BetterLesson and PBLWorks Professional Learning at LUSD

Effects on Instructional Behaviors and Learner Outcomes

Prepared for: Lindsay Unified School District Teacher and School Leader Initiative (TSL)

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Prepared by:
Chara Price, M.S., Dr. Sarojani S. Mohammed, Dr. Beth Rabbitt, and
The Learning Accelerator team
with support from Lindsay Unified School District:
Amalia Lopez and Dr. Abinwi Nchise

LINDSAY UNIFIED SCHOOL DISTRICT

The Learning Accelerator

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Executive Summary

Lindsay Unified School District (LUSD) implemented a partnership with The Learning Accelerator (TLA) and software vendor Yet Analytics to examine the relationships between a variety of learning facilitator (LUSD's preferred term for educators) and leader professional learning offerings and learner outcomes. This work is funded by a federal Teacher and School Leader (TSL) Grant.

This research brief examines learning facilitators' participation in two professional learning opportunities offered in partnership with external providers BetterLesson and PBLWorks in Grant Year 1 (2017-2018) and Grant Year 2 (2018-2019). Referred to in-district as professional learning opportunities to foster "motivating learning opportunities" for learners, these opt-in, months-long Micro-Credentials developed specific research-based instructional design skills in learning facilitators. While both professional learning opportunities shared several characteristics, one distinguishing feature was the BetterLesson program offered personalized instructional coaching across several months and utilized a coaching dashboard while the PBLWorks program offered a more uniform coaching experience over fewer months.

Shared Characteristics of the Two Professional Learning Opportunities				
External Partnership	Focus on Instructional Design	Target Educator Competencies	Personalized Coaching	Certification Option

Measured outcomes came from:

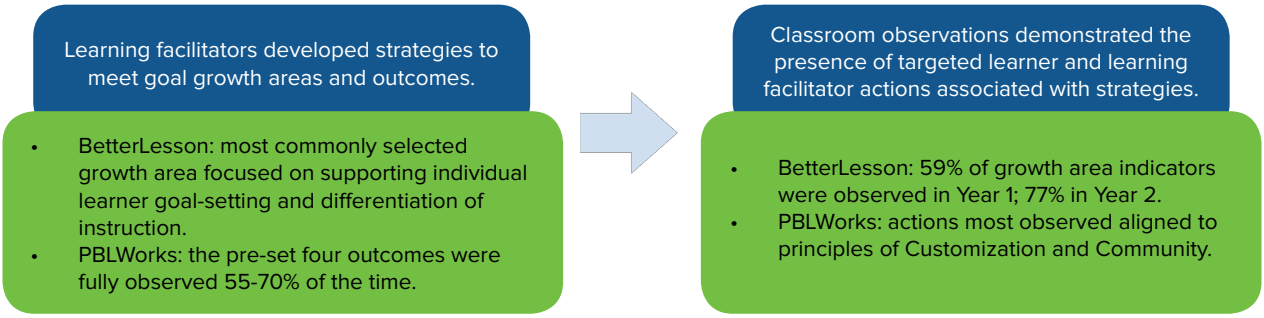
- Classroom observations of educator actions, which for BetterLesson were focused on personalized growth area indicators and for PBLWorks were the LUSD Adult Learning Curriculum Instructional Look Fors;
- Learners' progress towards their learning goals in the district's learning management system, Empower; and,
- Achievement on standardized tests.

We sought to answer three research questions about these professional learning opportunities:

1. What motivating actions did learning facilitators engage in after participating in professional learning led by BetterLesson?
2. What educator actions did learning facilitators engage in after participating in professional learning led by PBLWorks?
3. Was participation in professional learning opportunities that foster motivating learning opportunities positively related to learner outcomes?

Key Findings from Research Questions 1 and 2

Classroom observations of learning facilitators seeking certification supported the hypothesis that participation in these professional development opportunities increases the implementation of specific instructional strategies and pedagogical designs. **In both cases, classroom observations demonstrated the presence of learning facilitator and learner actions related to targeted growth area goals (BetterLesson) or implemented outcomes (PBLWorks)**. Evidence of implementation of target actions was highly variable, however.



Key Findings from Research Question 3

In content levels 1-8, learning facilitators' participation in either BetterLesson or PBLWorks was significantly associated with increased learner outcomes for some content areas at different content levels:

- The opportunity led by **BetterLesson was related to stronger math outcomes across the greatest number of content levels: 1, 2, 4, and 7**.
- **PBLWorks was related to stronger outcomes in history across five content levels: 1, 4, 5, 6, and 8**.

Further, in **content levels 1-8, participation in either professional learning opportunity was also significantly positively related to better reading growth as measured by standardized, formative reading assessments (SRI and DRA)**. It is noteworthy that this finding did not hold when SBAC was used as the reading growth outcome, with the exception of participation in BetterLesson for content levels 3-5.

In content levels 9-12, there were significant, positive relationships between participation in the BetterLesson-led professional learning opportunity and both math and English language arts, as well as participation in the PBLWorks-led opportunity and history. These positive effects were on learners' progress towards their learning goals. For PBLWorks, there was an additional positive effect of participation on content level 11 learners' SBAC Math scores.

Content areas for which there were significant differences in learners' progress towards their learning goals after learning facilitators participated in professional learning led by BetterLesson or PBLWorks by content level

Content Level 1		Content Level 2	
BetterLesson	PBLWorks	BetterLesson	PBLWorks
Content Level 3		**Content Level 4**	
BetterLesson	PBLWorks	BetterLesson	PBLWorks
Content Level 5		**Content Level 6**	
BetterLesson	PBLWorks	PBLWorks	
Content Level 7		**Content Level 8**	
BetterLesson	PBLWorks	BetterLesson	PBLWorks
Content Level 9-12			
BetterLesson		PBLWorks	

Key

History

English Language Arts

Mathematics

Science

The Takeaway

Results from the two cohorts of learning facilitators who participated in either motivating professional learning opportunity generally showed a positive relationship between participation and learners' growth or achievement in four core content areas: math, science, English language arts, and history. This positive relationship differed in strength and significance across content areas and content levels for both Micro-Credentials.

In addition, learning environment observations suggest that this increased learning is perhaps due to learning facilitators implementing the instructional designs using educator actions aligned with LUSD's Adult Learning Curriculum Instructional Look Fors. The Instructional Look For results from the PBLWorks observations mirror those from prior analyses focused on Guided Reading professional learning opportunities.

> Taken together, there is growing reason to believe that LUSD's Micro-Credential professional learning opportunities have been successful tools for translating LUSD's Instructional Look Fors from a theoretical guiding document to learning facilitator actions in authentic learning environments, and that this change in actions is related to positive learner outcomes.

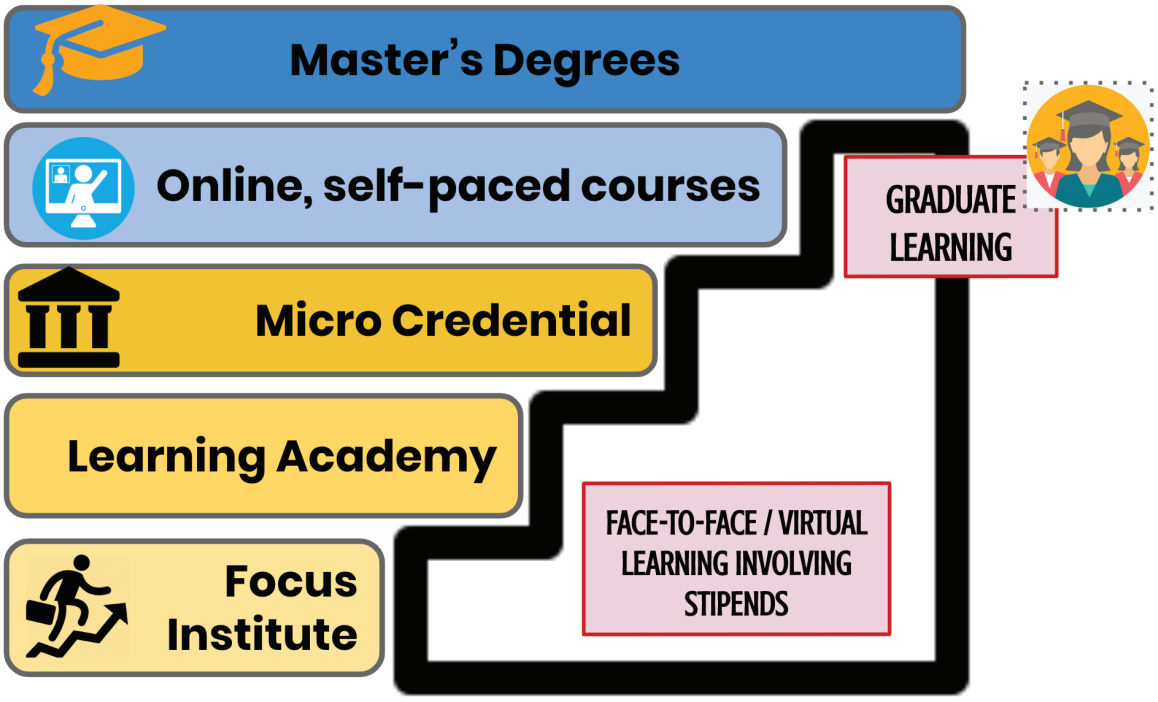
Future analyses will investigate additional LUSD Teacher and School Leader professional learning offerings, cohorts, and data, as well as deeper analyses that incorporate more of the complexity and nuance that permeates LUSD's professional learning to help illuminate where the most value lies and how LUSD's Adult Learning Curriculum principles and educator actions might be driving student learning.

Introduction

Driven by Lindsay Unified School District's (LUSD) TSL Empower Lindsay Grant, a federal Teacher and School Leader (TSL) Grant, learning facilitators are provided with a menu of professional learning opportunities. These opportunities are designed to develop the learning facilitators' and school leaders' capacity to bring to life the district's Strategic Design and the Ideal Learning Experience for each learner in LUSD, a commitment that learners have the very best learning experience every day. Professional learning opportunities are scaled to support various levels of development and personalized paths for each learning facilitator's professional growth. They range from supporting multi-year master's degree programs to providing daylong focus institutes on a specific instructional or leadership topic.

Note: Expanded URL hyperlinks are provided in Appendix B for those reading this document in printed form.

Figure 1: Types of professional learning offered by LUSD through the TSL Grant



All professional learning opportunities focus on topics directly related to LUSD's Adult Learning Curriculum, Performance-Based System, and district academic initiatives. Many are constructed and modeled after the LUSD vision of personalization, such as allowing learner voice and choice, or customized skill development. All TSL professional learning opportunities include a performance-based compensation strategy, such as a financial incentive or increased pay scale credits, and all are voluntary.

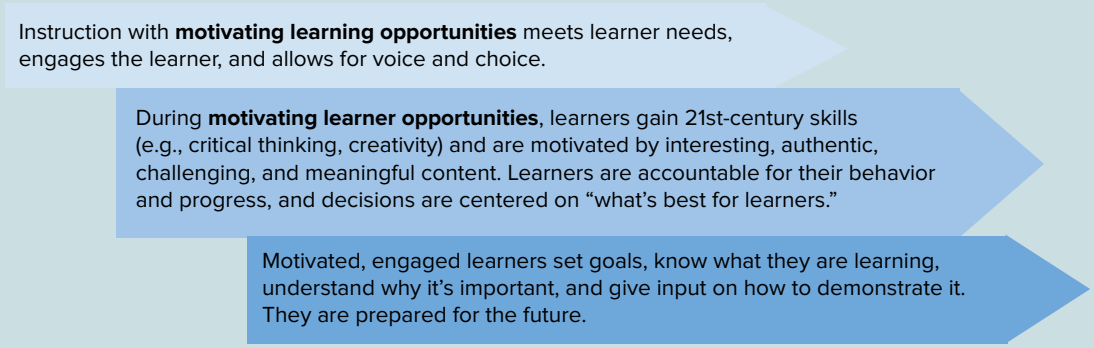
NOTE!	We use the following LUSD language throughout this report: • *Learner = student* • *Learning facilitator = teacher* • *Learning environment = classroom* • *Learning community = school*

Motivating Learning Opportunities at LUSD

This research brief examines learning facilitator behaviors and learner outcomes associated with participation in two optional LUSD professional learning opportunities offered in partnership with external providers. Both were structured as opt-in experiences for learning facilitators. These Micro-Credential programs were designed to increase educator actions hypothesized to produce "motivating learning opportunities" for learners. They were multi-month programs centered on a deep learning and implementation of instructional, research-based practices through in-person sessions, application in the learning environment, coaching and feedback, the development of a portfolio of practice, and, if certification was sought, a learning environment observation assessing targeted educator competencies. Participants were eligible, based on established criteria, to earn a certification stipend.

What are Motivating Learning Opportunities?

Per the LUSD Learning Facilitator Handbook, "Motivating learning opportunities are characterized as relevant, engaging, and future-focused. The purpose of motivational learning opportunities is to ensure learners attain 21st-century skills needed in order to succeed in the information age."



This report focuses on the 2017-18 (first year; Cohort 1) and 2018-19 (second year; Cohort 2) years of LUSD's Teacher and School Leader (TSL) grant. **Research Questions 1 and 2** examine what instructional strategies learning facilitators engaged in to meet their instructional growth goal(s). **Research Question 3** investigates if learning facilitators' participation in professional learning was related to higher learner outcomes than for those learners whose learning facilitators did not participate in either professional learning opportunity.

Together, these three research questions provide insight into what learning facilitators who participated in professional learning are doing in their learning environments as well as the potential impact of these experiences on learner outcomes.

Professional Learning Opportunities: BetterLesson and PBLWorks

Similarities and differences between these two professional learning opportunities allow us to examine if different methods for developing instructional strategies have differential impacts.

First, the two professional learning opportunities, like all of LUSD's Micro-Credentials, included in-person workshops, coaching, and, if a learning facilitator chose to pursue certification, the submission of a portfolio of practice, and the observation of a lesson implementation by external coaches. However, the programs did have a few key differences: learning facilitators enrolled in personalized coaching through BetterLesson were allowed to select one or two personalized areas of instructional growth, while PBLWorks, which aimed to increase the efficacy of project-based learning implementation, focused on pre-set instructional strategies. BetterLesson participants received more coaching sessions throughout the semester. The observation protocols also differed: learning facilitators in BetterLesson were observed with protocols personalized to their target growth areas while learning facilitators in PBLWorks were observed with a standardized protocol.

Table 1: Key characteristics of both motivating learning opportunities

Characteristic	BetterLesson	PBLWorks
Type	Micro-Credential	Micro-Credential
Coaching	7 sessions, 1:1 with the same coach, virtual	1 session, 1:1 (Cohort 1) or in a group (Cohort 2), virtual
Instructional Growth Goals	Individualized, Cohort 1 selected from generalized district-developed competencies and/or Cohort 2 selected from a predetermined list aligned to BetterLesson's Learning Domains, which were then qualitatively aligned to Instructional Looks Fors	Standardized, four predetermined target Instructional Look Fors aligned to LUSD's Adult Learning Competencies

BetterLesson

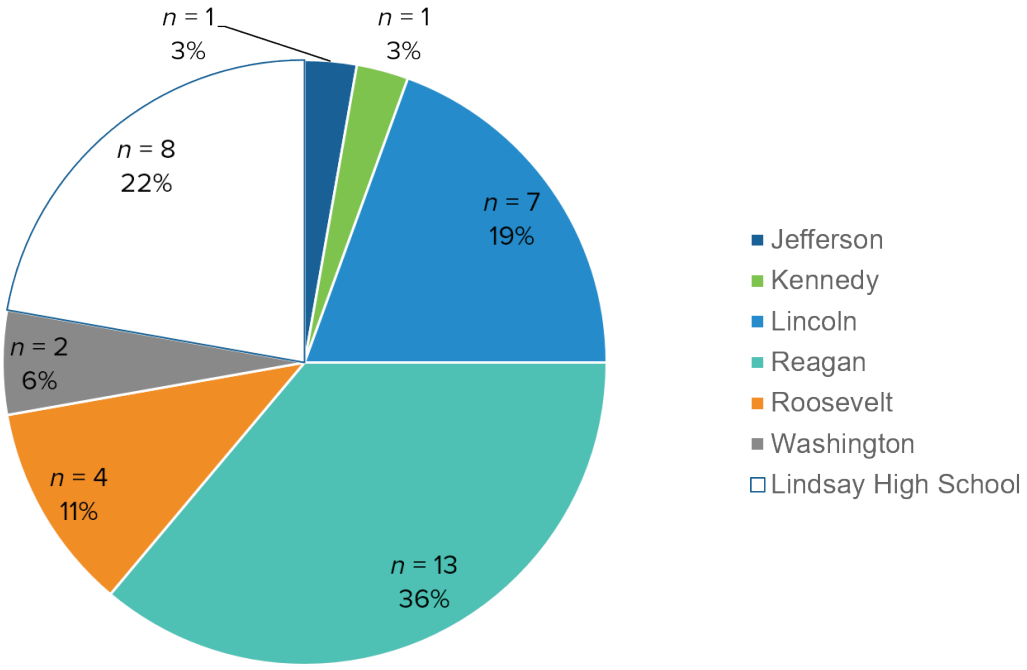
BetterLesson is a professional services organization that provides personalized teacher coaching to foster growth, risk-taking, and reflection in learners. The personalized professional learning offered by BetterLesson was a multi-month professional learning opportunity. Two cohorts of learning facilitators participated between March 2018 and March 2019, and are included in this report.

Table 2: Number of learning facilitators participating in professional learning led by BetterLesson by cohort

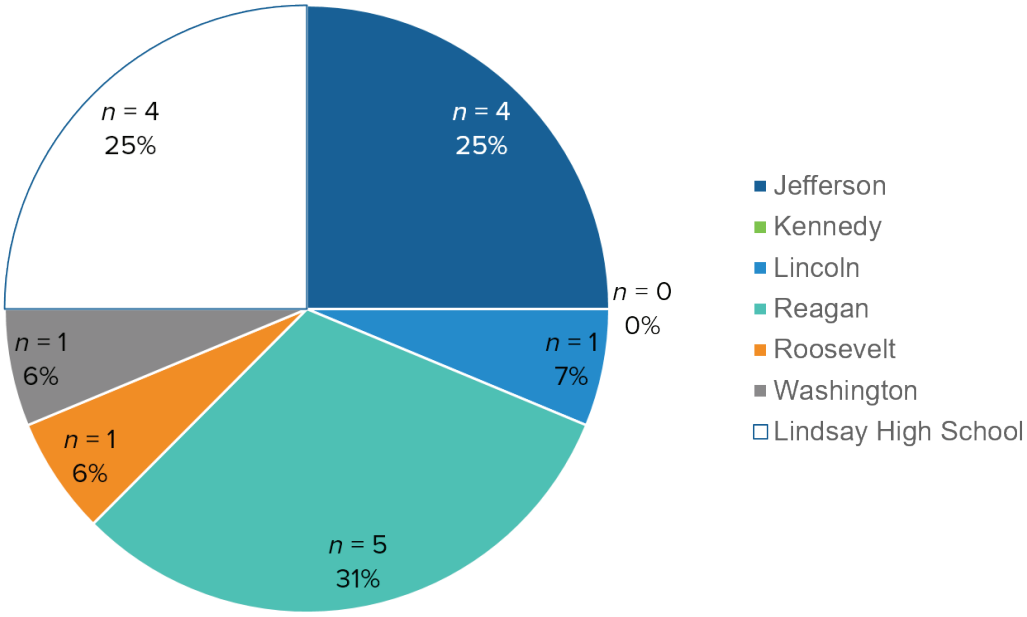
	Cohort 1 (March to July 2018)	Cohort 2 (October 2018 to March 2019)
Content Levels K-8	24	9
Content Levels 9-12	13	10

Figure 2: Participation in professional learning led by BetterLesson by cohort and learning community

Cohort 1

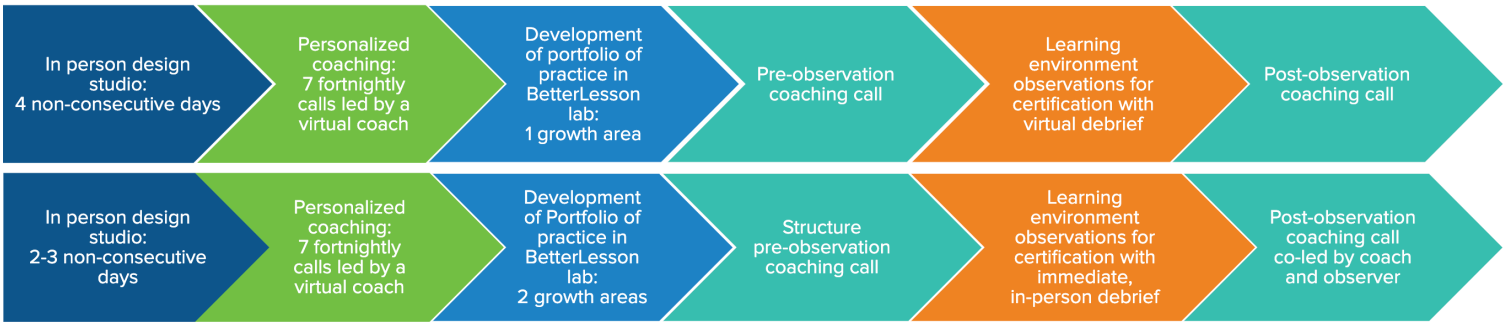


Cohort 2



Similar to other LUSD Micro-Credentials, this professional learning opportunity included portfolios and coaching. This coaching was more personalized than in other Micro-Credentials, because each learning facilitator selected individual target growth areas and focused on implementing instructional strategies aligned with their growth area. As in other Micro-Credentials, if certification was sought, an observation walkthrough was conducted to determine if learner and learning facilitator behaviors, aligned to the learning facilitator's target growth area, indicated motivating learning opportunities were occurring. This personalized professional learning opportunity took on slightly different structures in Years 1 and 2, detailed below.

Figure 3: Structure of personalized professional learning led by BetterLesson in Cohort 1 (top) and Cohort 2 (bottom)



PBLWorks

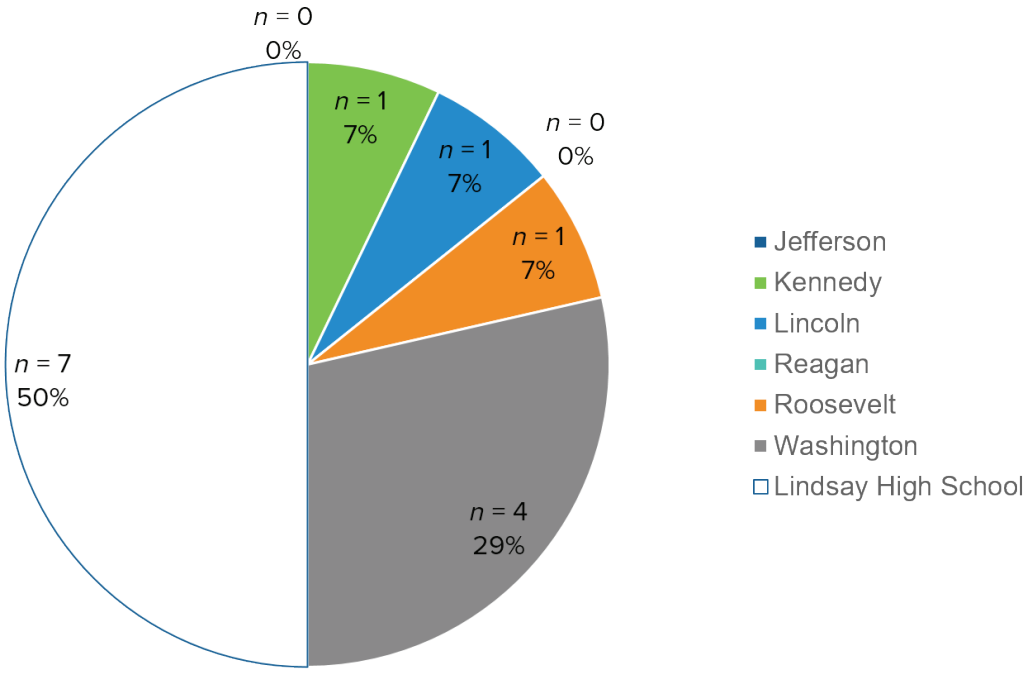
PBLWorks (formerly The Buck Institute of Education) provides professional development for Project Based Learning. The professional learning opportunity led by PBLWorks was a multi-month long experience. Cohort 1 ran from March 2018 to June 2018 and Cohort 2 ran December 2018 to March 2019.

Table 3: Number of learning facilitators participating in the PBLWorks professional learning opportunity

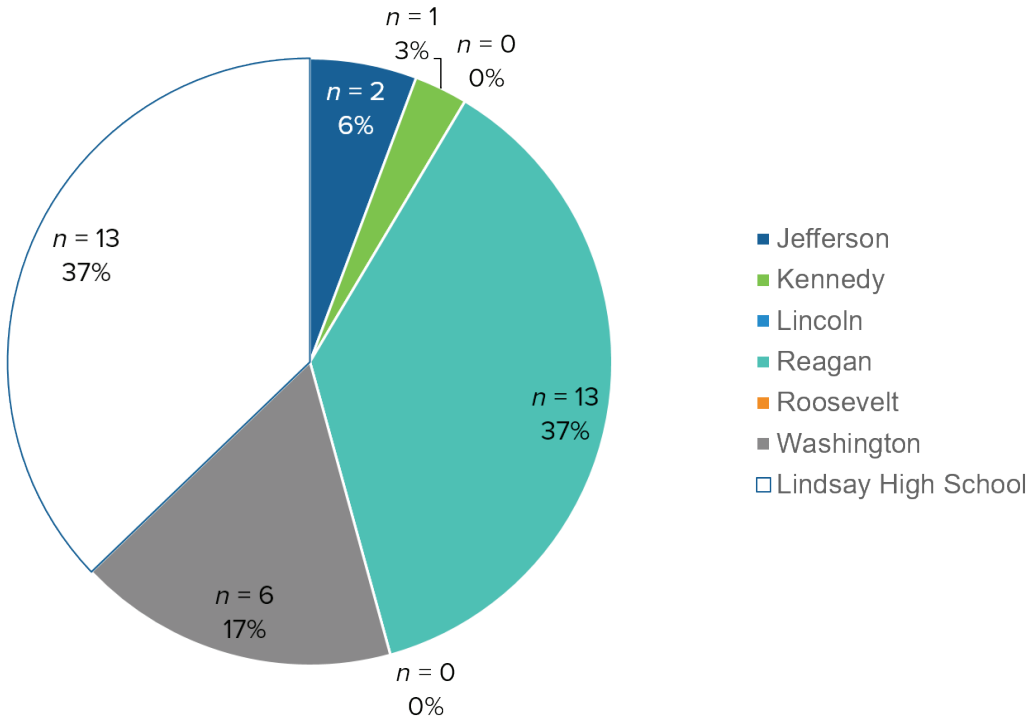
	Cohort 1 (March to June 2018)	Cohort 2 (December 2018 to March 2019)
Content Levels K-8	6	19
Content Levels 9-12	8	17

Figure 4: Participation in professional learning led by PBLWorks by cohort and learning community

Cohort 1

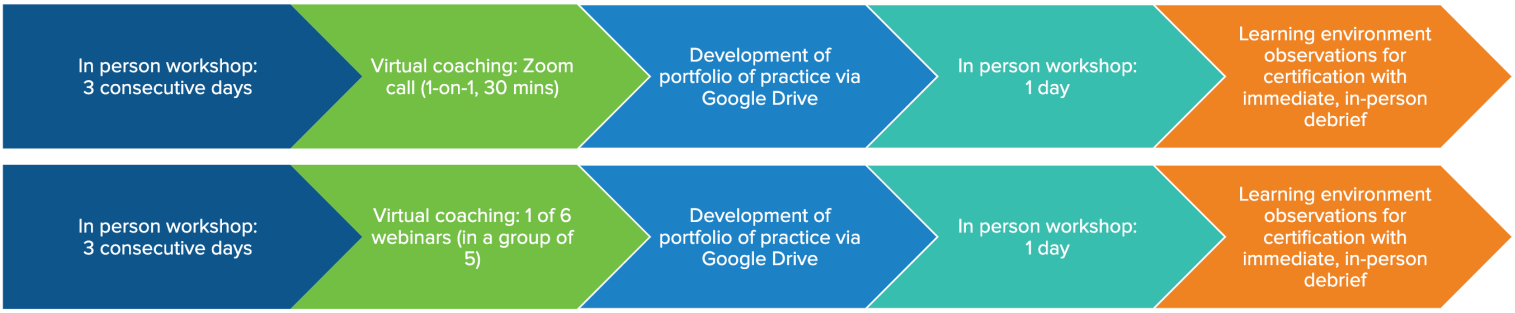


Cohort 2



In this Micro-Credential there was also the development of a portfolio of practice, coaching, and an observation of each learning facilitator attempting certification. The structure of this professional learning opportunity differed slightly between Cohort 1 and Cohort 2 due to a shift in coaching approach, which was individualized in the first but group-based in the latter. Structures are outlined below.

Figure 5: Structure of professional learning for project-based learning led by PBLWorks in Cohort 1 (top) and Cohort 2 (bottom)



Project-based learning is a content-area and content-level neutral instructional model; educators were trained to implement a coherent project-based framework across grade levels and content areas. They chose to implement and were observed across content areas, but it is possible that competency from some targeted strategies were implemented more generally as educators built skill and comfort. Given this, we investigated potential differences in implementation across content levels and content areas.

K-8 learning facilitators within LUSD teach all content areas in self-contained classrooms, so they could choose to implement in a variety of areas. In content levels K-8, 12 learning facilitators self-reported both the content area they were observed in and any additional content area(s) they implemented projects in. Of these, 8 reported implementing projects in 2 of the content areas included in this report (the one they were observed in, and an additional content area). Learning facilitators reported implementing at a similar frequency across content areas. However, the content area most frequently observed (n = 4, or 33%) was history.

In content levels 9-12, most participating learning facilitators (50%, n = 5) taught in English Language Arts, and projects were observed most frequently in that area (50%, n = 4). No projects were observed in math.

Table 4: Frequency with which projects were self-reportedly implemented and the frequency with which projects were observed in different content areas

	English Language Arts	Math	Science	History	Other
K-8 Self-Reported Implementation (*n* = 12)	22% (*n* = 5)	22% (*n* = 5)	17% (*n* = 4)	22% (*n* = 5)	17% (*n* = 4)
K-8 Observed (*n* = 12)	8% (*n* = 1)	25% (*n* = 3)	8% (*n* = 1)	34% (*n* = 4)	25% (*n* = 3)
9-12 Implemented (*n* = 12)	50% (*n* = 6)	16% (*n* = 2)	17% (*n* = 2)	17% (*n* = 2)	--
9-12 Observed (*n* = 8)	50% (*n* = 4)	0% (*n* = 0)	25% (*n* = 2)	25% (*n* = 2)	--

Research Question 1

What motivating actions did learning facilitators engage in after participating in professional learning led by BetterLesson?

Each learning facilitator who participated in personalized professional learning provided by BetterLesson selected a goal growth area (or two, in Cohort 2) targeted to support implementation of specific aligned learner-centered Instructional Look Fors. In both cohorts, learning facilitators selected growth areas from nine BetterLesson Learning Domains that were aligned with LUSD's Adult Learning Curriculum Instructional Look Fors. As part of the certification process, a BetterLesson coach completed the observation during which they used an observation protocol to note the presence of these instructional behaviors.

Since each learning facilitator chose their own growth area(s), and due to differences in the growth areas between Cohorts 1 and 2, most of the observation protocols were used for only one, or very few, learning facilitators. Thus, descriptive information and a spotlight growth area are provided in this report in lieu of a more complex analysis.

NOTE!	The BetterLesson Learning Domains and Growth Areas differed between Cohort 1 and Cohort 2 due to changes in the BetterLesson curriculum. Different terminology was used in Cohort 1 and 2. The instructional goal selected by each learning facilitator was called an Outcome in Cohort 1 and a Growth Area in Cohort 2. The classroom behaviors on the observation protocols were called Look Fors in Cohort 1 and Indicators in Cohort 2. In this report we defer to the language used in Cohort 2. Although the indicators in both cohorts are qualitatively aligned to LUSD's Adult Learning Curriculum Instructional Look Fors, the Instructional Look For educator actions were not themselves observed.

Research Question 1: Results

Of the 47 learning facilitators enrolled in BetterLesson professional learning opportunities in Cohort 1 and 2, 40 learning facilitators attempted certification (7 attempted twice), and 28 attained certification. These results come from the 40 observations for certification.

Each learning facilitator selected a growth area from a BetterLesson Learning Domain and, when implemented in the classroom, utilized actions that aligned to the LUSD Instructional Look For educator actions. **Developing skills to support individualized learning, as supported by learner goal setting and differentiation of instruction, was a key theme for the growth areas selected by most learning facilitators**. This focus is in deep alignment with LUSD's Performance Based System. In Year 1, the most selected area of growth was: "I support rigorous learning by skillfully differentiating for all learners." In Year 2, the most selected area of growth was: "I support learners to develop and reflect on personal learning goals." Table 5 below shows the goal growth areas selected by learning facilitators.

Table 5: Number of learning facilitators who selected each goal growth area by cohort

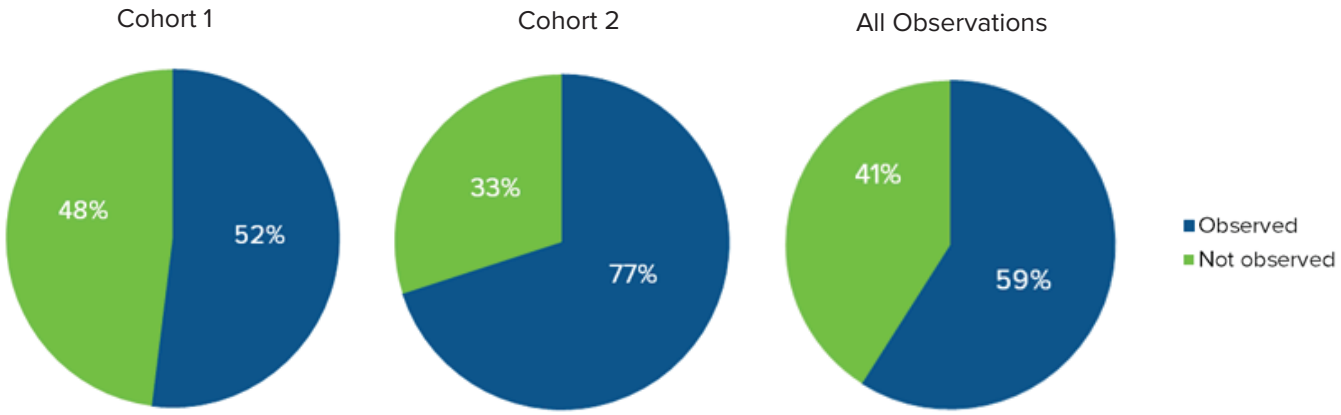
BetterLesson Learning Domain	Growth Area	Cohort 1 (*n* = 34)	Cohort 2 (*n* = 13)	% of Indicators Observed
Experiential Learning	I support learners to seek out and persevere with challenging tasks.	5	n/a	53%
Learner Agency	I support rigorous learning by skillfully differentiating for all learners.	10	n/a	48%
Data-Driven Instruction	I use formative data.	2	n/a	20%
Classroom Culture	I develop strong relationships with learners.	1	n/a	n/a
Ownership, Choice, and Voice *(in Cohort 1, this was Learner Agency)*	I support learners to develop and reflect on personal learning goals.	11	3	59%
	My learners develop and reflect on personal learning goals.	n/a	1	100%
Mastery-Based Progressions	My learners self-assess, track their progress towards mastery, and iterate based on the data.	n/a	1	0%
Project-Based and Experiential Learning	My learners present their solution to peers and adults using reasoning and evidence to defend their point of view.	n/a	1	100%
Social-Emotional Learning and Habits of Success	My learners set and work towards short- and long-term personal and academic goals.	n/a	1	67%
Student-Centered Assessment and Feedback	I use formative and summative data to provide timely, personalized, and actionable feedback to learners.	n/a	1	75%
	i use learner data to plan and implement differentiated instruction.	n/a	1	67%
	My students self-assess and reflect on their progress to goal.	n/a	1	n/a
	I consistently solicit learner feedback to improve instruction and monitor the classroom curriculum.	n/a	2	83%

**Note*: Five learning facilitators in Cohort 1 and one learning facilitator in Cohort 2 had incomplete information for their growth area and therefore are not included in the numbers above.

We wanted to understand how often learning facilitators engaged in behaviors that aligned to their growth area during the lesson implementation. For each growth area, there was an observation protocol that identified 3-6 observable indicators of that growth area. When the observer saw an indicator, they highlighted it and provided notes on the observation protocol. The far right column in Table 5 details the percentage of indicators observed for each growth area.

At least half of the targeted growth indicators for each growth area were demonstrated by the learning facilitator or learner during the learning environment observation.

Figure 6: Percentage of educator actions observed in Cohorts 1, 2, and overall



Three possible reasons for the increase between Cohort 1 and Cohort 2 are: 1) seven of the learning facilitators attempted certification a second time in Cohort 2, 2) changes to the BetterLesson program goal structure resulted in better adoption, 3) overall the second group were better at implementing the targeted instructional strategies in the professional learning led by BetterLesson.

Spotlight Growth Area

While the personalized nature of BetterLesson did not allow for many overlapping observation protocols, both Cohorts 1 and 2 had a larger number of learning facilitators who selected the growth area: "I support learners to develop and reflect on personal learning goals." Further, the protocols for this growth area had three (out of four) similar indicators across the two years. This allowed us to determine the frequency with which indicators under this growth area were observed across different learning environments.

In this observation protocol, all indicators were learner actions; no learning facilitator actions were targeted for observation. Learners' tasks, creating goals and measuring progress, were observed more than learner inquiry (e.g., articulating what they are learning or reflecting on growth). More learner observations were observed in the cohort that had a higher certification rate. As certification is in part dependent on these observations, they suggest that learner behaviors can be used as a component of successful implementation of BetterLesson instructional strategies. **In other words, we are able to measure the rate of specific motivating actions learners engage in when learning facilitators implement BetterLesson instructional strategies.**

Table 6: Frequency of observed learner actions in the targeted growth area: *"I support learners to develop and reflect on personal learning goals"*

Indicator	Cohort 1 (*n* = 9)*	Cohort 2 (*n* = 3)
Learners articulate what they're learning about and why it is relevant.	55%	n/a
Learners create personalized learning goals.	55%	100%
Learners use data to measure progress towards goals.	67%	100%
Learners reflect on strengths and areas of growth to develop new learning objectives.	44%	100%
Number of LFs who certified	4 (44%)	3 (100%)

**Note*: This *n* differs from above because some learning facilitators attempted certification twice.

Research Question 2

What educator actions did learning facilitators engage in after participating in professional learning led by PBLWorks?

The educator actions targeted for professional learning led by PBLWorks were aligned with the project-based learning Gold Standard Project Design framework, which was then aligned to priority LUSD Instructional Look Fors. Similar to other LUSD Micro-Credentials, each learning facilitator could pursue certification through a learning environment observation.

The observation assessed if project-based learning occurred by the presence of four predetermined actions, labeled "outcomes." The behaviors that indicate the presence of an outcome were aligned to Instructional Look Fors and observable educator actions from LUSD's Adult Learning Curriculum. There was some overlap across the four outcomes; together they measured Instructional Look Fors from all six principles of LUSD's Adult Learning Curriculum: customization, purposefulness, relevance, rigor, collaboration, and community.

In both Cohort 1 and Cohort 2, the observer took notes when observing aligned educator actions. In Cohort 2, a Google form was used to translate observer notes into actionable data where each outcome and action had an observed or not observed score. This report includes data from only the Google Forms (Cohort 2 only, *n* = 20). In this Cohort, 75% of the learning facilitators who attempted certification attained it.

Research Question 2: Results

In general, each outcome was fully observed with moderate frequency (55-70%) across learning environment observations.

Table 7: Frequency of fully observed outcomes during learning environment observations for Cohort 2 of PBLWorks

Outcome	% Fully Observed
1. Evidence of a standards-based project design, including key success skills, a driving question, and major learner product. *Measured by 5 educator actions demonstrating: customization, purposefulness, relevance, rigor.*	70%
2. Learning facilitator employs literacy-rich formative and summative assessment practices that are aligned to and appropriate for desired learner outcomes and products. *Measured by 3 educator actions demonstrating: customization, purposefulness.*	55%
3. Learning facilitator uses differentiation to scaffold and deliver content, how learners express their learning, and how learners experience learning (or are engaged in learning). *Measured by 5 educator actions demonstrating: customization.*	55%
4. Learning facilitator fosters an inclusive and equitable classroom culture that is responsive to learners' identities and needs. *Measured by 6 educator actions demonstrating: collaboration, community.*	70%

The learning environment observations demonstrated that learning facilitators engage in a variety of Instructional Look For educator actions when implementing a project. **The principle of community had the highest frequency of Instructional Look Fors observed, followed by customization**. This suggests that the educator actions implemented through projects also support the principles of LUSD's Adult Learning Curriculum, and in particular, community and customization. Table 8 details the percentage of observed Instructional Look Fors across all observations.

NOTE!	Appendix A further breaks these down into the individual Look For educator actions and observed frequencies.

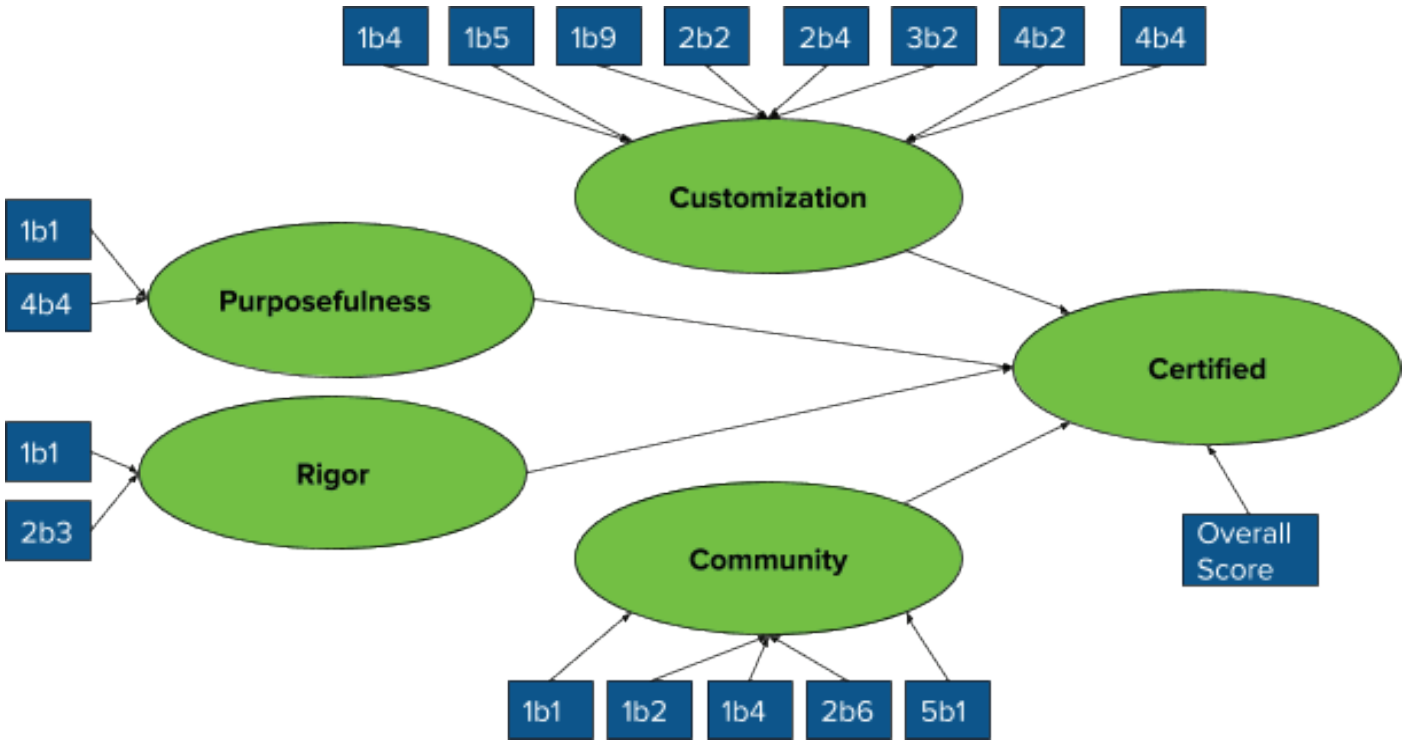
Table 8: Frequency of observed Instructional Look Fors during learning environment observations for Cohort 2 of PBLWorks

Instructional Look Fors and Student Actions	% Observed (*n* = 20)
Collaboration (1 educator action across 1 outcome)	
Promotive Interaction	65%
Community (5 educator actions across 1 outcome)	
Belonging (3 educator actions)	40-80%
Joy	40%
Upholding Norms	90%
Customization (8 educator actions across 3 outcomes)	
Appropriate Challenge (3 educator actions)	35-80%
Additional Supports for Students with IEPs or Defined Language Needs (e.g., ELLs)	75%
Demonstrations of Learning (2 educator actions)	50-65%
Student Driven (2 educator actions)	25-60%
Purposefulness (2 educator actions across 2 outcomes)	
Academic Urgency	65%
Goal Orientation	25%
Rigor (2 educator actions across 2 outcomes)	
Cognitive Lift	65%
Higher-Order Thinking	30%
Relevance (1 educator action across 1 outcome)	
Real-World Authenticity	70%

Research Question 2: Additional Considerations

Our initial goal in completing this analysis was to run a confirmatory factor analysis: a statistical model that would measure how well the educator actions (observed variables) are related to their aligned Instructional Look Fors (unobservable/latent variables). Such a model could not achieve adequate model fit, likely due to low sample size coupled with the fact that the observations were scored as observed or not observed (dichotomous data). A confirmatory factor analysis would shed light on the underlying structure of LUSD's Adult Learning Curriculum, and will be attempted again in a subsequent report.

Figure 7: Structural model for the relationship between Adult Learning Curriculum Principles and Instructional Look Fors



Research Question 3

Was participation in professional learning opportunities that foster motivating learning opportunities positively related to learner outcomes?

The instructional strategies that were the focus of both professional learning opportunities were not content-area nor content-level specific. In content levels K-8, learning facilitators taught, and potentially implemented new actions, across all content areas. In content levels 9-12, learning facilitators were credentialed to teach, and sought learning environment observations in, only one content area. Due to this difference, content levels K-8 are analyzed separately from content levels 9-12 for the remainder of this report.

To examine if learners demonstrated more learning growth than their peers when they had a learning facilitator who had participated in these professional learning opportunities, we examined learners' progress towards completing their individualized learning targets (LUSD's Common Core Standards-based measures of growth in math, science, English language arts, and social studies through LUSD's Learning Management System (LMS), Empower). We also investigated learners' annual growth on standardized academic benchmarks for reading/English language arts, including the Diagnostic Reading Assessment (DRA) and Scholastic Reading Index (SRI). We also investigated learners' academic achievement in English language arts and math as measured by California's Smarter Balanced Assessment Consortium (SBAC) assessment.

Research Question 3: Results

To answer research question 3, a series of ANOVAs were conducted separately for each of the two professional learning opportunities, for each content area and standardized measure combination. All learning facilitators who participated in BetterLesson and/or PBLWorks were included regardless of if they attempted certification or not. Because the targeted educator goals were personalized for learning facilitators in the BetterLesson context but standardized for PBLWorks (which was aimed at coherent delivery of a bundle of strategies in the form of project-based learning, rather than a series of instructional strategies that can be used independently of each other) these results were analyzed separately.

Results: Learners' Progress Towards Target Goal in the Four Core Content Areas

One series of ANOVAs was conducted using LUSD's measure of progress towards target learning goals as the learner outcome measure, which is only used in content levels 1-8. This measure is simply the percentage of mastery goals (or target learning goals) that a learner has met at any given time during the year. For this analysis, we used the difference between a learner's progress towards their learning goals in each content area at two time points during the school year, corresponding with before the professional learning opportunity started and after the observations were complete. We also aligned the time points with key LMS data updates to ensure that all available data were included.

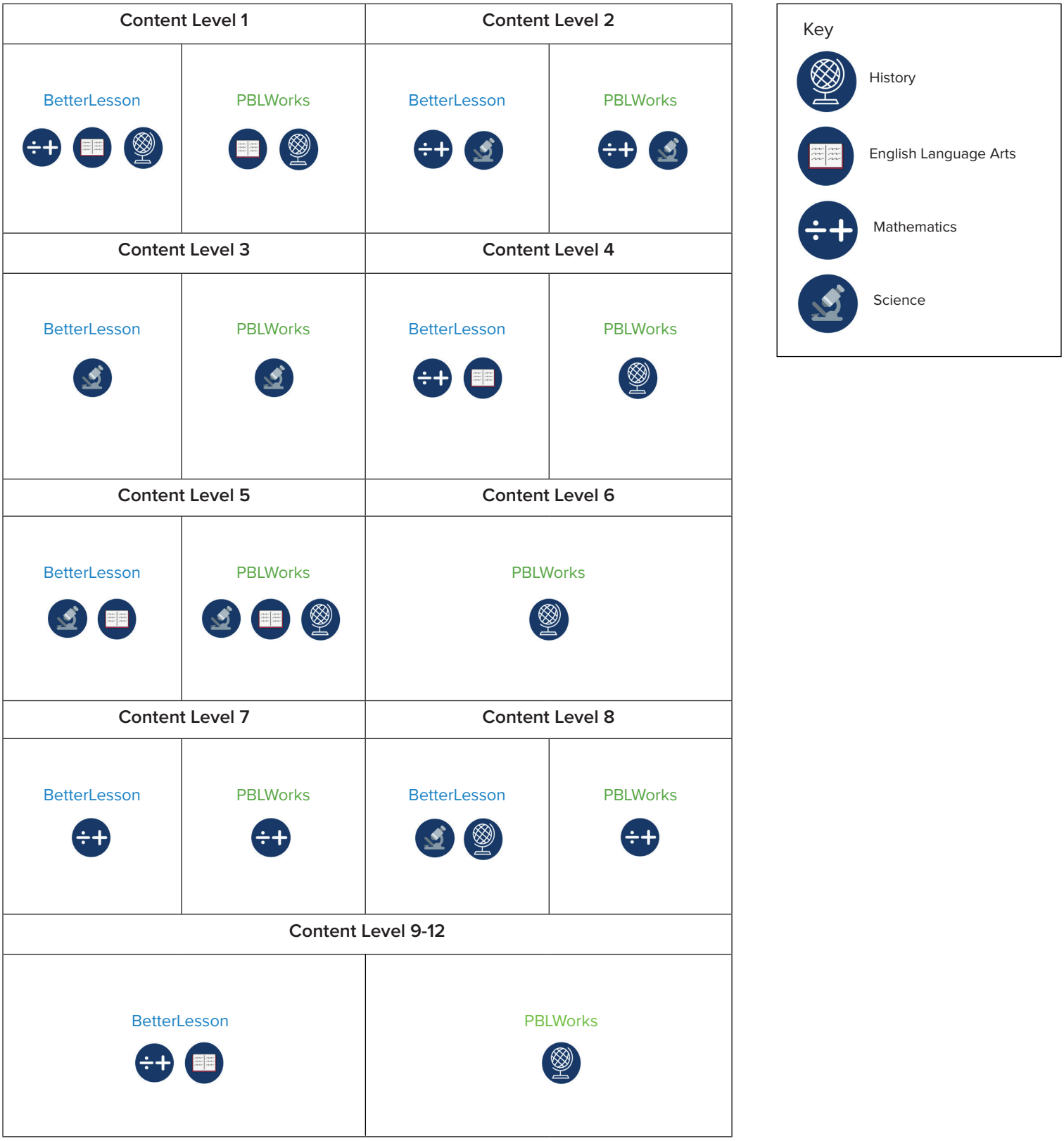
In content levels 1-8, there was a significant interaction between participation in the professional learning opportunity and content level for both professional learning opportunities, for all four content areas. Because of this interaction, we conducted ANOVAs within each of content levels 1-8. All of the significant results from these ANOVAs, along with the results from the ANOVAs that included content levels 9-12 are below. **In content levels 9-12, there were significant positive relationships between participation in the BetterLesson-led professional learning opportunity and both math and English language arts, as well as participation in the PBLWorks-led opportunity and history.**

Table 9: Content levels for which there were significant differences in learning after learning facilitators participated in professional learning led by BetterLesson or PBLWorks

Content Level	BetterLesson	PBLWorks
1 (n = 318)	Math: p = .025 English Language Arts: p = .001 History: p = .001	English Language Arts: p = .029 History: p = .040
2 (n = 271)	Math: p = .001 Science: p = .001	Math: p = .001 Science: p = .001
3 (n = 330)	Science: p = .001	Science: p = .020
4 (n = 293)	Math: p = .001 English Language Arts: p = .001	History: p = .033
5 (n = 296)	Science: p = .001 English Language Arts: p = .031	Science: p = .001 English Language Arts: p = .001 History: p = .022
6 (n = 344)		History: p = .011
7 (n = 315)	Math: p = .001	Math: p = .001
8 (n = 240)	Science: p = .001 History: p = .007	Math: p = .001
9-12	Math (n = 918): p <.001 English language arts (n = 769): p = .001	History (n = 769): p = .001

**Note*: *n*s reported here are the number of learners for whom we had target outcome data. Therefore, while there were a different number of learners in the BetterLesson group than the PBLWorks group, the overall number of learners within each content level was the same for both professional learning opportunities (i.e., learners whose learning facilitators did not participate in the analyzed professional learning opportunity were included in the comparison group).

Figure 8: Content areas for which there were significant differences in learners' progress towards their learning goals after learning facilitators participated in professional learning led by BetterLesson or PBLWorks by content level



Results: SRI, DRA, and SBAC

To take a deeper look at the relationship between participation in either professional learning opportunity and learning English language arts for content levels 1-8, we also conducted a series of ANOVAs using the Scholastic Reading Inventory (SRI), Diagnostic Reading Assessments (DRA), and California's Smarter Balanced Assessment Consortium (SBAC) English language arts.

In content levels 9-12, we also conducted a ANOVAs for SBAC English language arts and math. SBAC is only administered at the end of content level 11 in high school, so these outcomes were used as single, point in time learner outcomes (i.e., these outcomes were not growth scores and did not control for prior English nor math performance in any way).

The DRA measures reading ability in five key areas: phonemic awareness, phonics, vocabulary development, reading fluency, and reading comprehension. The SRI is a criterion-referenced test of reading comprehension given in four benchmark windows a year for learners in content levels 3-12.

Growth scores from August 2018 to March 2019 were calculated for the SRI and DRA. Then, for one series of ANOVAs, we compared growth scores for learners who had a learning facilitator in the BetterLesson-delivered Micro-Credential program to the growth scores of learners who did not have a learning facilitator in either Micro-Credential, using an ANOVA design. To examine impact on SBAC annual growth, we ran an ANCOVA, controlling for the previous years' score. These processes were repeated for participation in the professional learning opportunity delivered by PBLWorks.

For content levels 1-8, having a learning facilitator who has participated in either of the professional learning opportunities focused on motivating learning opportunities was significantly related to higher reading growth on the SRI and DRA. In content levels 6-8, differences in reading growth measured by the SBAC were significantly lower for participation in either professional learning opportunity. In content levels 3-5, there was no significant difference of participation in either professional learning opportunity.

Table 10: Results of an ANOVA by BetterLesson-delivered Micro-Credential for DRA and SRI growth scores

	DRA Growth (1-2)	SRI Growth (3-5)	SRI Growth (6-8)
ANOVA	$F(1,567) = 1.74$, $p = .188$	$F(1, 893) = 25.64$, $p = .001$	$F(1, 939) = 18.46$, $p = .001$
Partial Eta Squared	ηp2 = .003	ηp2 = .028	ηp2 = .019
BetterLesson Participation	8.12 ($n = 97$)	142 ($n = 597$)	149 ($n = 221$)
No BetterLesson Participation	7.35 ($n = 472$)	187 ($n = 298$)	110 ($n = 720$)

Table 11: Results of an ANOVA by PBLWorks-delivered Micro-Credential for DRA and SRI growth scores

	DRA Growth (1-2)	SRI Growth (3-5)	SRI Growth (6-8)
ANOVA	$F(1, 567) = 9.58$, $p = .002$	$F(1, 548) = 58.4$, $p = .001$	$F(1, 896) = 6.66$, $p = .010$
Partial Eta Squared	ηp2 = .017	ηp2 = .096	ηp2 = .007
PBLWorks Participation	9.4 ($n = 47$)	211 ($n = 125$)	132 ($n = 311$)
No PBLWorks Participation	7.28 ($n = 522$)	124 ($n = 426$)	113 ($n = 588$)

The SBAC is a state level summative assessment designed to provide more meaningful information into a student's academic skills. There is an assessment of English language arts, and one of math, both of which are computer adaptive assessments. SBAC English language arts measures balanced literacy by providing content claims and assessment targets for reading, writing, speaking, and listening. This report focuses on the learners' end-of-year Literacy Scale Score. SBAC math is given at the end of content level 11 and asks students to solve multi-step, real-world problems in mathematics.

In content level 11, there was a significant, positive relationship between learning facilitators' participation in PBLWorks and their learners' SBAC math scores at the end of the year. For this same content level, the relationship between participation and SBAC English language arts scores was not significant for either professional learning opportunity.

Table 12: Results of an ANOVA by BetterLesson-delivered Micro-Credential for SBAC growth scores

	SBAC English Growth (3-5)	SBAC English Growth (6-8)	2018 SBAC Math Score (11)	2018 SBAC English Score (11)
ANOVA	$F(1, 530) = 2.07$, $p = .151$	$F(1, 871) = 9.91$, $p = .002$	n/a*	$F(1,248) = 1.99$, $p = 0.16$
Partial Eta Squared	ηp2 = .004	ηp2 = .011		ηp2 = .008
BetterLesson Participation	78.3 ($n = 177$)	41.8 ($n = 208$)		2611 ($n = 134$)
No BetterLesson Participation	53 (n = 356)	110 ($n = 666$)		2591 ($n = 250$)

**Note*: No comparison groups were possible as there were fewer than 10 learners with a learning facilitator who participated and had SBAC data.

Table 13: Results of an ANOVA by PBLWorks-delivered Micro-Credential for SBAC English and Math growth scores

	SBAC English Growth (3-5)	SBAC English Growth (6-8)	2018 SBAC Math Score (11)	2018 SBAC English Score (11)
ANOVA	$F(1, 530) = 3.14$, $p = .077$	$F(1, 871) = 6.95$, $p = .009$	$F(1, 226) = 12.61$, $p < .001$	$F(1,248) = 1.59$, $p = 0.21$
Partial Eta Squared	ηp2 = .006	ηp2 = .008	ηp2 = .053	ηp2 = .006
PBLWorks Participation	47.2 ($n = 120$)	46.5 ($n = 300$)	2547 ($n = 145$)	2592 ($n = 130$)
No PBLWorks Participation	65.5 ($n = 413$)	118 ($n = 574$)	2495 ($n = 83$)	2610 ($n = 120$)

Discussion

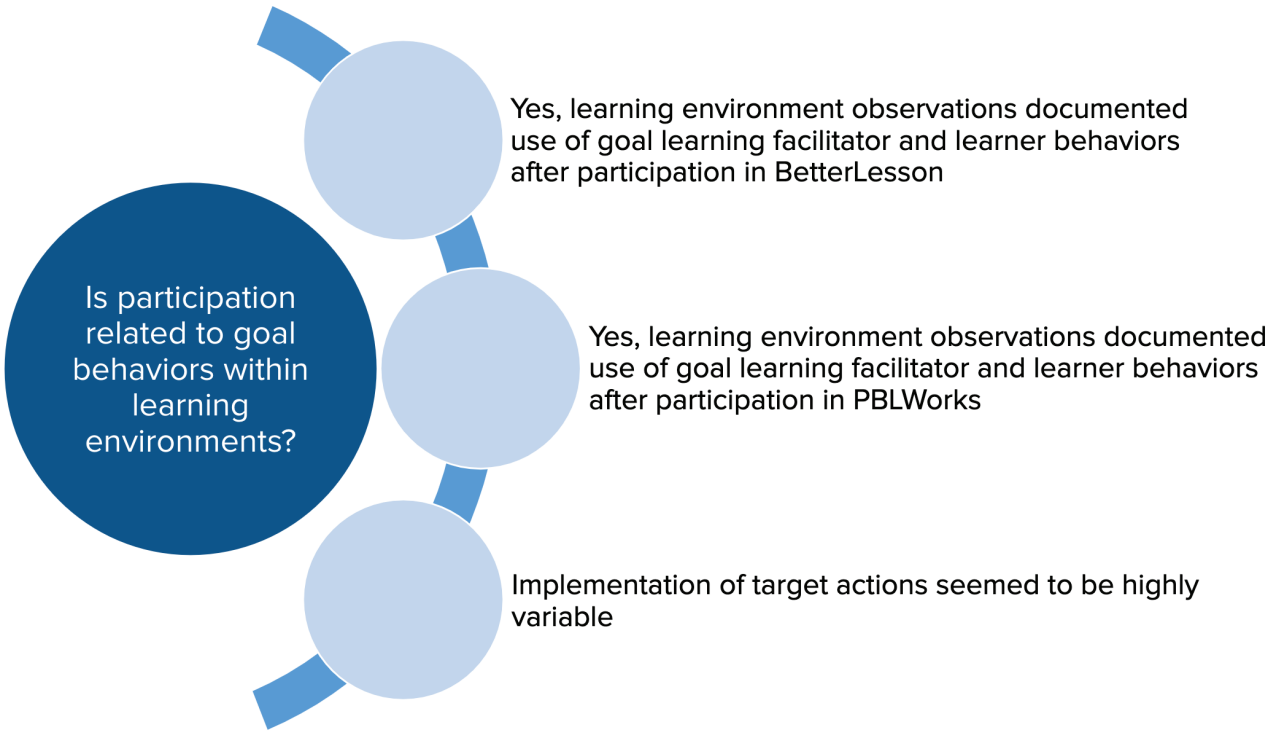
It should be noted that, as with all LUSD professional learning opportunities, learning facilitators self-selected into these two Micro-Credentials, so these analyses cannot uncover causal links between learning facilitators' participation, learner outcomes, nor use of Instructional Look For educator actions within learning environments. However, the trends and differences noted in this report do illustrate relationships between participation, learning facilitator and learner actions, and learner outcomes.

Overall, these results suggest that these motivating learning opportunities might increase learning facilitators' use of relevant Instructional Look Fors in learning environments and contribute to improvements in learners' math achievement in the case of BetterLesson, or history achievement in the case of PBLWorks.

This study set out to clarify the answers to two key questions:

1. Is participation in either of these two motivating learning opportunities positively related to goal behaviors in learning environments?

This set of questions focused on learning facilitator actions that occurred in learning environments after participation in one of the two Micro-Credentials, and the extent to which these observed actions were aligned with learning facilitators' growth goals and LUSD's Adult Learning Curriculum Instructional Look Fors.



However, implementation of the Instructional Look Fors and aligned educator actions varied in frequency across learning environment observations, and likely also across content areas and content levels.

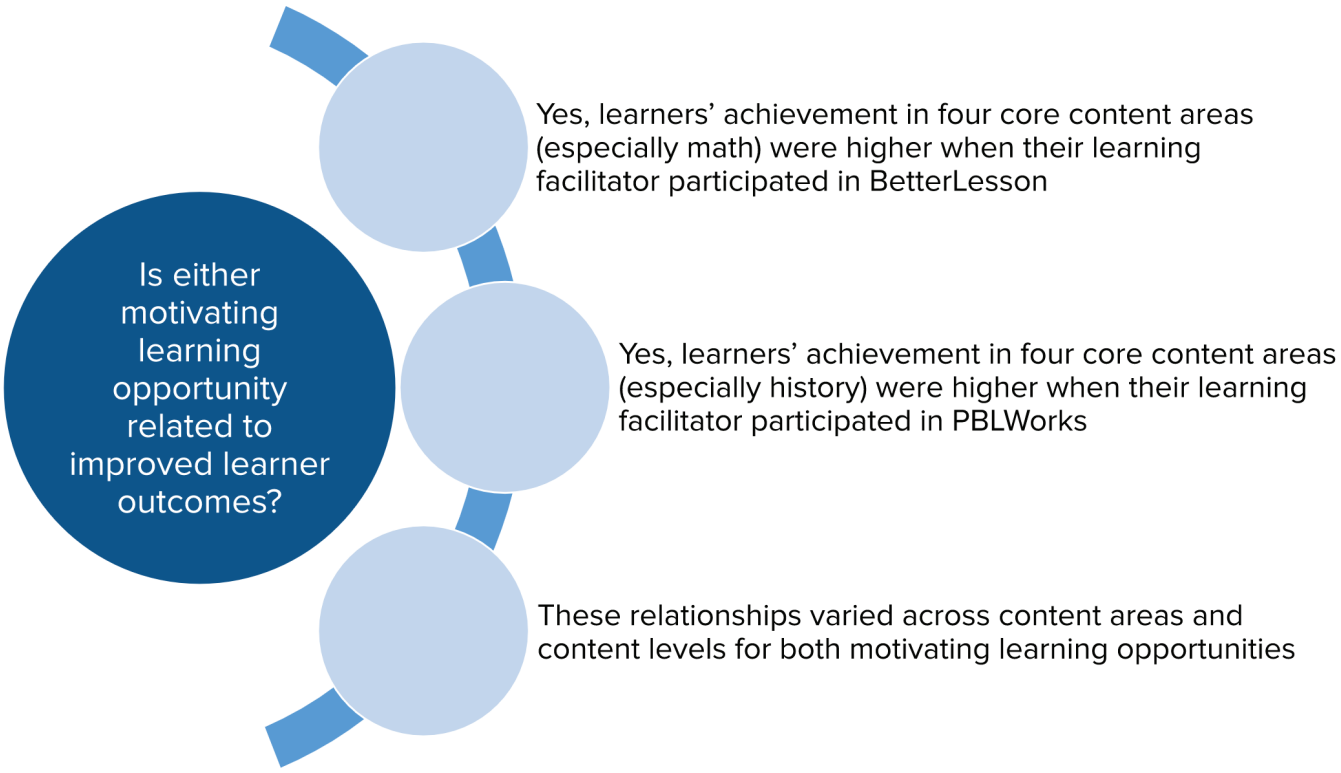
Recommendations: What We Still Need to Understand

In order to answer more nuanced questions about the Adult Learning Curriculum generally, and the Instructional Look For educator actions specifically, we highly recommend:

- Future observation protocols be focused specifically on LUSD's Instructional Look For educator actions themselves (as opposed to learning facilitator actions that are qualitatively aligned with these).
- Observations be conducted for all learning facilitators, including those who do not participate in professional learning opportunities or seek certification.
- All observation data be captured electronically during the observation to reduce potential for data loss and/or entry errors.

2. Is participation in either of these two motivating learning opportunities positively related to learner outcomes?

This set of questions focused on the relationship of either motivating learning opportunity to learner achievement outcomes.



It is possible that these analyses have inadequately accounted for learners who had multiple “doses” of motivating learning opportunities due to having learning facilitators who participated in both (or in fact, any other) professional learning opportunities. Future reports will benefit from a more detailed understanding of the professional learning opportunities that learners benefit from through their learning facilitators.

Recommendations: What We Still Need to Understand

As LUSD continues to implement professional learning opportunities, it becomes more important to clearly understand which learners have learning facilitators who participated in multiple opportunities. Thus, we recommend:

- Continuing to document participation, timelines, and certification for all learning facilitators in all LUSD professional learning opportunities.
- Continuing to document the specific content areas and content levels in which learning environment observations are conducted, and in addition, asking all learning facilitators to self-report the content areas (and content levels, when applicable) in which they have implemented the Instructional Look For educator actions that they focused on for each professional learning opportunity they participated in.

Appendix A: Expanded Table 8

Table 1: Expanded Table 8 identifying learning facilitator actions in relationship to LUSD's Instructional Look Fors

Adult Learning Curriculum Principles and Instructional Look For Educator Actions	% Observed (*n* = 20)
Principle: Collaboration (1 educator action across 1 outcome)	
Instructional Look For: Promotive Interaction Integrating protocols and tools that guide collaborative processes such as explaining and justifying reasoning to one another, providing peer feedback, and forming consensus from multiple perspectives	65%
Principle: Community (5 educator actions across 1 outcome)	
Instructional Look For: Belonging (3 educator actions)	60%
Ensuring avenues for students to seek support, share ideas with others, and respond freely to one another	80%
Providing opportunities for students to experience success or showcase strengths	60%
Developing formal and/or informal opportunities for students to understand and empathize with perspectives and backgrounds of others around them, particularly when perspectives differ	40%
Instructional Look For: Joy Empowering students to create	40%
Instructional Look For: Upholding Norms Maintaining a physical space that has a clean and orderly arrangement and helpful visual anchors to communicate community values, vision, and norms	90%
Principle: Customization (8 educator actions across 3 outcomes)	
Instructional Look For: Appropriate Challenge (3 educator actions)	53%
Incorporating opportunities for small group instruction and individual conferencing	80%
Reducing group size and/or creating mixed ability collaborative learning groups to support student processing, when appropriate	45%
Based on students' readiness levels, provide them with the minimum amount of educator guidance necessary to efficiently execute the learning tasks	35%
Instructional Look For: Additional Supports for Students with IEPs or Defined Language Needs (e.g., ELLs) Look out for and identify students who may have particular learning needs	75%
Instructional Look For: Demonstrations of Learning (2 educator actions)	55%
Offering a manageable set of options for demonstrating mastery of learning outcomes that appeal to varying student preferences and learning modalities	50%
Using planned and spontaneous checks for understanding to monitor student progress	65%
Instructional Look For: Student Driven (2 educator actions)	43%
Presenting students with meaningful and appropriate choices regarding the order, challenge, and content (when applicable) of learning activities	60%

Table 1 (continued): Expanded Table 8 identifying learning facilitator actions in relationship to LUSD's Instructional Look Fors

Adult Learning Curriculum Principles and Instructional Look For Educator Actions	% Observed (*n* = 20)
Establishing routines, procedures, and resources (such as task cards) so that students can drive their learning, know what to do when they need feedback, and can assess when to complete a task or engage in collaborative support	25%
Principle: Purposefulness (2 educator actions across 2 outcomes)	
Instructional Look For: Academic Urgency Using each moment to further progress toward learning objectives	65%
Instructional Look For: Goal Orientation Building student understanding of criteria for success through scoring rubrics or exemplars	25%
Principle: Rigor (2 educator actions across 2 outcomes)	
Instructional Look For: Cognitive Lift Employing inquiry-based and investigative learning that is driven by student questions	65%
Instructional Look For: Higher-Order Thinking Providing multiple sources of information that vary in type (e.g., visual, written, audio)	30%
Principle: Relevance (1 educator action across 1 outcome)	
Instructional Look For: Real-world Authenticity Contextualizing the content or skills in a way that demonstrates applicability to real-world problems and situations or connects to students' communities	70%

Appendix B: Embedded Links

Strategic Design:
http://lindsayunified.cyberschool.com/view/11918.pdf

Ideal Learning Experience:
https://www.lindsay.k12.ca.us/District/Department/427-Curriculum-and-Instruction/18971-Untitled.html

BetterLesson:
https://betterlesson.com

Project Based Learning:
https://www.pblworks.org

Nine BetterLesson Learning Domains:
https://betterlesson.com/browse/learning-domains

LUSD's Instructional Look Fors:
https://cdn.summitlearning.org/assets/marketing/Instructional_Look_Fors.pdf

Gold Standard Project Design Framework:
https://www.pblworks.org/what-is-pbl/gold-standard-project-design

DRA:
http://assets.pearsonschool.com/asset_mgr/current/201316/ReaBro121705DRA2_lo.pdf

SRI:
http://teacher.scholastic.com/products/product_info/pdf/SRI_Research%20Summary_Revised.pdf

SBAC:
https://www.smarterbalanced.org/about

Literacy Scale Score:
https://www.smarterbalanced.org/assessments/scores

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The Learning Accelerator