Introduction to Improvement Science in Education
A Learning-by-Doing Simulation

https://tinyurl.com/CISCsimulation
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Objectives:

▪ Understand on a basic level what it feels like to apply improvement science techniques to solving educational problems

▪ Reflect on the skills and capacities required to do improvement work in educational contexts

Agenda:

1. Introduction

2. Mini-Lessons + Simulation
   ▪ Short break included

3. Reflection
Objectives:

- Attendees will be able to understand on a basic level what it feels like to apply improvement science techniques to solving educational problems.
- Reflect on the skills and capacities required to do improvement work in educational contexts.

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Learn by **DOING**.
A formal approach to the analysis of performance & systematic efforts to improve it.
SIMULATION LAUNCH:
Your Context
District
- 5 high schools
- 4 middle schools
- 4 elementary schools
Your School: High School
550 students

School Demographics:
Race/Ethnicity:
56% White
25% Hispanic
12% Asian
4% Black
3% Other

Socioeconomic Status:
23% Free & Reduced Price Lunch

The Year:
Fall 2011
Students seem to be absent a lot. The absences disrupt the class. It seems to be worse lately. Dissatisfaction with the Status Quo.

You (the administrative team)… decide to look into it.
This is the first graph you create…

Average Daily Attendance (over the year)

Our School
HS average
(0) **UNDERSTAND:** Walk through the data

(1) **DESCRIBE:** What do you notice?

(2) **INTERPRET:** What hypotheses or explanations do you have about what you see? What are alternative hypotheses?

(3) **ACT:** What will you do next?
- Teams of 4-5
- Identify the documents manager
- Distribute new data display
Number of Students by Absence (2010-2011 School Year)

(0) UNDERSTAND  (1) DESCRIBE  (2) INTERPRET  (3) ACT
Number of Students by Absence (2010-2011 School Year)

Number of absences during the 2010-2011 school year

“Chronically Absent” = Misses more than 10%

16%
88 Students
Problem Statement: **88 students (16%)** were chronically absent last year!

You decide to launch an improvement project focused on reducing chronic absenteeism.
Your Improvement Team

Your improvement team is composed of the following 4-5 members:

– Principal
– Dean of Students
– Attendance Office Manager
– 1-2 Teachers

Your team has training and experience in improvement science.
INSTRUCTIONS:

1. Grab a label & put it on
2. Introduce yourself to your team: Your name & Simulation Role

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WHAT
NEXT?
Improvement Science Cheat Sheet

Understand the Problem and the System that Produces It

Focus Collective Efforts

Generate Ideas for Change

WHAT NEXT?

Spread and Scale

Test and Build Evidence
An interdependent set of interactions among people, the tools, and materials they have at their disposal, and the processes through which they all join together to accomplish work.
**Aspirations**

**Current performance**

**Gap**

*Why* are we getting the outcomes we are currently getting?

*Let’s go investigate.*
We can continue to turn the data…

…but we also must become system detectives!
Investigating a Problem as a Team

Divide up the work
Learning as a Team

Consolidate insights!
1. How do users experience our problem?

Conduct an empathy interview focused on finding out as much as possible about a student’s experience. We want to understand emotions, thoughts, and needs.

Team Member Responsible:
DEAN OF STUDENTS
2. What is our current practice?

Create a visual representation of the way work is currently done using a **process map**. Annotate the map with the major issues or barriers that arise in the work.

Team Member Responsible:

ATTENDANCE OFFICE MANAGER
3. What are the most common reasons for our problem?

Collect and analyze data about the problem to identify key causes.

Team Member Responsible: TEACHERS
4. What does research & practice knowledge have to say about our problem?

Scan research and other relevant literature to find information about the problem or how it may be solved.

Team Member Responsible: PRINCIPAL