Improving Practice Together

A Partnership to Adapt, Implement and Study a Professional Learning Model and Build District Capacity to Improve Science Instruction and Student Understanding

Emily Weiss from: The Lawrence Hall of Science, University of California, Berkeley

In partnership with: Santa Clara Unified School District; Stanford Graduate School of Education

NSF DRL # 1720894, #1720930

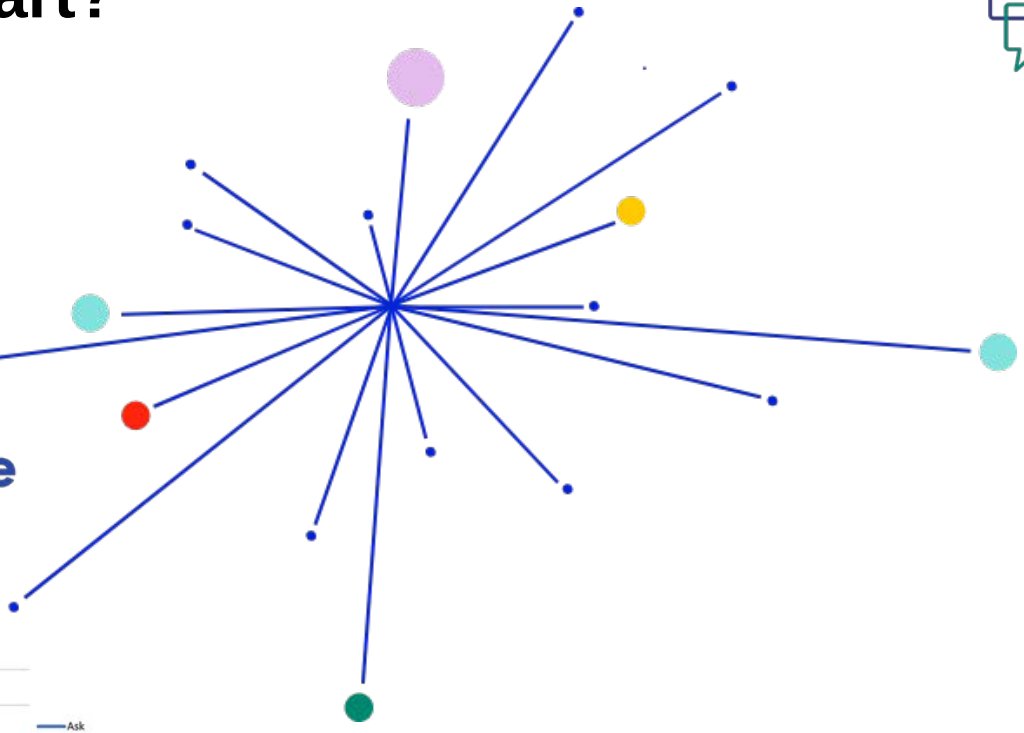
Where did we start?

Improving Practice Together

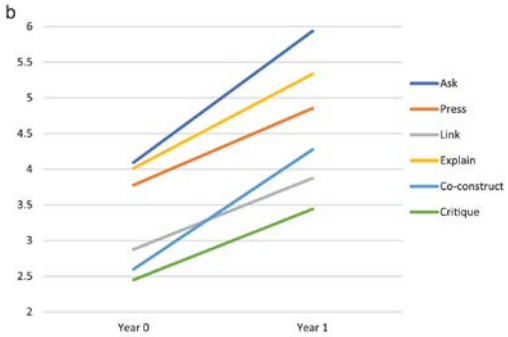
Practicum Academy to Improve Science Education
PRACTISE
Lawrence Hall of Science & Stanford Graduate School of Education

Stanford GRADUATE SCHOOL OF EDUCATION

The Lawrence Hall of Science



But…



Teachers improved their facilitation skills, and students improved their discourse skills

Hire or DIY?

Improving Practice Together

Hiring external professional learning providers to lead intensive PL programs is costly. We (The Lawrence & Stanford) wondered…

What would it look like to support a district to build its own capacity to implement an effective model of professional learning using teacher leaders, and guided by district needs and priorities?

Where did we start?

Improving Practice Together

BaySci

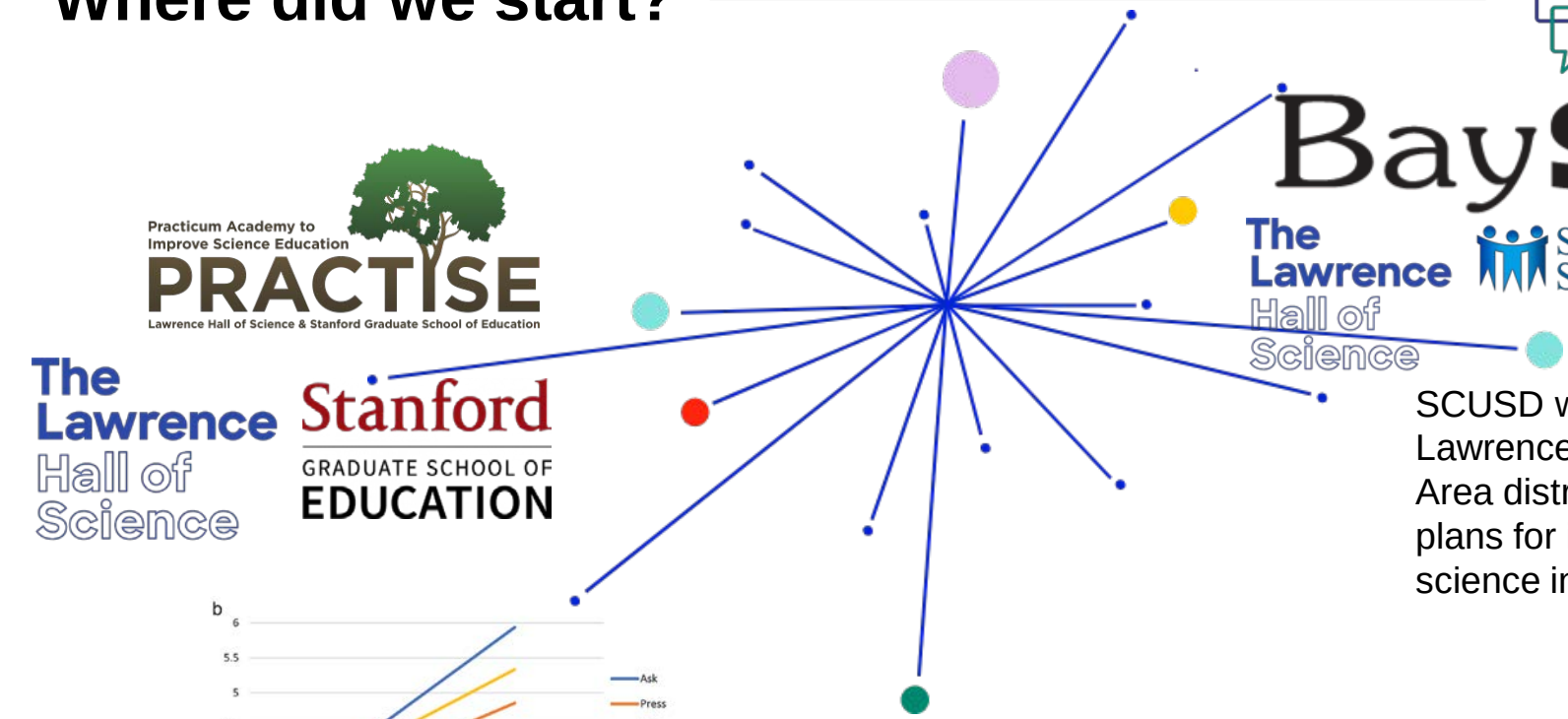
Practicum Academy to Improve Science Education
PRACTISE
Lawrence Hall of Science & Stanford Graduate School of Education

The Lawrence Hall of Science

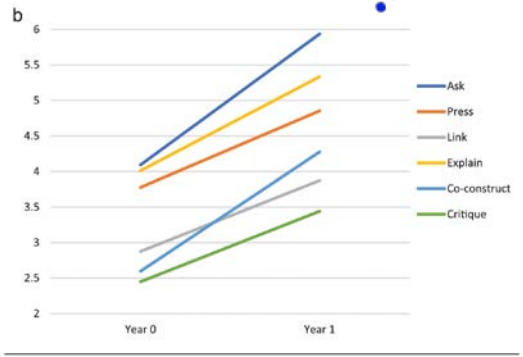
Santa Clara Unified School District

The Lawrence Hall of Science

Stanford GRADUATE SCHOOL OF EDUCATION



SCUSD worked with the Lawrence and several Bay Area districts to develop plans for improvement in science instruction



Teachers improved their facilitation skills, and students improved their discourse skills

A brief video

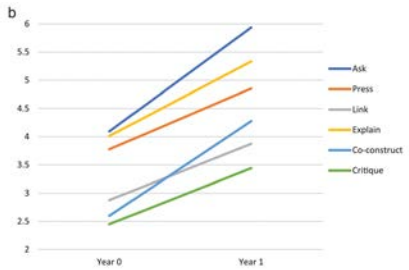
Improving Practice Together

IPT Theory of Change

Improving Practice Together

Practicum Academy to Improve Science Education
PRACTISE
Lawrence Hall of Science & Stanford Graduate School of Education

Adapt PL model to district context	PL for Teacher Leaders at district level	TLs implement adapted PL program	Shifts in teacher practice (non-TLs)	Improved competency in students
Collaborative design of intervention within partnership.	*Building capacity to implement model locally as an adapted PL program.*	*TLs supporting ongoing PL for district teachers.*	*Teachers facilitating student science practices (NGSS).*	*Students engaging in science practices (NGSS).*



A Process of Co-construction

Improving Practice Together

Designed, implemented, studied, and revised teacher leadership capacity building experiences in ways that were responsive to shifting district needs and priorities

Created tools, conducted research and evaluation to provide real-time formative feedback and summative feedback; Identified research questions and created and utilized protocols that addressed the research needs associated with an iterative approach

Research & Evaluation Team

The Lawrence Hall of Science, University of California, Berkeley

Stanford Graduate School of Education

Identified and implemented appropriate tools and methods for supporting specific teacher leadership roles

External Professional Learning Team

The Lawrence Hall of Science, University of California, Berkeley

Identified needs and potential roles for teacher leaders as district priorities and structures shifted

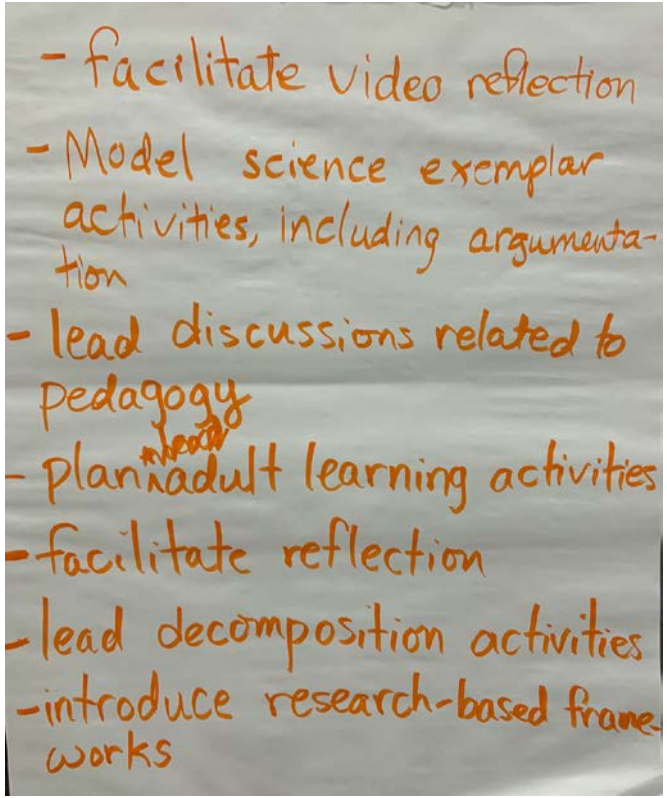
School District

Santa Clara Unified School District

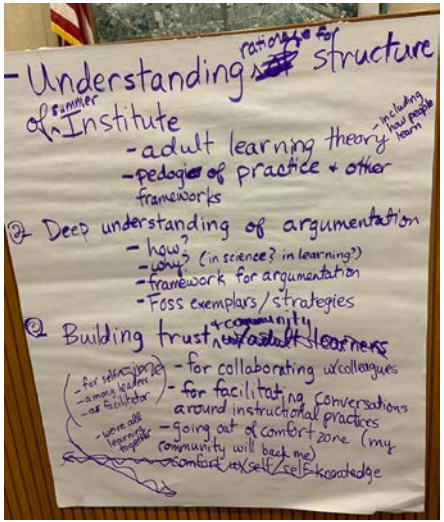
Skills to Results

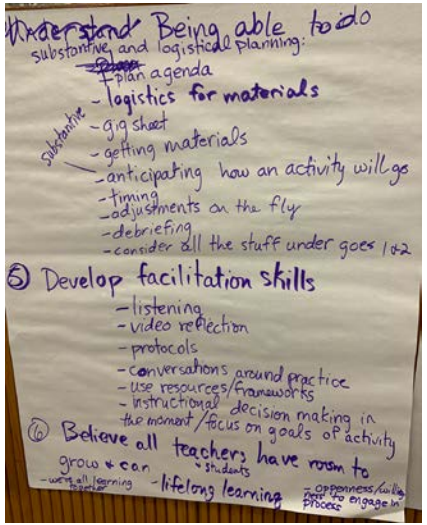
Improving Practice Together

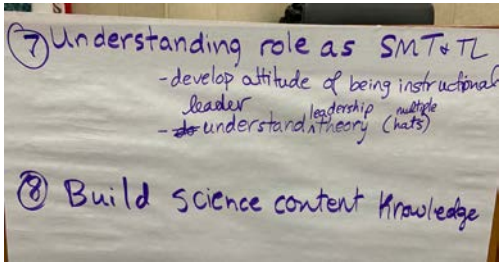
Skills required of teacher leaders



Resulting goals of teacher leadership PL







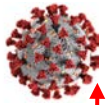
Teacher Leadership Development Framework

Improving Practice Together

IPT Project Flowchart

Improving Practice Together

New SCUSD Leadership



VISION2035

Phase 1: Initial Adaptation & Development

PRACTISE

Phase 2: Initial Adaptation & Implementation

Phase 3: Collaborative Adaptation & Implementation

Phase 4: Collaborative Adaptation to **changes**

Phase 5: Collaborative Adaptation & Implementation

AY 2017-18
Adapt the PL model and co-design PL activities

Iterative cycles of adaptation of the PL program by Design Team informed by formative feedback from Research & Evaluation Team

Summer 2018
Summer Institute for TLs

AY 2018-19
Follow-up sessions for TLs

Summer 2019
Leadership Development Inst. (for TLs)
Summer Institute (for Cohort 2, by TLs and PL leaders)

AY 2019-20
Follow-up sessions (for Cohort 2, by TLs and PL leaders)

Summer 2020
CANCELED ~~Summer Institute (for Cohort 3, by TLs)~~
NEW Leadership Dev. Inst. (for TLs) to adapt to changes

AY 2020-21
NEW Follow-up sessions (for TLs)

Summer 2021
To be determined

AY 2021-22 (post-project)
To be determined

Iteration Over Time

Improving Practice Together

Original Research Questions

RQ1: Adaptation and Development: 1a) What modifications and adaptations to the PRACTISE PL model and resources are required for implementation by a school district? 1b) What tools and resources are needed to prepare and support TLs to implement the PL program independently?

RQ2: Implementation: 2a) How is the adapted PL program implemented by TLs in the Summer Institute and follow-up sessions during the year? 2b) What role do the PRACTISE activities and resources, and district contextual features play in TLs' implementation of the program with district teachers?

RQ3: *Outcomes:* 3a) How does the adapted PL program impact classroom discourse practices? 3b) What is the impact of teachers' participation in the PL program on their students' competence with scientific argumentation from evidence?

Modified Research Questions

RQ1: Adaptation and Development

1a) What modifications and adaptations to the PRACTISE PL model and resources are required for implementation by a school district?

1b) How does The Lawrence adapt activities, tools, resources and supports in order to prepare teacher leaders to implement the PL program during the COVID-19 induced shelter-in-place in the third year of the project?

RQ2: Implementation of the evolving PL program

2a) How has the adapted PL program evolved over time?

2b) What role do the activities, tools, resources, and supports to prepare teacher leaders play in the implementation of the program each year? How does this change over time?

RQ3: Outcomes of PL and Leadership Development for teacher thinking and practice

3a) How do classroom discourse practices of TLs and teachers change over time? How are these changes related to their participation in the PL program?

3b) How do TLs' and teachers' conceptions of how to teach science change over time? How are these changes related to their participation in the PL program?

RQ4: Partnership

4a) How does the partnership negotiate goals and roles, and how do partners balance priorities and commitments over time?

4b) How does the design-based approach/research-practice partnership support change in teachers' and teacher leaders' practices around argumentation and discourse?

Tools and Processes

Improving Practice Together

Supporting and Maintaining the Partnership

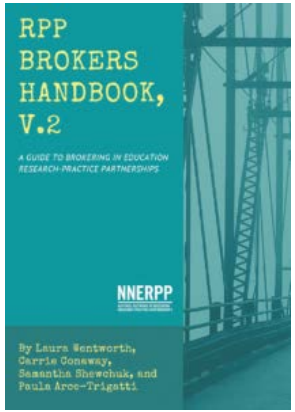
- A commitment to the value and importance of the work.

Tools and Processes

Improving Practice Together

Supporting and Maintaining the Partnership

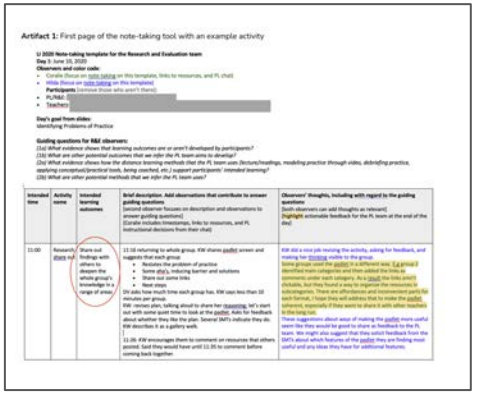
- A commitment to the value and importance of the work.
- Good communication between all partners
    - Group interviews on the successes and opportunities for growth in terms of collaboration and communication



The Online Note-taking Tool was designed to document professional learning activities and identify potential next steps, with the intent of providing timely, actionable feedback to facilitators.

Tools and Processes

Improving Practice Together



Artifact 1: First page of the note-taking tool with an example activity

U 2020 Note-taking template for the Research and Evaluation team
Day 3: June 10, 2020
Observers and color code:
- Coralie (focus on note-taking on this template, links to resources, and PL chat)
- Hilda (focus on note-taking on this template)

Participants [remove those who aren't there]:
- PL/M&E: [redacted]
- Teachers: [redacted]

Day's goal from slides:
Identifying Problems of Practice

Guiding questions for R&E observers:
(1a) What evidence shows that learning outcomes are or aren't developed by participants?
(1b) What are other potential outcomes that we infer the PL team aims to develop?
(2a) What evidence shows how the distance learning methods that the PL team uses (lecture/readings, modeling practice through video, debriefing practice, assigning conceptual/practical tools, being coached, etc.) support participants' intended learning?
(2b) What are other potential methods that we infer the PL team uses?

Intended time	Activity name	Intended learning outcomes	Brief description. Add observations that contribute to answer guiding questions [second observer focuses on description and observations to answer guiding questions] [Coralie includes timestamps, links to resources, and PL instructional decisions from their chat]	Observers' thoughts, including with regard to the guiding questions [both observers can add thoughts as relevant] [highlight actionable feedback for the PL team at the end of the day]
11:00	Research share out	Share out findings with others to deepen the whole group's knowledge in a range of areas	11:16 returning to whole group. KW shares padlet screen and suggests that each group • Revisits the problem of practice • Some else's, inducing barrier and solutions • Share out some links • Next steps DV asks how much time each group has. KW says less than 10 minutes per group. KW: revises plan, talking aloud to share her reasoning, let's start out with some quiet time to look at the padlet. Asks for feedback about whether they like the plan. Several SMTs indicate they do. KW describes it as a gallery walk. 11:20: KW encourages them to comment on resources that others posted. Said they would have until 11:35 to comment before coming back together.	KW did a nice job revising the activity, asking for feedback, and making her thinking visible to the group. Some groups used the padlet in a different way. [e.g group 2 identified main categories and then added the links as comments under each category. As a result the links aren't clickable, but they found a way to organize the resources to subcategories. There are affordances and inconvenient parts for each format, I hope they will address that to make the padlet coherent, especially if they want to share it with other teachers in the long run]. These suggestions about ways of making the padlet more useful seem like they would be good to share as feedback to the PL team. We might also suggest that they solicit feedback from the SMTs about which features of the padlet they are finding most useful and any ideas they have for additional features.

1. Identify each PL activity's intended learning outcome

9:53 DV gives prompt for first dyad - "During shelter in place, what have you missed the most?"

10:00 DV gives listening debrief questions.

10:00 JK contributes that it was hard to do with two people. You want to share your own related experiences. SB says that she at least wanted to agree. KW adds in the chat that she was using body language. JZ contributes that you want to empathize and share experiences. DV asks what it was like to talk without being interrupted. AB contributes that this works well for screen interactions, since cues for turn taking could be different. Easier over a screen than face to face. TM shares that he thinks that context requires speaking one at a time. AM shares that it's hard not to use body language. DV adds that people need to show that they are listening - anything that helps the speaker unload. JS is having a hard time to see blank faces, the students do not give a lot of feedback. DV does not react to that and moves on. DV comments that sometimes there is a need to share (did she say this was in work the SMTs will do with other teachers? It was quick and I missed it - she mentioned that it applies to adults). They did not clarify what the different levels are (prep to support other teachers and prep to support their students).

[Teachers share problems on the chat. [redacted] is helping troubleshooting.]

10:18 Diana debriefs the second dyad, again referencing their roles with adults. "As you step into leadership roles, it's a nice tool to have in your back pocket in case things get a little bit dicey."

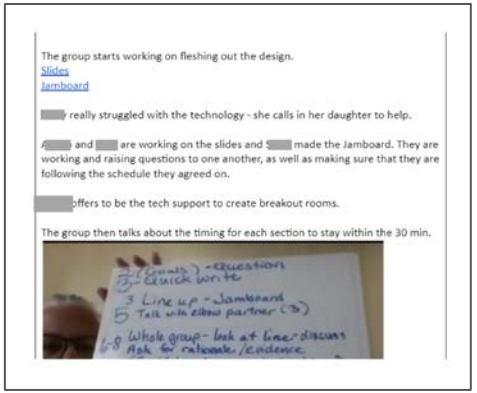
MANY participants share in this debrief. Despite the fact that everyone is saying that contextual cues are challenging online, they are taking turns and responding to each other very effectively and quickly.

It might be helpful for teachers to understand how the ways we are working in the institute do (or do not) apply to their work with teachers and/or students in different settings. For example, when might we want to use this kind of talk structure. (She did a little bit of this in the end.)

I feel that there really is not that much time to share out and deepen the teachers' thoughts during share outs.

I notice that they are a little behind time, so that might be why they are shortening share outs. Over and over (not just on this project), I've seen how you just can't do as many activities online - everything takes longer. The team may want to readjust to use less activities and allow more time for debrief.

3. Quickly summarize feedback to PL facilitators during their daily debrief



The group starts working on fleshing out the design.
Slides
Jamboard

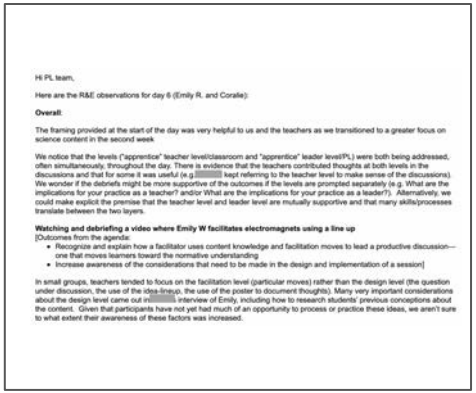
[redacted]r really struggled with the technology - she calls in her daughter to help.

A[redacted] and [redacted] are working on the slides and [redacted] made the Jamboard. They are working and raising questions to one another, as well as making sure that they are following the schedule they agreed on.

[redacted]offers to be the tech support to create breakout rooms.

The group then talks about the timing for each section to stay within the 30 min.

2. Collect data and thoughts related to the PL outcome in the same document



Hi PL team,

Here are the R&E observations for day 6 (Emily R. and Coralie):

Overall

The framing provided at the start of the day was very helpful to us and the teachers as we transitioned to a greater focus on science content in the second week

We notice that the levels ("apprentice" teacher level/classroom and "apprentice" leader level/PL) were both being addressed, often simultaneously, throughout the day. There is evidence that the teachers contributed thoughts at both levels in the discussions and that for some it was useful (e.g. [redacted] kept referring to the teacher level to make sense of the discussions). We wonder if the debriefs might be more supportive of the outcomes if the levels are prompted separately (e.g. What are the implications for your practice as a teacher? and/or What are the implications for your practice as a leader?). Alternatively, we could make explicit the premise that the teacher level and leader level are mutually supportive and that many skills/processes translate between the two layers.

Watching and debriefing a video where Emily W facilitates electromagnets using a line up
[Outcomes from the agenda:
- Recognize and explain how a facilitator uses content knowledge and facilitation moves to lead a productive discussion—one that moves learners toward the normative understanding
- Increase awareness of the considerations that need to be made in the design and implementation of a session]

In small groups, teachers tended to focus on the facilitation level (particular moves) rather than the design level (the question under discussion, the use of the idea-line-up, the use of the poster to document thoughts). Many very important considerations about the design level came out in [redacted] interview of Emily, including how to research students' previous conceptions about the content. Given that participants have not yet had much of an opportunity to process or practice these ideas, we aren't sure to what extent their awareness of these factors was increased.

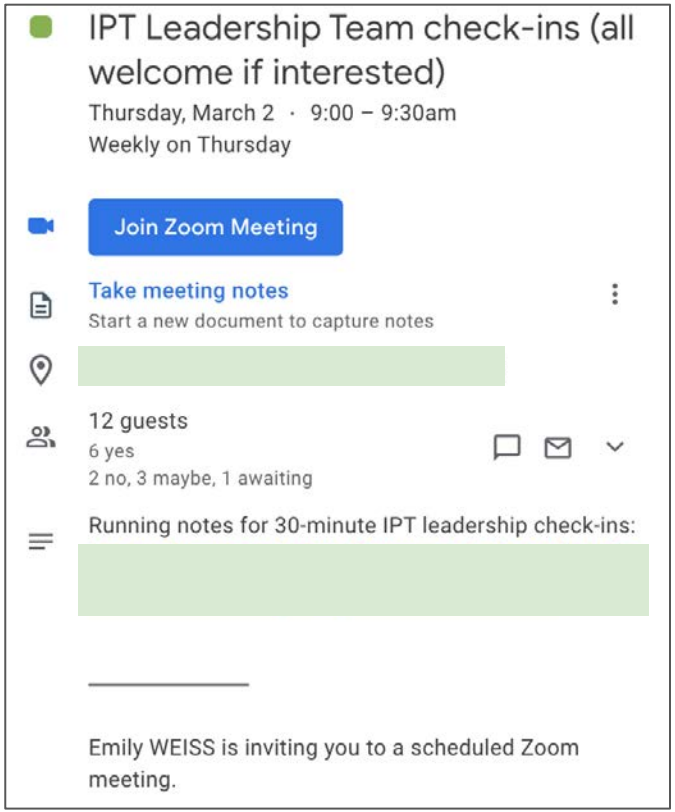
4. Brief email summary from R&E to PL team

Tools and Processes

Improving Practice Together

Supporting and Maintaining the Partnership

- A commitment to the value and importance of the work.
- Good communication between all partners
    - Group interviews on the successes and opportunities for growth in terms of collaboration and communication
- An infrastructure for ongoing partner meetings



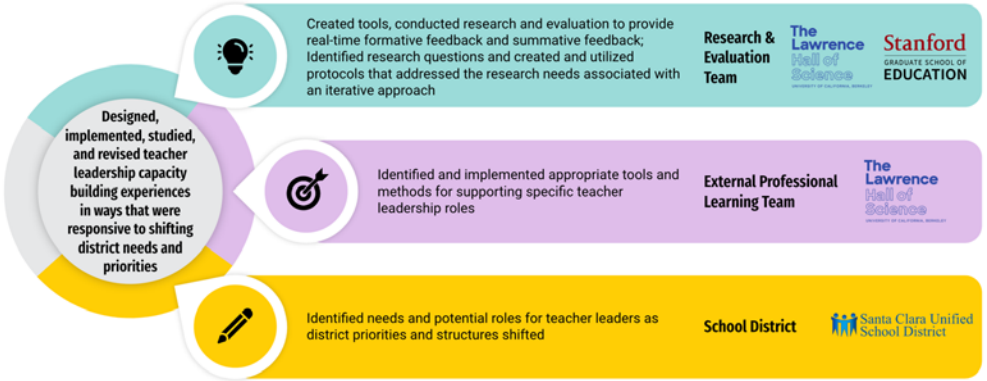
Tools and Processes

Improving Practice Together

Supporting and Maintaining the Partnership

- A commitment to the value and importance of the work.
- Good communication between all partners
    - Group interviews on the successes and opportunities for growth in terms of collaboration and communication
- An infrastructure for ongoing partner meetings
- Liaison(s) whose role is to communicate within and across all teams (boundary crosser)

Stanford GRADUATE SCHOOL OF EDUCATION



Santa Clara Unified School District

Improving Practice Together

Learnings about Partnerships

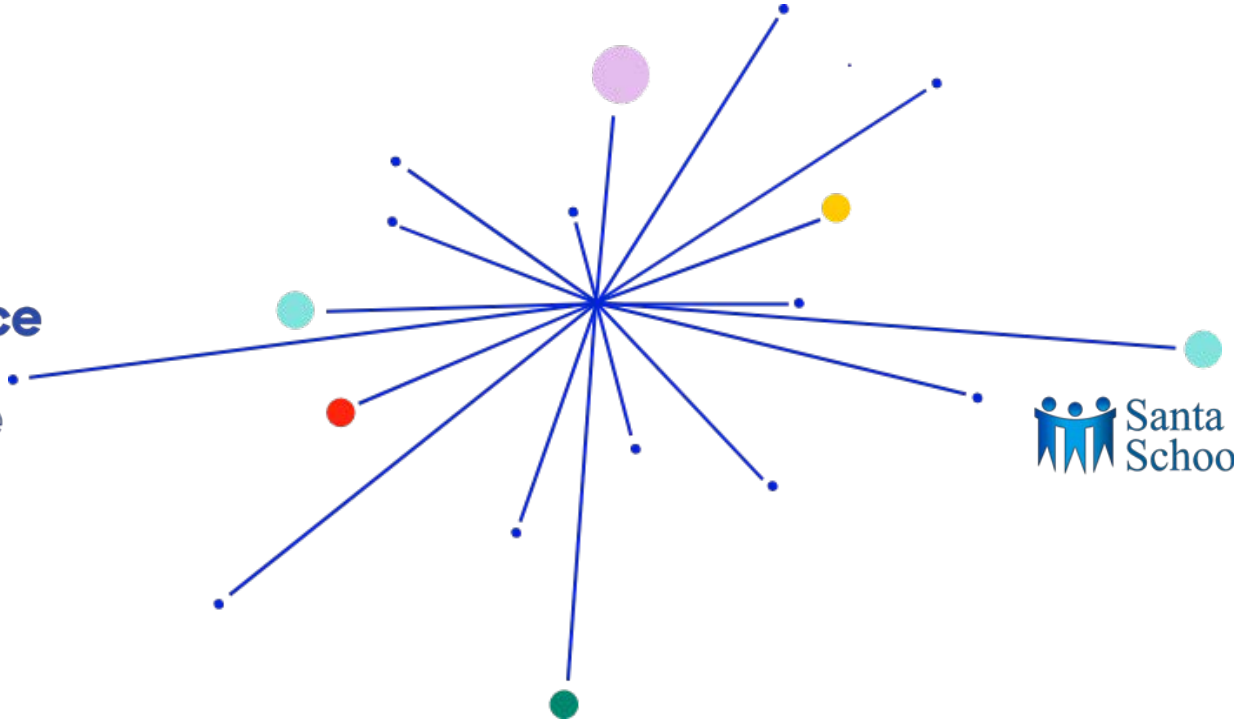
The context in which a partnership is established is likely to change, and projects will need to be ready to learn how to adapt in a flexible manner that sustains the value of the work in a changed or changing context.

- It is not uncommon for school district leadership to change, and for there to be an associated change in district priorities.
- For our project, like many others working with schools, the pandemic forced a re-evaluation of teacher and leader needs, what could be done in terms of data collection and professional learning and which aspects of the work might be most valued.
- It is important to be nimble and willing to redefine overall project goals and refocus activities.

Remember, partnerships involve humans, and people are complicated. We're also working with people who exist in a context different from our own–different pressures, priorities, needs, concerns, and timelines.

Thank You!

Improving Practice Together



The Lawrence Hall of Science

Santa Clara Unified School District

NSF

Stanford GRADUATE SCHOOL OF EDUCATION