

# Chapter 4, “Using Improvement Science Principles for New Teacher Support,” Appendices

## Appendix A: PDSA Form



### Plan a Learning Loop

#### Plan-Do-Study-Act (PDSA) Cycle

Due

January 11, 2021

We can learn more about how to make improvement on our problem of practice by trying out change ideas and seeing how they work! Based on your understandings about the root causes of your problem of practice, what could you try tomorrow to work toward improvement?

Use this form to keep track of the changes you try and the impact they have on your problem of practice. **Note:** One great way to collect data about how your change idea went is to ask your mentor to observe the lesson and collect data for you.

#### PDSA Cycle #1

**Group's Problem Statement:** *As teachers we need to co-create purposeful assessments that are engaging, relevant and accessible to all students that emphasize learning over grades.*

**What do you want to try in your classroom to improve and/or learn more about the focus issue? Describe the change idea (the test):** *I want to try having multiple ways you can make a scientific model. I want to see if having a variety of methods for sharing thinking will help students share more thoroughly.*

**What is your plan for conducting the test?** *I will have 5th graders make models of the phases of the moon. I will demo 2 ways and 3 other suggestions for methods of modeling. The students will be able to use the digital resources as well.*

**Questions:** What do you want to learn from this cycle?  
*I want to learn whether or not multiple means of expression will increase the engagement with the assessment.*

**Data:** What data will you collect to answer your questions? How will it be measured? When will it be measured? *I will be able to compare the responses to the previous model making activities and see if more students engage.*

**Predictions:** What are you predicting the outcome to be? *I predict students will make a variety of models and may forget to label the parts because of the fun tactile options.*

**What were the results?** What were the results? What did we learn? *(completed after implementation) The same number of students responded. Students mainly stuck to the demoed models or a drawing. No students made 3D models with food or clay. I needed examples of all the possible methods for responding.*

- ☐ Adopt
- ☒ Adapt
- ☐ Abandon

**Next steps:** *I will continue trying to provide various methods of responding when I can provide examples of each method. I think I should limit the opportunity to three methods to make the decision easier for students.*

## Appendix B: High Tech High Design Principles

### Design Principles

High Tech High is guided by four connected Design Principles that set aspirational goals and create a foundation for understanding our approach:

- Equity
- Personalization
- Authentic Work
- Collaborative design

### Equity

High Tech High is an equity project. Teachers work to address inequities and help students reach their full potential. Our schools are intentionally diverse and integrated, enrolling students through a zip code-based lottery aimed at creating schools that are reflective of the communities we serve. Teachers recognize the value of having students from different backgrounds working together, and employ a variety of approaches to accommodate diverse learners without academic tracking. High Tech High has an acute focus on college entrance and college completion for all students.

### Personalization

High Tech High teachers practice a learner-centered, inclusive approach that supports and challenges each student. Students pursue their passions through projects, and reflect on their learning. Recognizing that identity development and personal growth occur in the context of community, our schools foster relationships of trust, caring, and mutual respect among students and adults through program design elements such as small school size, small classes, home visits, advisories, and student collaborative work.

### Authentic Work

High Tech High school projects integrate hands and minds and incorporate inquiry across multiple disciplines, leading to the creation of meaningful and beautiful work. Students engage in work that matters to them, to their teachers, and to the world outside of school. Students connect their studies to the world through fieldwork, community service, internships, and consultation with outside experts. Our facilities are collaborative workplaces with small-group learning and project areas, relevant technology, and common spaces where artwork, prototypes, and other artifacts of student thinking are created and displayed.

### Collaborative Design


High Tech High teachers collaborate to design curriculum and projects, lead professional development, and participate in hiring, while seeking student experience and voice in each of these areas. With students as design partners, staff function as reflective practitioners, conducting inquiry into equitable teaching and learning, school culture, project design, and authentic assessment. We are all still learning.

High Tech High Design Principles, [www.hightechhigh.org/about](http://www.hightechhigh.org/about)

## Appendix C: Empathy Interview Question Preparation Worksheet

# EMPATHY INTERVIEW

## POSSIBLE INTERVIEW QUESTIONS



### Preparing Interview Questions (15 minutes)

What questions could you ask a student/practitioner/stakeholder to understand their experience of your group's problem/issue, and the factors contributing to it?

- *Question Selection/Brainstorm* (3 min): Individually, review the questions below. Adapt these or generate a few questions of your own.
- *Share & Organize* (5-10 min): As a group, identify/organize your top 5-6 questions. Will they help you understand what makes X challenging, or when students experience success (i.e. the root causes you need to address)?

**Consider these possible Empathy Interview Questions (ones in bold highly recommended!):**

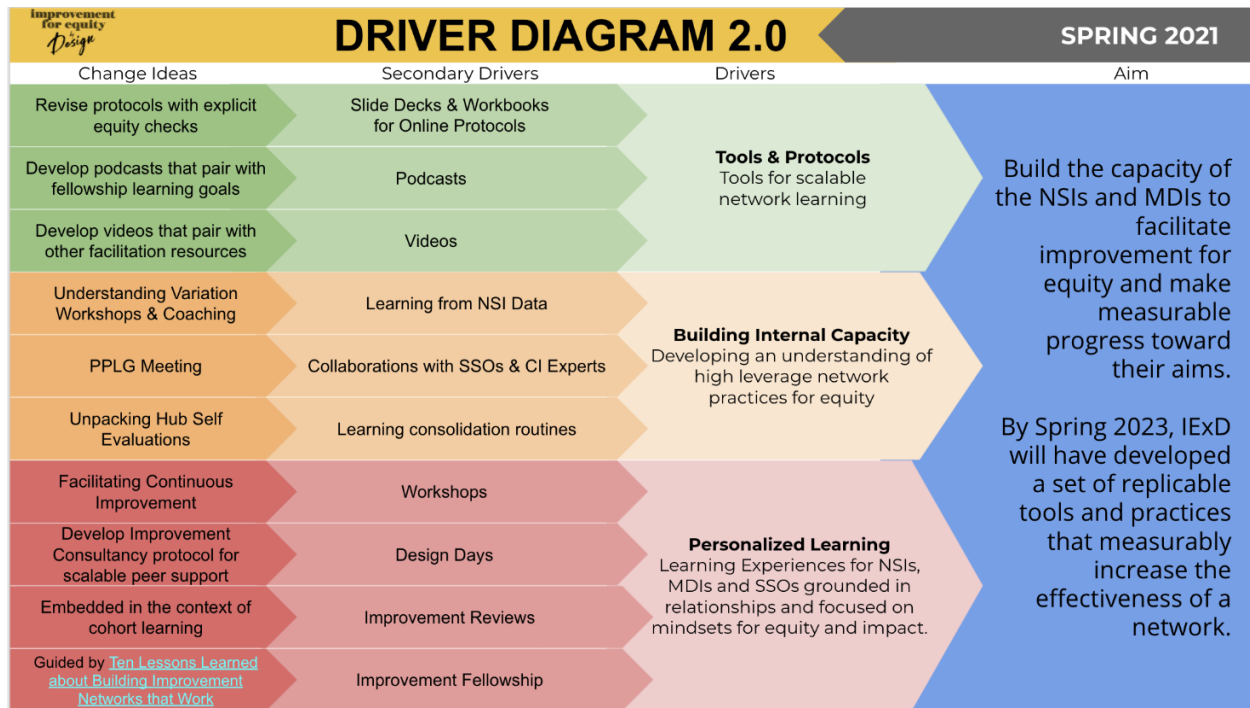
- What is **one word** you would use to describe how you feel about X?
- Tell me about a **time when you felt successful** in X...
  - What happened? What made this a success? (What did you do? What did others do?)
- Tell me about a **time when you X was hard**...
  - What happened? How did that feel? Why was that hard? What do you wish would have happened?
- What advice would you give another student/person about X?
- What advice would you give to me about X?
- What do you wish others knew about X?
- Suppose you could have **three wishes** to make X the best it could be. What would they be, and why?
- What do you wonder about X, or wish you knew?
- Draw me a picture of what you think about when you hear X... (then "Tell me about what you drew.")

**Your questions:**

Please use/adapt/share this protocol as you see fit! All we ask is that you keep the attribution statements so people know where they came from, and can reach out. For more protocols visit: <https://hthgse.edu/crel/protocols>

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## Appendix D: IExD Driver Diagram



## Appendix E: 2021 Feedback Survey Responses for Facilitating

### Improvement for Equity


#### **What was your biggest takeaway from this workshop?**

- Learned how to frame improvement science and self work as needing to happen in tandem.
- Learned about the importance of transparency as a facilitator to then (lovingly) challenge deficit thinking.
- The pivot from prioritizing *how* (tools) to prioritizing *why* (people/community/purpose) while still including both was really evident in your facilitation. Big takeaway: Analysis tools are means, not the end, and they can be contextualized in this valuable way.
- CI work is human-centered work. When it is framed this way, it moves from an overwhelming set of systems and protocols to connecting and working together as humans!
- It's important to think through our biases before executing change ideas, and there are many methods for doing so
- Prioritize human connections—go slow to move fast. Now I think a strong facilitator is flexible and has a good sense of their team's needs.

## Appendix F: Facilitating Improvement for Equity Agenda

DAY 1: BUILDING AN IMPROVEMENT TEAM

AUGUST 9, 2021



9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50	12:00	12:10	12:20
Welcome			Identity and Improvement							Break		Building Inclusive & Effective Learning Teams			Flipping the Switch			Prep for Labs & Closing		
Time		Topic								Purpose										
9:00PT 12:00ET		Welcome and Introductions								To get oriented to the day and connect with one another										
9:25PT 12:25ET		Identity & Improvement								To understand how dialogical interviews can support conversations about equity										
9:40PT 12:40ET		Dialogical Interviews with Learning Partner								To learn more about each other and our own purpose										
10:20PT 1:20ET		Process Dialogical Interviews								To share our learnings, and debrief the process to build our capacity with the protocol										
10:40PT 1:40ET		Break								To stretch our legs and give our eyes a break!										
11:00PT 2:00ET		Building Inclusive & Effective Learning Teams								To reflect on the conditions and dispositions that support powerful learning teams, and experience a tool you can use with teams you coach										
11:40PT 2:40ET		Flipping the Switch								To learn how to respond to deficit thinking when it presents in improvement work.										
12:10PT 3:10ET		Prep for Labs								To get a sense for the protocols we will practice tomorrow and do a bit of pre-work to help them be successful.										
12:20PT 3:20ET		Next Steps and Feedback Form								To get a sense of where we're going next, and to help us improve this workshop										
12:30PT 3:30ET		<b>See you tomorrow! Homework:</b> <ul style="list-style-type: none"> <li>Complete the Facilitator Core Competency Self Assessment (p. 19-24)</li> <li>Come prepared to discuss the pre-work articles</li> <li>If you are facilitating the Root Cause Analysis or Dilemma Consultancy tomorrow, come to office hours today to prepare.</li> </ul>																		

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# DAY 2: KEEPING EQUITY AT THE CENTER

AUGUST 10, 2021



9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50	12:00	12:10	12:20
Welcome		Article Discussion			Break	Lab Prep	Facilitation Lab #1: Interrelationship Digraph Pitfalls in Facilitating Improvement for Equity				Lab Debrief	Break	Lab Prep	Facilitation Lab #2: Dilemma Consultancies Keeping Equity at the Center				Lab Debrief	Close	
Time		Topic								Purpose										
9:00PT 12:00ET		Welcome								To get oriented to the day and connect with one another										
9:20PT 12:20ET		Article Discussion								To make sense of the readings together and consider how they apply to our work as facilitators.										
9:50PT 12:50ET		Break								To stretch our legs and give our eyes a break!										
10:00PT 1:00ET		Facilitation Lab #1: Interrelationship Digraph								To learn facilitation techniques for root cause analysis										
11:00PT 2:00ET		Break								To stretch our legs and give our eyes a break!										
11:10PT 2:10ET		Facilitation Lab #2: Dilemma Consultancies								To practice and discuss what we might do to build a learning culture and improve things in challenging facilitation scenarios										
12:20PT 3:20ET		Next Steps and Feedback Form								To get a sense of where we're going next, and to help us improve this workshop										
12:30PT 3:30ET		See you tomorrow! Homework: <ul style="list-style-type: none"><li>If you are facilitating the Data for Equity Protocol or Idea Generation tomorrow, come to office hours today to prepare.</li></ul>																		

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# DAY 3: FACILITATION LABS

AUGUST 11, 2021



9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50	12:00	12:10	12:20
Welcome		Lab Prep		Facilitation Lab #3: Data for Equity				Lab Debrief		Break		Lab Prep	Facilitation Lab #4: Idea Generation				Lab Debrief	Facilitator Reflection and Goal Setting		Close
Time			Topic								Purpose									
9:00PT 12:00ET			Welcome and Introductions								To get oriented to the day and connect with one another									
9:20PT 12:20ET			Facilitation Lab #3: Data for Equity								To experience a data protocol designed for equity, and practice facilitation while navigating some common pitfalls									
10:20PT 1:20ET			Facilitation Lab Debrief								To debrief the process, share take-a-ways, and provide kind, helpful and specific feedback on facilitation.									
10:40PT 1:40ET			Break								To stretch our legs and give our eyes a break!									
11:00PT 2:00ET			Facilitation Lab #4: Idea Generation								To practice facilitation with feedback									
11:50PT 2:50ET			Facilitation Lab Debrief								To debrief the process, share take-a-ways, and provide kind, helpful and specific feedback on facilitation.									
12:00PT 3:00ET			Facilitator Reflection & Goal Setting								To reflect on our learning from the past three days and look ahead to how will continue our growth as facilitators.									
12:20PT 3:20ET			Closing & Feedback								To wrap up our time together, and to help us improve this workshop									
12:30PT 3:30ET			Goodbye!																	
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## Appendix G: Empathy Interview Questions and Notes

### **What's one word to describe how you felt going through induction?**

Extra. Induction coaches were great. Understand the program's purpose of retention. It felt like "another thing going on."

### **What was successful?**

Picking a part of a project, asking students what they learned from it. Generalized it from there. One thing that was changed that was helpful was when the inductees were allowed to be in a breakout room together to "vent it out."

### **When was a time that induction was hard?**

There was a Google slide show that was very long. Others checked out when presented with the Google slides. Panicked by information overload at the beginning. The end year of the goal is helpful eventually but not as many "nitty gritty" things.

### **Three wishes?**

Keep it online, make it more struct on what days mentors/inductees need to meet (it tended to get pushed back), make it clear what should be prioritized.

### **What would have been helpful in terms of assignment completion on time?**

Flexibility is appreciated. Let's say there's a reading followed by turning something in the next class. If you're able to, you start the reading in the class and make a plan for how you'll complete the work. You might forget about the homework otherwise.

### **Tell me about a time that induction supported and didn't support your instructional needs.**

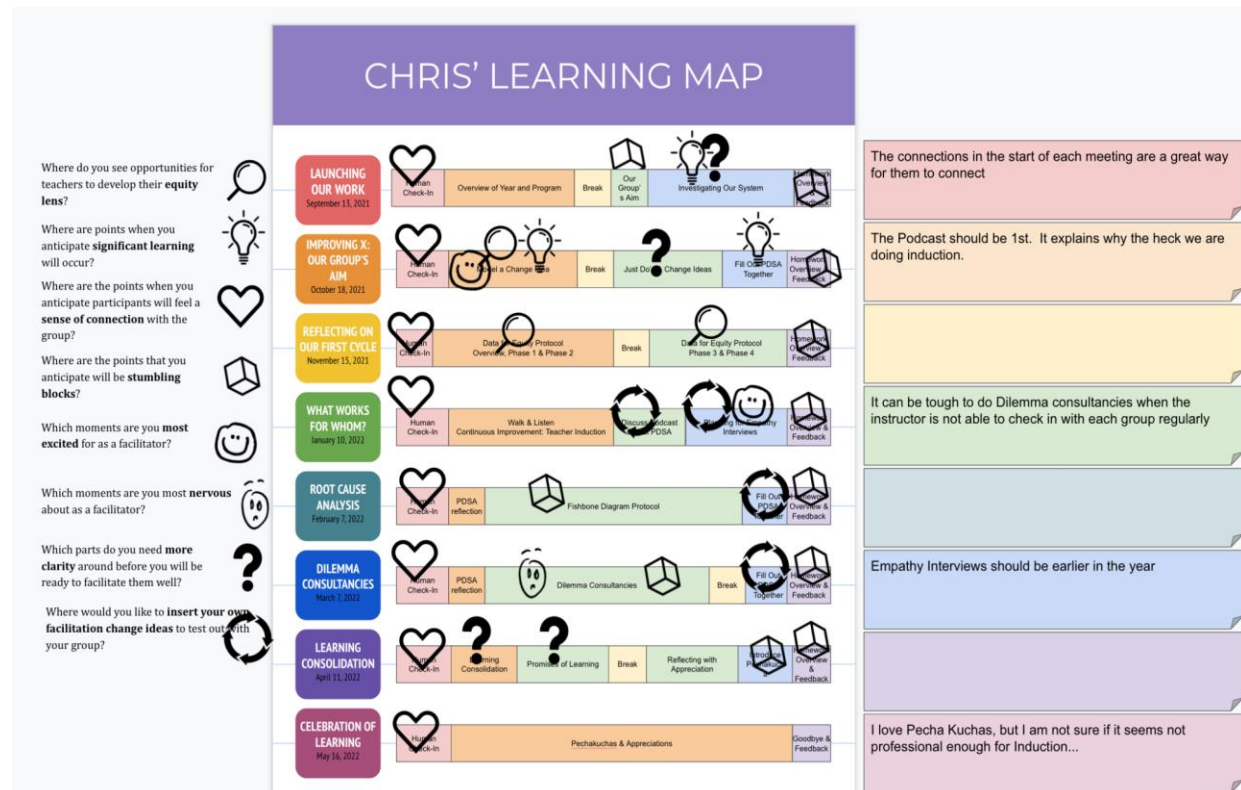
My main focus first year was to elevate all the voices. Unpacking different strategies was helpful. Had data to prove more voices in the room. One thing that didn't help was on student engagement and using a fishbone diagram. The outcome was learning that something out of the teacher's control (scheduling) was the problem. That wasn't helpful.

### **What was the culture of engagement in Zoom?**

Lots of 5 minute breaks. Time in class to complete assignments. Got to work in PDSA cycles in Zoom. The times when he scheduled 25 minutes to be in a breakout room to work on a thing. People took more ownership.

## Appendix H: Learning Map

Coaches annotated a map of the year to identify points that could be powerful and points that needed attention. They captured their questions and ideas for change to discuss with colleagues.



## Appendix I: Evaluating PDSA Cycles



### Plan a Learning Loop

#### Plan-Do-Study-Act (PDSA) Cycle

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January 11, 2021

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Use this form to keep track of the changes you try and the impact they have on your problem of practice. **Note:** One great way to collect data about how your change idea went is to ask your mentor to observe the lesson and collect data for you.

#### PDSA Cycle #1

**Group's Problem Statement:** Breakdowns in communication & community have made it especially hard to support Emergent Multilingual Students during distance learning.

**What do you want to try in your classroom to improve and/or learn more about the focus issue? Describe the change idea (the test):** I want to communicate with my English Language Learners' families each week through class dojo to see if they need anything and how they are doing.

**What is your plan for conducting the test?** Identify my English Language Learners. Reach out through class dojo. If do not have class dojo help them set it up through email or a phone call or on zoom. Establish check-ins with the students or their families to see if they have any needs.

**Questions:** What do you want to learn from this cycle?  
See if they need supplies, access to technology or just support.

**Data:** What data will you collect to answer your questions? How will it be measured? When will it be measured?

Weekly notes on tracker in excel.

**Predictions:** What are you predicting the outcome to be?  
I am predicting that parents will feel more comfortable relaying what they need on a one to one basis. See if I can connect them to the resources necessary.

**What were the results?** What were the results? What did we learn? *(completed after implementation)*  
Learned that some families needed help logging onto certain platforms, was able to walk them through it. Other families needed new devices or headphones. Learned about personal circumstances and how some parents are working and trying to navigate online, others siblings are in charge while parents are at work, and how others have been affected. Attendance increased during morning launches and small groups.

☒ **X Adopt**

☐ **Adapt**

☐ **Abandon**

**Next steps:**  
**Continue to check-in**

Checked in with parents during parent teacher conferences and will check in at next conferences.

Articulation of a clear change idea & hypothesis	
A. Is the learning goal of the test clear?	Yes, but it needs to have a clearer connection between the problem statement and what they are trying to improve.
B. Is the change idea based on “best practice?”	No, and it’s inequitable
C. Is the change idea clearly specified?	
D. Are the predictions clear? (avoid yes/no predictions when possible)	
<b>Equity checks</b> —pause to consider: <ul style="list-style-type: none"> <li>Does the change idea have potential to interrupt inequitable practices or systems?</li> <li>Are assumptions explicit so they can be tested?</li> </ul>	

Design of the test	
E. Is there a clear plan for data collection?	It’s kind of clear but could be clearer, and data collection isn’t clear or connected.
F. Are the data related to the predictions?	Not quite
G. Is the scale of the test appropriate for this change idea?	Having a common aim will help in creating a more specific measurable goal for the participant.
<b>Equity checks</b> —pause to consider: <ul style="list-style-type: none"> <li>Are students involved in carrying out the test? It isn’t always feasible depending on the change idea being tested, but are there ways to empower student participation? No</li> <li>Can the data provide insight into how students are experiencing the change idea? No</li> </ul>	

Documentation of learning	
H. Was the plan carried out as specified?	Yes
I. Did the team record notes on implementation, e.g. surprises or unintended effects?	This is challenging to understand what they did, and how their learning was adjusted
J. Did the team analyze data and compare results to their predictions?	No
K. Did the team explicitly reflect on the initial hypothesis? summarize the main findings that the test uncovered?	
<b>Equity checks</b> —pause to consider: <ul style="list-style-type: none"> <li>• Reexamine the findings -- could the <i>predictions</i> have been influenced by biases or deficit thinking? Why or why not?</li> <li>• Could our <i>implementation</i> of the change idea have been influenced by biases or deficit thinking? Why or why not?</li> <li>• (If you are present at the data discussion or have notes/insight) Were all team members given fair opportunity to voice their interpretation and analysis of data? If not, whose voices were amplified and whose were stifled in the data discussion?</li> </ul>	

Use of learning to drive continuous improvement	
L. Did the team explicitly reflect on the initial hypothesis?	
M. Did the team record notes on what they would do next (ADOPT, ADAPT or ABANDON), based on what they learned?	
<b>Equity checks</b> —pause to consider: <ul style="list-style-type: none"> <li>• Have any potential equity implications been overlooked in the team's summary?</li> <li>• Does the team's idea for what to do next have potential to further or more effectively interrupt inequitable practices &amp; systems?</li> </ul>	

## Appendix J: Feedback Debrief

# Feedback Debrief

How can you set your group up for success with their first PDSA cycle?  
What feedback would you give to this person and how?

Let's clarify and specify the problem statement so that we can create a more targeted change idea.

I would want to address the inequitable nature of the change idea itself (but in a socratic and supportive way) and help the inductee generate change ideas that might meet the goal (once I was more clear on the goal, like is it a communication goal or a community building goal?)

in addition to the blaming style of this pdsa, it is amorphous and hard to clearly see what they will be doing. I would ask them what they want to accomplish and how they would like to be communicated with if they were a parent.

The word "community" stands out -- What would it look like to achieve this aim? How would you know you had? Let's use those thoughts to refine the problem/aim and what data you're going to collect.

I would love to walk through the PDSA cycle document with my inductees and provide two models (similar to what we have done here): one that needs rethinking and one that is very clear and spot on to the work. I appreciate that we are going to start with a whole team change idea before everyone diverges off. Also, include more feedback loops after PDSA cycles.

The problem statement drives the cycle and removing blame and clarifying the change idea are important to the process. Moving the PDSA cycle up and having some exemplars, perhaps following a format similar to this, would be helpful.

I would encourage this person to reflect on what they are trying to achieve with building community (communication? Like what exactly does this person want?) with families and to brainstorm possible ways that can help authentically really get at what they want to achieve. I think there are definitely a lot of places for an equity check (i.e the problem statement itself, the change idea, etc.) and think this could be a great time for reflection.

Love the focus on Emergent Multilinguals and families. What led you to focus on Class Dojo as the primary means of communication? In your convos, how can you create space for families to open up about their experiences thus far? Can you tell me more about current comm systems and what success would look like? What would it look like for the families opinion?

- 1) Let's work on the problem statement
- 2) Each week we will look at PDSA's from past together to annotate w/ same question boxes... I'm thinking Look at Model change idea, Share win from week in group, (((NEW CONTENT))) annotate prior PDSA, Plan for next PDSA, end

## Appendix K: Student Voice Survey Questions

I have the opportunity to make choices about my work in this class.. ( 5 - Strongly Agree, 3 - Neutral, 1 - Strongly Disagree) \*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

In this class, my ideas are taken seriously.. ( 5 - Strongly Agree, 3 - Neutral, 1 - Strongly Disagree) \*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

This teacher responds to student suggestions to make our class better. ( 5 - Strongly Agree, 3 - Neutral, 1 - Strongly Disagree) \*

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

Please elaborate on your answers above with examples from class.

Your answer \_\_\_\_\_

What ideas do you have for improving our class?

Your answer \_\_\_\_\_