem-Solving**. In these two areas, there was a 5% or greater difference in improvement overall for the two subgroups. With these findings, we plan to continue offering the STEM Club on the bi-weekly experiment and exploration schedule. We would like to see students that qualify for free and reduced lunch improve more in these skill areas. As such, a recommendation will be made to ensure all students participate evenly in the STEM Club regardless of the number of days per week they attend after school programs. Another recommendation is to ensure more students that are English Learners are participating in programs. As seen in the Demographic of Participants chart (p. 6), only 17.8% of regularly participating students were English Learners. This is in comparison to 32% of students who were English Learners and participated in Project Dream throughout the year but may not have hit the regular attendance mark. There was a clear improvement for English Learners in the four skill areas. it would therefore be beneficial to more students

to participate regularly in Project Dream after school STEM Clubs so that they might be able to witness those same improvements.

References/Appendices

STEM Teacher Survey

Teachers are asked to complete the following survey for any student that attended a STEM Club for 75 hours or more.

Response Anchors: Did Not Need To Improve, Significant Improvement, Moderate Improvement, Slight Improvement, No Change, Slight Decline, Moderate Decline, Significant Decline

Instruction
This survey is for students that participated in Project Dream STEM Clubs. Please rate student improvement over the course of the year.

1. Creativity
2. Innovation
3. Critical Thinking Skills
4. Problem-Solving Skills

Evaluation Plan

Evaluation Question	What is being measured? (Outcomes/ Outputs)	Indicators/ Measures	Staff	Use/ Dissemination	Timing
Research Question 1: Was there an increase in STEM participants' creativity, innovation, critical thinking, and problem-solving skills according to the teacher survey?	*21st Century Skill areas (creativity, innovation, critical thinking, and problem-solving)*	*Post-attendance STEM survey distributed through EZReports*	*Program Director, Site Supervisor, Teachers*	*Results to be annually shared with internal team and STEM Club Leaders for discussion*	*Post-survey distributed to classroom teachers each spring, results shared in the fall of the following year*
Research Question 2: Was the growth in any of the four skill areas (creativity, innovation, critical thinking, and problem-solving) greater or lesser for English-Learners or students who qualify for free or reduced lunch?	*21st Century Skill areas (creativity, innovation, critical thinking, and problem-solving) for English Learners and students that qualify for free or reduced lunch*	*Post-attendance STEM survey distributed through EZReports, subgroup data from PowerSchool*	*Program Director, Site Supervisor, Teachers*	*Results to be annually shared with internal team and STEM Club Leaders for discussion*	*Post-survey distributed to classroom teachers each spring, results shared in the fall of the following year*

Summary of Evaluation Process

Program Component	Positive Factors	Challenging Factors	Effective Activities/Services	Areas of Improvement
STEM Clubs	*Increase in 21st century skill areas (creativity, innovation, critical thinking, and problem-solving)*	*Tracking students that missed exploration or experiment weeks*	*Consistent STEM Club Leader*	*More rigorous experiments*
English Learner Participation	More increases in 21st century skill areas for English Learners than Non-English Learners	Ensuring all students participate regardless of language	Bilingual STEM Club Leader	More English Learners to attend programs
Free and Reduced Lunch Participation	Slight increase in 21st century skills for students that qualify for free and reduced lunch versus those that did not	The increases did not seem to be significant	Ensuring families with a need have all four days of programming	Serving more students that qualify for free or reduced lunch

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