CISC Leadership Symposium
Shifts in Supporting District Improvement
Monterey, CA
February 22, 2018
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*Shasta COE*
Objectives

- Examine traditional regional systems of district level support
- Share insights from a partnership between County Offices of Education and the Carnegie Foundation
- Share examples of COE support to districts
Intro to Improvement Science
BANG HEAD HERE
INCENTIVES

WORK HARDER

ROLL-OUT

ACCOUNTABILITY

INNOVATION
The Carnegie Foundation

Support the education field to get better at getting better

Networked Improvement Communities (NICs)
How Are NICs Different?
An Insight About Knowledge

**Research Knowledge:** Knowledge about what works.

**Professional Knowledge:** Knowledge of local organizational context, structures, and processes.

**Improvement Knowledge:** The interaction of the theories of systems, variation, knowledge, and psychology.
Combine research, professional, and improvement knowledge to develop effective and lasting change.
Make the work problem-specific and user-centered
Variation in performance is the core problem to address
See the system that produces the current outcomes
Every system is perfectly designed to achieve exactly the results it gets.
We cannot improve at scale what we cannot measure
Anchor practice improvement in disciplined inquiry
Accelerate improvements through networked communities
“Psychology of Change”

The human component
What's Next

Understand the Problem and the System that Produces It

Focus Collective Efforts

Generate Ideas for Change

Spread and Scale

Test and Build Evidence
The Networked Improvement Paradigm

- Implement Fast and Scale Wide
  - Learn Fast to Implement Well
  - Focus on Sources of Variability in Performance
    - Focus on Standard Effect Size
The Networked Improvement Paradigm

Implement Fast and Scale Wide

Learn Fast to Implement Well

Focus on Standard Effect Size

Focus on Sources of Variability in Performance

What Works!

How to Make It Work! Replicability as the new Gold Standard
The Networked Improvement Paradigm

- Implement Fast and Scale Wide
  - Learn Fast to Implement Well
    - Focus on Sources of Variability in Performance
  - Focus on Standard Effect Size
    - What Works!
      - How to Make It Work!
        - Replicability as the new Gold Standard

- Develop Quality Processes to Support Complex Work
  - “Script it” vs. “Every situation is unique”
The Networked Improvement Paradigm

Develop Quality Processes to Support Complex Work

“Script it” vs. “Every situation is unique”

Individual Autonomy As Most Prized Norm

Working Together We Can Accomplish More

Implement Fast and Scale Wide

Learn Fast to Implement Well

Focus on Standard Effect Size

Focus on Sources of Variability in Performance

What Works!

How to Make It Work! Replicability as the new Gold Standard
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- Develop Quality Processes to Support Complex Work
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  - Focus on Sources of Variability in Performance
- Individual Autonomy As Most Prized Norm
- What Works!
  - All Improvers
  - Researchers vs Users “Knowers” “Doers”
- Working Together We Can Accomplish More
  - How to Make It Work! Replicability as the new Gold Standard
The Networked Improvement Paradigm

- Develop Quality Processes to Support Complex Work
- "Script it" vs. "Every situation is unique"
- Individual Autonomy As Most Praised Norm
- Working Together We Can Accomplish More
- Implement Fast and Scale Wide
- Learn Fast to Implement Well
- From Evidence-based Practice to Practice-based Evidence
- Researchers vs Users "Knowers" "Doers"
- All Improvers

Focus on Sources of Variability in Performance
- Focus on Standard Effect Size
- What Works!
- How to Make It Work! Replicability as the new Gold Standard
Understanding the Problem and the System Producing it
“You can not improve a process if you don’t understand it.”

-Deming
What is a System?

An **interdependent** group of **tools and materials**, **people**, and **processes** which join together to accomplish work.
“By the very nature of systems, each of us only sees a part of the system. The problem is, the part we see is very compelling.” --Peter Senge
Our Mission:

Working together as a community to provide all students with all options for education and training after high school to pursue a successful, fulfilling career.

Our Executive Team:

Shasta County Office of Education
College OPTIONS
Shasta County Public Health
Shasta Regional Community Foundation
Shasta Community College
First 5 Shasta
Representatives from K-12
Shasta Employment Development
Greater Redding Area Chamber of Commerce

Our Vision:

A community where children are ready to enter school, students succeed, and graduates are ready to pursue a fulfilling career.

Who We Are:

Reach Higher Shasta (RHS) is a cross-sector cradle to career collaborative working to increase educational attainment and career options for all Shasta County students. Over 16 partner agencies support Reach Higher Shasta along with all 25 Shasta County school districts.
Identifying Potential Causes and Effects: Fishbone Diagrams

**What is it?** A summary of a group’s understanding about the causes of the current problem

**Why is it useful?** Visualizes the causes of a problem at a high level; helps with scoping and identifying areas to dig in deeper.
Fishbone in the making...
5 Whys Protocol

**What is it?** A tool for digging into a problem and uncovering aspects that might not initially be visible

**Why is it useful?** Helps an individual or group to probe into a problem or phenomenon, to see beyond symptoms and to surface underlying causes. Often, in the process of answering the “why” question, processes, norms or structures that are part of the system are revealed.
RCA Real Life Example

Problem of Practice: The Washington Monument was falling apart.

Why does this problem exist?
Because harsh chemicals were being used to clean it

Why is that?
Because of all the bird droppings

Why is that?
Because birds gathered to eat all the spiders there

Why is that?
Because spiders gathered there to eat all the gnats

Why is that?
Because gnats were attracted to the lights at dusk

Why is that?
Because the Monument was the first to turn its lights on every day
Seeing the World as Others See It: Empathy Interviews

What is it? Conversations designed to gather information about a person’s experience as a “user” of a space, a process, an objective, or an environment.

Why is it useful? We can learn how different “users” (e.g., students, teachers, families) feel about a particular problem and how they might solve it.
Systems Map

1. ELEMENTS
2. People
3. Processes, tools, structures, norms
4. PROBLEMS

What’s missing?
Shasta Literacy System Map Draft 12/14/16

Key: 
- Current Focus of NIC Work
- Likely Next Focus of NIC Work

Intervention
- Double Grouping
- Intervention Materials
  - SIPS
  - LIPS Program
  - Orton-Gillingham
- After-school Tutoring
- Intervention block
- Identifying students for interventions (BPST/Aims Web)

District Guidance
- Providing Materials
  - Treasures
  - Other Reading Programs
- District & County Standards & Framework (alignment, scope and sequence)
- Selecting Assessments

Coordination
- Communication
- Allocating/Coordinating other supports
- BPST Assessment
- Other Assessment

Assessment
- Mini-Lesson
- Close Reading Strategies
  - Choral Reading (Fluency, Word recognition)
  - Read Aloud
  - Sentence Frames (Writing)
- Shared Writing, Modeling
- Shared Planning (Lesson Planning)
- Grouping Process

Teacher Support
- Shared Planning
- PD Sessions
- Coaching Teachers
- Videos

Planning
- Selecting Materials
- Road Mapping (Lesson Planning)
- Grouping Process

Classroom Instruction: Routines may be done in large or small groups, depending on student need
Understanding Workflows: Process Maps

What is it? A graphical representation of the steps, decision points, and links between them that come together to produce a particular outcome.

Why is it useful? Process maps create a shared understanding and provides valuable insights about strengths and gaps within current work flow.

“You cannot improve a process if you don’t understand it.”
- W. Edwards Deming
Rectangles are for tasks performed in the process.

Ovals show the start/end of process.

Process mapping can help identify areas for improvement.

There is usually one arrow out of a rectangle box. If not, you need a decision point.

Arrows show the direction or flow of a process.

Close all loops. i.e. Make sure every path takes you back to or ahead to another step in the process.
Teachers received training on administering the BPST. A “best” practice process map was created.
Where did the process break down?

Teachers used a Failure Mode Analysis Tool to identify areas of failure and create change ideas.
Teacher plans on when and where to administer the test and support if necessary.

Teacher gathers BPST materials: Copy student recording sheets, student booklet, clipboard.

Teacher reviews directions on how to administer and record the BPST.

Teacher pulls students, one-on-one, to administer test.

Teacher reads scripted directions.

Teacher places booklet and place marker in front of student.

Student makes letter sounds; teacher records responses, asks for letter names for each incorrect sound response according to protocol.

Student makes short and long vowel sounds; teacher records responses according to protocol.

Student reads CVC words; teacher records responses according to protocol.

Teacher reads CVC words; teacher records responses according to protocol.

Student continues through row i (2 syl (vccv)).

Teacher ends administration.

Is this beg of year testing?

4 or more CVC words correct?

Student continues through at least line k.

Students continue through line i, retesting each row where there was at least one error.

Proficient through lines (a-i)?
Avoid Jumping to Solutions!

▪ Dig deeper into the problem
▪ Uncover possible causes
▪ Build a picture of the system

“If I had 1 hour to save the world, I would spend 55 minutes defining the problem and 5 minutes solving it.”

Einstein
What do you think of Einstein’s quote? Thinking of a problem of practice facing your department/organization or one you support, how might you use some of these tools to dig deeper, discover causes, and build a big picture of the problem?
- Fishbone diagram
- Empathy techniques
- Analysis of variation- histogram, ordered bar chart
- Research scans
- Data analysis tools (Pareto Chart, Run Chart)
- Process map
- System map

**5 WHYS**

- Understand the Problem and the System that Produces It

**Focus Collective Efforts**

**What's Next?**

- Generate Ideas for Change
- Test and Build Evidence
- Spread and Scale

**Step by Step**

- Problem
Focusing Collective Efforts and Generating Ideas for Change
Improvement Aspirations

AIM → Theory of Practice Improvement → Current Performance
What is a Theory of Practice Improvement?

A working theory of the most high leverage changes that are needed to achieve the desired outcomes.
Why develop a shared theory of Practice Improvement?

1. What we believe controls the actions we take in practice.

2. What we believe might be wrong.

3. If we are going to learn together we need to be able to represent our collective theory of improvement as it changes over time.
Tool for Articulating a Theory: Driver Diagram

Probably wrong, definitely incomplete
Tool for Articulating a Theory: Driver Diagram

Aim Statement
It seeks to answer: What specifically are we trying to accomplish?
• What will be improved?
• How much?
• By when?
• For what/whom?
Tool for Articulating a Theory: Driver Diagram

Primary Drivers
- The WHAT
- 3 to 5
- Similar grain size
- High leverage
- Based on evidence
- Within span of control
Secondary Drivers:

- The WHERE
- Specific leverage points in the system
- Norms, processes, structures, etc.
- Not always needed depending on scope of project
Tool for Articulating a Theory: Driver Diagram

Changes:
- Specific work practices or interventions
- An alteration to how work is done
If I do …

Then ...

That will impact ...

If I do ....

Aim

Driver

Change Idea
# Old DAIT Standards

<table>
<thead>
<tr>
<th>Required Components of DAIT Standards &amp; Criteria [EC Section 52055.57(c)(4)]</th>
<th>Key Concepts of District Assistance Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Governance</strong></td>
<td>Vision, mission, values, and beliefs are aligned with Essential Program Components (EPCs). District collects, analyzes and uses data to inform instruction and resource allocation. Support systems promote a coherent approach to integration of core and categorical programs.</td>
</tr>
<tr>
<td><strong>Alignment of curriculum, instruction, and assessments to state standards</strong></td>
<td>District provides and supports full implementation of SBE-adopted/aligned instructional materials including interventions, standards-based instruction, aligned assessments and professional development.</td>
</tr>
<tr>
<td><strong>Fiscal operations</strong></td>
<td>Fiscal policies and expenditures at Local Educational Agency (LEA) and schools give priority to student achievement. EPCs, alignment of core and categorical programs, and effective monitoring of expenditures focused on instructional goals.</td>
</tr>
<tr>
<td><strong>Parent and community involvement</strong></td>
<td>District communicates systematically with all stakeholders especially teachers, students and parents regarding student achievement, academics, expectations, and accountability reporting.</td>
</tr>
<tr>
<td><strong>Human resources</strong></td>
<td>All professional staff are recruited, placed, supported, and evaluated to support student learning. District provides competitive salaries, wages and benefits.</td>
</tr>
<tr>
<td><strong>Data systems and achievement monitoring</strong></td>
<td>Accurate and timely school-level data system is provided for improving instruction and allocating district and school resources. Information technology and staff development are provided.</td>
</tr>
<tr>
<td><strong>Professional development</strong></td>
<td>District supports materials-based professional development for teachers and administrators with ongoing coaching and access to content experts as needed.</td>
</tr>
</tbody>
</table>
A New Approach
Theory of Improvement 2016-2017 v1

**AIM**

Increase level of thinking students use in the task to construct learning

**DRIVER DIAGRAM**

**PRIMARY DRIVERS**

- Challenging tasks that promote student thinking

**SECONDARY DRIVERS**

- 1. Planning the task
- 2. PLC (professional learning/planning structures)

**CHANGE IDEAS**

- **1. Learning Intention/Success Criteria**
  - 1.1 Standards deconstruction in terms of thinking work
  - 1.3 Design of the tasks

- **2. Feedback**
  - 2. Questioning
  - 3. Student Outputs (oral, written)

- **3. Requirement of student discourse**

- **Feedback to teachers**

- **Feedback to teachers about challenging tasks**

- **Feedback to teachers about the strategies they use during task implementation**

- **1. Hattie’s 3 levels of feedback**
  - 2. Questions to promote student discourse

- **CEL Targeted Feedback provided by principals and ILTT Lessons Studies**
All students will construct learning through relevant and rigorous tasks that demonstrate standards based speaking, reading, writing, creating and problem solving.

**Aim**

By June 2018...

100% of students will engage in thinking that will help them learn (aligned to standards)

100% of tasks requires thinking that leads to understanding of standards-based content

**Primary Drivers** (the what)

- School & Classroom Culture
- Adult Learning
- Intentional Planning for Student Thinking

**Secondary Drivers** (the where)

- ILT
- Lesson Studies
- Site Improvement Planning
- SDCOE Coaching
- Targeted Feedback

**Change Ideas** (the how)

- A specific structure that ensures that teachers are planning for thinking
- Library of shared learning tasks for each grade that utilize thinking moves and routines
- Have students talk about their thinking with each other, 2-3 times during each lesson
- Student work is evaluated as evidence of thinking during monthly teacher collaboration
- Principals develop a strategy to get all teachers participating in a TF cycle
- Use switch framework to clearly define path, rider, elephant and explicitly plan for leading change

**Measures**

- Student surveys
- Thinking Clouds
- Student panels
- Principal/Teacher surveys for CoT
- Learning Walks

# of teachers participating in TF cycle
# of times engaged in TF cycle - change in practice based on TF cycle

*If we want to improve AIM, then we need to focus on PRIMARY, through SECONDARY, and one way to do that is CHANGE IDEA.*

"Possibly incorrect, definitely incomplete," Revised 1/29/18
Improving District’s Vetting of Programs
To ensure every student graduates and has the ability to succeed in a global community.
What are we trying to accomplish?

By June 2018, 100% of new initiatives/programs will be aligned with the district’s mission, vision, and values.
**OUSD Process to Present New Initiatives**

1. **Presenting A New Initiative**
   - Determine need & purpose for new initiative/program/project

2. **Engage stakeholders**
   - Develop plan, including:
     - Research, data (rationale)
     - # of students to be impacted
     - Additional resources needed
     - Evidence of stakeholder input
     - Cost, timeline, progress monitoring, person(s) responsible

3. **Identify link to LCAP, Mission/Vision/Instructional Focus/Values, SPSA**

4. **Share idea with Ed Services, Business Services, or Human Resources**

5. **Idea Approved**

6. **Present to Ed Services, Business Services, Human Resources, OR Cabinet**

7. **Send Back w/ Recommendations**

8. **Approve Proposal**
   - Requires regular monitoring and progress updates

9. **Deny**

10. **Send Back w/ Recommendations**

11. **Deny**
OUSD Process to Approve New Initiatives

Executive Cabinet discusses and provides feedback to staff:
- Alignment to LCAP
- Needs of school(s)
- Superintendent’s goals
- Funding availability
- Implications/impact

OUSD Staff Shares Idea with Ed Services, Business Services, or Human Resources

Send back for revision:
- Additional information
- Consult with other staff
- Share with Mutual Interest

Proposal Denied

Approves Proposal
Requires ongoing monitoring and regular updates to Cabinet

Present to Cabinet
What is our theory?
What changes have we tested that might lead to an improvement?

AIM (Part 1)
Increase the frequency of principal to teacher observations and feedback. In a 2-week period 5 principals will each be able to schedule and conduct 1 observation/feedback cycle.

DRIVERS
Events on the calendar tend to happen more consistently than those events not calendared.

Prepare for unexpected or unanticipated events

CHANGE IDEAS
Principals will calendar observation and feedback events
Develop contingency plans in the event a scheduled observation does not take place.
How might you apply this type of theory-based learning to something you are trying to improve?
Understand the Problem and the System that Produces It

Focus Collective Efforts

What's Next?

Generate Ideas for Change

Spread and Scale

Test and Build Evidence

- Fishbone diagram
- Empathy techniques
- Analysis of variation- histogram, ordered bar chart
- Research scans
- Data analysis tools (Pareto Chart, Run Chart)
- Process map
- System map

- Human-centered design techniques
- Brainstorming
- Benchmarking
- Scanning research/practice
- Expert interviews & convenings

Aim statement
- Driver diagram

Step Step Step Step Step

What's Next?

Step Step Step Step Step

Step Step Step Step Step

Step Step Step Step Step

Step Step Step Step Step
Testing and Building Evidence
The Traditional Way We Make Change

The Traditional Way

Ideas for change

Planning

Implementation of Changes

Failures that we don’t understand

Quality with reliability at scale
BANG HEAD HERE
Change Using Improvement Science

The Improvement Science Way

Quality with reliability at scale

Implementation of Changes

Very Small Scale Test

Follow-up Tests

Wide-Scale Tests of Change

Idea for change

DATA

Carnegie Foundation for the Advancement of Teaching
Tool: The PDSA Cycle

**PLAN**
- What’s your change?
- What’s your prediction?
- Plan to conduct test

**DO**
- Execute test
- Collect data, document observations

**STUDY**
- Compare results to prediction
- What did you learn?

**ACT**
- Next steps: adapt, adopt, abandon
Tool: The PDSA Cycle

ACT
- Next steps: adapt, adopt, abandon

PLAN
- What’s your change?
  - What’s your prediction?
- Plan to conduct test

STUDY
- Compare results to prediction
- What did you learn?

DO
- Execute test
- Collect data, document observations

Making your theories, assumptions, and hypotheses explicit

Revealing gaps in our understanding
A Working Theory

Group Roles

Better Math Conversations

PLAN
• What’s your change?
• What’s your prediction?
• Plan to collect data

DO
• Execute test
• Collect data, document observations

ACT
• Next steps: Adapt, adopt, abandon

STUDY/REFLECT
• Compare results to prediction
• What did you learn?
1. PLAN

2. DO

3. STUDY

4. ACT

OBSERVATIONS:
Students asked questions but not necessarily the ones on the cards.

RESULTS:
90% of students participated in group conversations.

LEARNINGS:
Not sure skeptic role and question cards lead to an increase of group conversations.

NEXT CYCLE:
Use only the skeptic role and remove the question cards. Try with different task types.

CHANGE IDEA:
Use “Skeptic Role” and Question Cards

PREDICTION:
75% of students will participate in group conversations using the question cards.

OBSERVATIONS:
Students asked questions but not necessarily the ones on the cards.
Managing multiple PDSA ramps

Adapted from API 2009
Measurement for Improvement

Design the Innovation

What is the innovation?

Innovation in Context

How can I get the innovation to work in context?

Innovation Outcomes

Did the innovation result in an improvement?

Learning Questions

Is this missing any steps or resources?

Are all components necessary?

Is anything redundant or unnecessary?

When does this fit into my schedule?

Can I get to all steps/components?

Who is this impacting?

Does this innovation result in an improvement?

Is this impacting anything else?

Do you have both leading and lagging measures?

Is the change happening consistently as designed in context?

Measurement for Improvement
Group Roles Example

Design the Innovation → Innovation in Context → Innovation Outcomes

Which roles are most impactful?
What roles are missing?
How do we teach the roles?
How to move away from the roles?
How to celebrate the roles?
When do I use the roles? Which tasks work best with these roles? What time of day is best for this group work? Should I have students work while standing?
Group Roles Example

- **Design the Innovation**
- **Innovation in Context**
- **Innovation Outcomes**

Do these roles result in better conversations?
Do these roles result in better sense making of mathematics?
Which roles result in better sense making of mathematics?
Discussion

How might you think about using these questions to test changes in your context?
Measuring “Down the River”

Where should we measure for improvement?
Learning Over Time

AIM

Primary Driver
- Secondary Drivers
  - Change
  - Change
  - Change

Primary Driver
- Secondary Drivers
  - Change
  - Change
  - Change

Primary Driver
- Secondary Drivers
  - Change
  - Change
  - Change

Primary Driver
- Secondary Drivers
  - Change
  - Change
  - Change

Test, Iterate, Refine, and ultimately Implement
Fishbone diagram
Empathy techniques
Analysis of variation - histogram, ordered bar chart
Research scans
Data analysis tools (Pareto Chart, Run Chart)
Process map
System map

Focus Collective Efforts

What's Next?

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Test and Build Evidence

Aim statement
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Human-centered design techniques
Brainstorming
Benchmarking
Scanning research/practice
Expert interviews & convenings

Change packages
Spread strategy
Diffusion theory

PDSA Cycle
Run charts
Experimental designs
Human-centered design

Understand the Problem and the System that Produces It

Focus
Collective
Efforts

What's
Next?

Generate Ideas for Change

Spread and Scale

Test and Build Evidence

Aim statement
Driver diagram
<table>
<thead>
<tr>
<th>I learned...</th>
<th>I wonder...</th>
</tr>
</thead>
<tbody>
<tr>
<td>I will try...</td>
<td>I want to know more about...</td>
</tr>
</tbody>
</table>
What questions do you have for the team?
Thursday, 2/22, 2:45-4:00pm, DeAnza III:
Learning Cycles: Using Plan-Do-Study-Act Cycles to Structure Learning (Alicia Grunow and Sandra Park, Improvement Collective)

Friday, 2/23, 8am-10am, Steinbeck Room:
SPOTLIGHT! Networked Communities Engaged in Improvement Science: How We Can Get Better at Getting Better (Paul LeMahieu, Carnegie Foundation for the Advancement of Teaching)

Looking to collaborate with improvement organizations? https://tinyurl.com/edimprove