What’s Your Problem?: Improvement Science for Deeper Learning

HTH GSE Center for Research on Equity and Innovation
Agenda ~ 3/24/16

Essential Questions:

- How can we use improvement science to tackle persistent problems of practice?
- How can we use empathy interviews and root cause analysis to gain a deeper understanding of the issue we want to improve - and the factors contributing to success and/or struggle?
- How can we develop a “theory of action” to guide our next steps?

Norms:

- Avoid Solutionitis… seek to understand before jumping to solutions
- “Yes and”… celebrate and build on ideas without getting attached
- Embrace “definitely incomplete; possibly incorrect”… don’t let perfection get in the way of learning
- Share the air… step up, step back, invite others in

10:30 - 11:00 Welcome & Overview

11:00 - 11:25 Understanding the Problem: Fishbone Diagrams & Prepping for Empathy Interviews

Goal: To better understand the user experience related to our group’s issue, and the factors that inhibit or support success.

Problem Statements:

- Student have trouble participating equitably in group work.
- Not enough students from traditionally marginalized groups are going to college.
- High quality project-based learning does not happen as often as we would like.

1. Question Selection/Creation (5 min): What questions could we ask a student/practitioner to understand their experience of our group’s problem, and the factors contributing to it? Individually, review the questions on the green paper in the middle of your table. What are your top 3-5? Perhaps write 1-2 questions of your own.

2. Share & Organize (5 min): With a partner, identify/organize your top 5-6 questions. Will they help you understand possible barriers, and successes to build on (i.e. the root causes we need to address)?

3. Predict & Plan (3 min): Share one thing you think you will hear from your interviewee. Decide who will ask which questions. Both of you will take notes.
11:25 - 12:00  Empathy Interviews with Students/Alumni/Practitioners
   ● Partner Interviews (25 min)
   ● Debrief (10 min): What did we hear? What are we learning about the root causes that influence readiness? Are there questions that we wish we would have asked? Are there questions that were particularly fruitful? Did we probe effectively?

12:00 - 1:00  Lunch
   ● When you return, please sit with your same color at your topic table.

1:00 - 2:00  Protocol: Constructing Fishbone Diagrams
   ● Begin with Quick Whip: What was one thing that struck you from your empathy interview?

2:00 - 2:20  Break


3:20 - 3:55  Feedback & Prep for Exhibition

4:00 - 4:30  Attend exhibition at HTE

4:45 - 5:15  Exhibit your work here in the HTHI UN Theater (underneath the central staircase!)
Essential Questions:

- How can we use improvement science to tackle persistent problems of practice?
- How can we use empathy interviews and root cause analysis to gain a deeper understanding of the issue we want to improve - and the factors contributing to success and/or struggle?
- How can we develop a “theory of action” to guide our next steps?

Norms:

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10:30 - 11:00
Welcome & Purpose (R)

Facilitator’s Note:

- Sit with your group
- IR brief overview & index card swap icebreaker

11:00 - 11:25
Understanding the Problem: Fishbone Diagrams & Prepping for Empathy Interviews (S)

Facilitator’s Note: Prep for Empathy Interviews with partner from your group with different color dot- both interview and both take notes - after interviews meet with your same color dot group to construct fishbone

Goal: To better understand the user experience related to our group’s issue, and the factors that inhibit or support success.

Problem Statements:

- Student have trouble participating equitably in group work.
- Not enough students from traditionally marginalized groups are going to college.
- High quality project-based learning does not happen as often as we would like.

Question Selection/Creation (5 min): What questions could we ask a student/practitioner to understand their experience of your group’s problem, and the factors contributing to it. Individually, review the questions on the green paper. What are your top 3-5? Perhaps write 1-2 questions of your own.
**Share & Organize (5 min):** As a group, identify/organize your top 5-6 questions. Will they help you understand what gets in the way of more students learning more deeply more often (i.e. the root causes we need to address)?

**Predict (3 min):** Do a quick whip, where each person shares one thing they think they will hear.

**Plan (2 min):** Each person will ask a question. Everyone will take notes.

**11:25 - 12:00**

Empathy Interviews with Students/Alumni/Practitioners  
- Partner Interviews (25 min)  
- Debrief (10 min): What did we hear? What are we learning about the root causes that influence readiness? Are there questions that we wish we would have asked? Are there questions that were particularly fruitful? Did we probe effectively?

**12:00 - 1:00**  
Lunch (when you return, sit at your color table for your topic)
- 1 minute autobiography here

**1:00 - 2:00**  
Protocol: Constructing Fishbone Diagrams (S)  
**Facilitator’s Note:** 1:00 - 1:15 Share IR stories, 1:15 - 2:00 Fishbone  
- Begin with Quick Whip: What was one thing that struck you from your empathy interview?

**2:00 - 2:20**  
Break

**2:20 - 3:20**  
Protocol: Driver Diagram Generation (R)

**3:20 - 3:55**  
Feedback & Prep of Exhibition

**4:00 - 4:30**  
Attend exhibition at HTE

**4:45 - 5:15**  
Exhibit your work here in the HTHI commons!
Problem Statement: **Student have trouble participating equitably in group work.**

*Potential Empathy Interview Questions:*

- Tell me about a time where you felt successful in group work…
  - Why do you think you were successful?
    - What did you do?
    - What did others do? (your teacher, your classmates)

- Tell me about a time when group work was hard…
  - How did that feel?
  - What did you do?
  - Why was that hard?
  - What do you wish would have happened?
  - What would have helped?

- What advice would you give another student about group work?
- What advice would you give to me about group work?
- What do you wish others knew about group work?
- If you could describe how you feel about group work in one word, what is it?
Problem Statement: Not enough students from traditionally marginalized groups are going to college.

Potential Empathy Interview Questions for seniors/alumni:

- Tell me about a time in school where you felt like "Yes, this is preparing me for college and a career beyond school."
  - What did you do?
  - What did others do? (your teacher, your classmates)
  - Why did it feel like it was preparing you for college or career?
- Tell me about a time in school where you felt like "No, this is not preparing me for college or a career beyond school."
  - How did that feel?
  - What do you wish would have happened?
  - What would have helped?
- What advice would you give another student about college or beginning a career?
- What advice would you give to me about how to help students get to college or career?
- What do you wish others knew about your experiences of preparing for college or career?
- If you could describe how you feel about college or beginning a career in one word, what is it?
- What are the barriers/obstacles you’ve experienced to applying for college or beginning a career?
Problem Statement: High quality project-based learning does not happen as often as we would like.

Potential Empathy Interview Questions for practitioners:

● Tell me about a time in your own work where you felt like “Yes, this is quality PBL.”
● What has helped you grow as a PBL practitioner?
● Where have you seen PBL happening well? Why do you think this happened?
● In your experience, what makes PBL challenging to pull off well - in a classroom, and across a school?
● What are the barriers/obstacles to spreading PBL more broadly?
● What do you think it would take to get more PBL happening in more places?
● What support/resources (besides money) would you need to take PBL to the next level? What would that look like for you?
● If you could identify one thing that would help you spread PBL in your context, what would it be?
Fishbone Generation Protocol

The purpose of this protocol is to arrive at a deeper understanding of the problem we want to address (before jumping to solutions).

Norms:

- Avoid Solutionitis… the goal is to understand the issue, not solve it (yet)
- “Yes and”… the goal is to generate lots of ideas, and not fixate on one
- Embrace “definitely incomplete; possibly incorrect”
- Share the air

1. Generating our Problem Statement (5-7 minutes)

- Individual: What is the problem we need to solve? See if you can express the problem in one sentence.
- Whip: Share problem statements.
- Choose one or create a new one (without getting hung up on the perfect wording). Write your group’s problem statement at the “head” of your fishbone diagram.

2. Initial Brainstorm of Causes (5 min.)

Based on your work digging into the problem (i.e. empathy interviews, expert convenings, relevant data, research, etc.) and your own ideas/experiences, individually brainstorm as many causes as you can that might contribute to the problem/issue. Write each cause on a different post-it. For meaty "big" topics, it can help to ask a chain of “why?”.

3. Share & Categorize (15-20 min)

- Whip: Each person shares one cause contributing to the problem. If others have a similar cause, you can start to group those post-its together on your poster.
- Continue to share your initial brainstorm, building on each other’s ideas and adding new causes that may contribute to the problem.
- Cluster on your Poster: Group related causes together, and give each category a title. (The stuff on the post-its are the details/bones on the fishbone).

4. Post & Reflect (5 min)

Post your poster to the wall. Does your diagram capture the root causes you think are important? Anything missing? Then each person gets to vote with one heart and one star.

- High Leverage: Put a heart by the factor, that if addressed, you think would have a significant impact on the problem.
- Practical: Put a star by the factor that is within your control, that your team could address with little effort.

*This protocol has been created by the HTH GSE Center for Research on Equity and Innovation.
Driver Diagram Generation Protocol

The purpose of this protocol is to generate a shared “theory of action” to drive a team’s improvement efforts and ultimately achieve the aim.

Note: Driver diagrams are not intended to be set in stone. Your team’s theory of action should evolve as you learn more about the problem/gap you want to address, the change ideas you are trying, and how best to achieve your aim. We encourage teams to revise your driver diagram to reflect your most current thinking/focus, and to keep track of versions 1.0, 2.0, etc. so you can reflect on the evolution of your learning.

Norms:
- “Yes, and”... the goal is to generate lots of ideas, not fixate on one
- Embrace “definitely incomplete; possibly incorrect”
- Share the air

Some helpful definitions:
- **Aim** = what you want to accomplish for whom by when (samples below)
- **Primary Driver (the what)** = what you need to focus on to achieve your aim (i.e. financial literacy)
- **Secondary Driver (the where)** = where in your system (the existing structures/processes) you should focus your energies to effect the primary driver (i.e. parent workshops)
- **Change Idea (the how)** = what you can try and test/refine (i.e. Families complete the FAFSA together at the monthly parent meeting)

Protocol:

1. Clarifying/Refining our Aim (5 minutes)

   **As a group, craft/refine your aim statement: What do you want to accomplish, for whom, by when?**

   It can help to begin by having each person, individually or with a partner, craft an aim statement. Follow this with a whip where each person/partnership shares their aim with the group. Then the group can adopt/adapt from these to create an aim statement everyone feels good about. **Write your group’s aim statement on the left side of your poster.**

   **Some things to consider:**
   - Is your aim **measurable**? To help ensure your aim is measurable, it can be helpful to ask yourselves this question: “If X was the best it could be, what would it look like?” It can also help to get baseline data related to the issue/gap your team is working on.
   - **Some sample aims:**
     - By Spring 2015, all HTHNC seniors will apply to a 4-year college.
     - By the end of 15-16, CAT HS will decrease our % of students who need remedial Math & English courses in college from 85% to 50%.
     - By May 2016, 60% of seniors at John Muir HS will score a 3 or 4 on the first reading of their senior research paper (compared to 20% last year).
2. **Identifying Primary Drivers (15 minutes)**

- **Individual (2 minutes):** Each person identifies the top 4 drivers (i.e. *high leverage areas*) they think the team needs to focus on to impact the aim, and writes each driver on a separate index card.
  - **Facilitation Move:** It can help to think of drivers as X in the following statements: "If we figured out X, we could achieve our aim" or "If we don’t figure out X, it is unlikely we would achieve our aim."

- **Whip & Cluster:** Each person shares their favorite driver with the group. If others wrote down a similar driver, group these cards together on the table.
  - **Facilitation Move:** As your group shares and clusters, it can be helpful to organize the “stacks” with the most cards to the top of the table, and those with the least to the bottom. This gives the group a visual indicator of which drivers might be most important.

- **As a group, select 3-5 drivers** that you think are essential for impacting your aim. Write those drivers on your driver diagram poster. This is your “theory of action” (i.e. if you could move these drivers, you could achieve your aim).
  - **Questions for the team to consider:**
    - Is this driver *specific* enough that we all understand what to focus on?
    - Is this driver *impactful* enough that it will move the work forward?
    - Is this driver within our *locus of control*, meaning we can do something about it? (i.e. Poverty is real, but may not be a helpful driver. However, Family Support could be an important driver and signals a way of working with families to reduce the effects of poverty.)
    - Are these drivers *necessary and sufficient* for achieving our aim?
    - Which driver do we think is our *greatest lever* for change? *(Star this one.*)

3. **Generating Change Ideas (15 minutes)**

- **Individual Brainstorm (3 minutes):** How might we impact the drivers we identified? What might we try? Where is this happening well already (bright spots), and what are they doing? *Write each idea on its own post-it.*

- **Share & Align (10-12 min):** Individuals share their ideas with the group, and post each change idea by the driver they feel it most impacts.
  - **Question for the team to consider:**
    - What do we notice about the *alignment* (or lack of) between our change ideas and drivers? (If you have lots of change ideas that don’t align to your existing drivers, this could suggest a new driver is needed. If you have a driver without any change ideas, this driver may not be helpful to your current “theory of action”.)

- **Identify high leverage change ideas:** As a group identify 3-5 change ideas that you think are most impactful, and that you could get moving on quickly. *(Star these on your driver diagram.)*

4. **Identifying Secondary Drivers (if time permits)**
If your team has time, you can add secondary drivers to your diagram. Secondary drivers articulate “where” in the system (i.e. what structures and processes) you can focus your efforts to impact the primary drivers. They can be helpful for focusing the team’s efforts and coming up with more concrete change ideas. For example, helpful secondary drivers may be Advisory, Internships, or Class Discussions.

5. **Debriefing the Process** (5 minutes)

Group members discuss the following questions:

- How well did we do with upholding the norms and sticking to the protocol?
- Was this protocol helpful for identifying high leverage drivers and change ideas?
- What worked well about this protocol? What could be improved?

*This protocol has been created by the HTH GSE Center for Research on Equity and Innovation.*

Pre-Readings: **What is Improvement Science? Do we need it in Education?**. This short article gives a helpful overview of improvement and describes a couple compelling and concrete cases of it in action.