Iterative Testing
The Model for Improvement

I. Making your theory explicit

II. Testing changes (theory) and building knowledge

What are we trying to accomplish?

How will we know that a change is an improvement?

What change(s) can we make that will result in improvement?
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
PDSA Activity

- **What are we trying to accomplish?**
  - Develop process where everyone in your group touches the ball once in the shortest amount of time.

- **How will we know that a change is an improvement?**
  - Outcome Measure: (Decrease in) Number of seconds

- **What changes can we make that will result in an improvement?**
  - Decide as group change you want to test through PDSA
PDSA Activity

- **Basic quality criteria**
  - Ball must start and end with the same person
  - Ball must touch each person in the process
  - Specific order of persons must be maintained
  - Start process over if ball is dropped or order is not maintained
  - Starting person initiates the process by saying “Go!”

- **Establish baseline data**
  - Predict how long process will take
  - Run the process one time
  - Write down baseline data and report out
Complete a PDSA cycle to test some ideas to improve the cycle time of the process. Document on form.

- **Plan**: What change are you going to test? How long do you think the process will take (make a prediction)?
- **Do**: Execute the plan
  - Run the process one time with the change in place
  - Check for compliance with quality criteria
  - Record cycle time data
- **Study**: What happened? What did you learn? Anything surprising?
- **Act**: Given what you learned, what ideas do you have for the next cycle?

Run another PDSA
Debrief

- How many more PDSA cycles would you need to complete improvements on this process?
- What insights about testing did you have?
“We are eating our young and nobody seems to care.”

Robert Hughes, President
New Visions for Public Schools
The BTEN Learning System

- Theory of Practice Improvement
- Standard Work Processes (Change Ideas)
- Quality with Reliability At Scale
- Practical Measurement

p. 116, Improving (draft)
To increase the number of new teachers judged efficacious and improve their retention rates.

BTEN Driver Diagram
(Theory of Practice Improvement)

**AIM: What do we want to accomplish?**

**Primary Drivers**

- Hiring and placement system
- School-based professional community
- Feedback that supports improvement
- Relationship between principals and NTs
- Professional development for NTs
To increase the number of new teachers judged efficacious and improve their retention rates

AIM: What do we want to accomplish?
Aim
Improve the quality of feedback provided to beginning teachers in 31 schools by May 2015.

BTEN Change Package

Big Dot Aim
Teacher Efficacy and Retention

Feedback that supports improvement
Relationship btw principals and NTs
Professional development for NTs

Primary Drivers

Hiring and placement system
School-based professional community

Secondary Drivers

Feedback
Coordination
Support

Changes

2 week feedback & support process
Roles
Conversation protocols
Coordination meetings
Online tool to track feedback & support
BTEN Learning System

Theory of Practice Improvement

Standard Work Processes (Change Ideas)

Quality with Reliability At Scale

Practical Measurement

p. 116, Improving (draft)
BTEN Change Package

Big Dot Aim
Teacher Efficacy and Retention

Aim
Improve the quality of feedback provided to beginning teachers in 31 schools by May 2015.

Primary Drivers
- Hiring and placement system
- School-based professional community
- Feedback that supports improvement
- Relationship btw principals and NTs
- Professional development for NTs

Secondary Drivers
- Feedback
- Coordination
- Support

Changes
- 2 week feedback & support process
- Roles
- Conversation protocols
- Coordination meetings
- Online tool to track feedback & support

Principal Time
BTEN Measurement System

**Ultimate Outcomes**
- Annual Retention/Effectiveness
- Engagement & Self-Efficacy
- Burnout
- Work Intentions

**Process**
- Average number of days between conferences
- Number of teachers waiting more than 14 days

**Driver**
- Value of feedback
- Consistency of feedback
- Manageability of Feedback
- Trust with feedback provider

**Balancing**
- Principal Time
Number of teachers waiting 14 or more days since last feedback conversation

School D (large)

School F (medium)

School L (medium)

School M (medium)
BTEN Learning System

Theory of Practice Improvement

Standard Work Processes (Change Ideas)

Quality with Reliability At Scale

Practical Measurement

p. 116, Improving (draft)
Learning Your Way into Your System

Stage 1
(Unknown)

Stage 2
(Known)

Stage 3
Quality reliably at scale
A Current Practice: “Disrupt the System”
Implement Fast, Learn Slow

<table>
<thead>
<tr>
<th>Current Situation</th>
<th>Resistant</th>
<th>Indifferent</th>
<th>Ready</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low confidence:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited Capacity</td>
<td>Very Small Scale Test</td>
<td>Very Small Scale Test</td>
<td>Very Small Scale Test</td>
</tr>
<tr>
<td>Good base Capacity</td>
<td>Very Small Scale Test</td>
<td>Very Small Scale Test</td>
<td>Small Scale Test</td>
</tr>
<tr>
<td><strong>High confidence:</strong></td>
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<td>Small Scale Test</td>
<td>Large Scale Test</td>
<td>Implement</td>
</tr>
</tbody>
</table>
GOAL: Structured feedback conversation between principals and beginning teachers

Task: Design a 7-step conversation protocol for principal to use with beginning teacher.
Learning your way into improvement

Seeing Organizational Complexity

Seeing Task Complexity

1 school
1 administrator

5 schools
Many administrators

Entire vertical team
A more diverse group of administrators

What it takes to get it to work

How to get it to work across multiple contexts

What support processes are needed?

How to integrate into the system

District Wide
All administrators

Learning from Data Along the Way

©IHI 2012
Working in Parallel on Multiple Change Ideas

Two Week Feedback & Support Process
Roles
Conversation Protocols
Coordination Meetings
Online Tool to Track Feedback and Support
Building Evidence that a Change is an Improvement

**Figure 7.1. Degree of Belief When Making Changes to Improve.**

- **High**
- **Moderate**
- **Low**

- **Developing a change**
- **Testing a change cycle 1, cycle 2, ...**
- **Implementing a change**

A successful change

Change still needs further testing

Unsuccessful proposed change

*Improvement Guide, 2009, p. 144*
BTEN Change Package

Increase new teacher efficacy and retention

Primary Drivers
- Hiring and placement system
- School-based professional community
- Feedback that supports improvement
- Relationship between principals and NTs
- Professional development for NTs

Secondary Drivers
- Feedback
- Coordination
- Support

Changes
- 2 week feedback & support process
- Roles
- Conversation protocols
- Coordination meetings
- Online tool to track feedback & support
A Note about Evidence

- Traditional research: What works?
  - Evidence-based practice

- Improvement science: How can we replicate positive outcomes with quality reliably at scale?
  - Practiced-based evidence