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Isolated on a Hill of Beans: *Disciplined Inquiry* Might Help?

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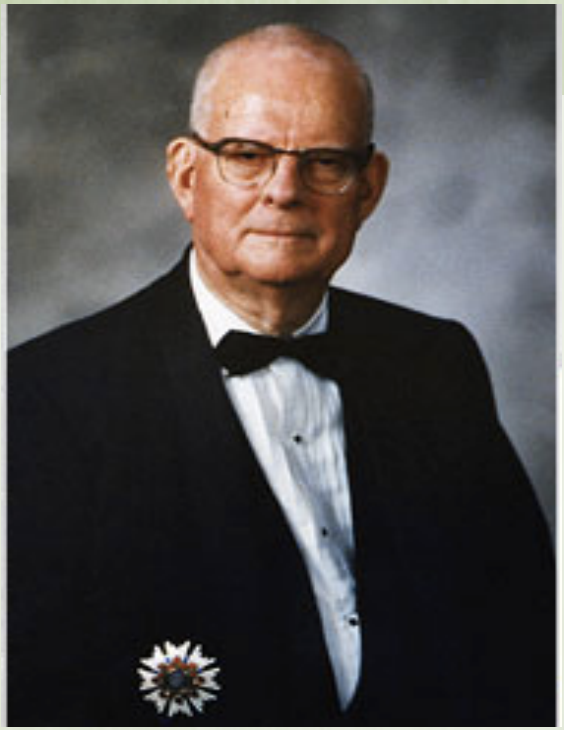
UCLA & Carnegie Foundation For the Advancement of Teaching

AACTE, 2/27/2015

Education reform is "miracle goals without methods."

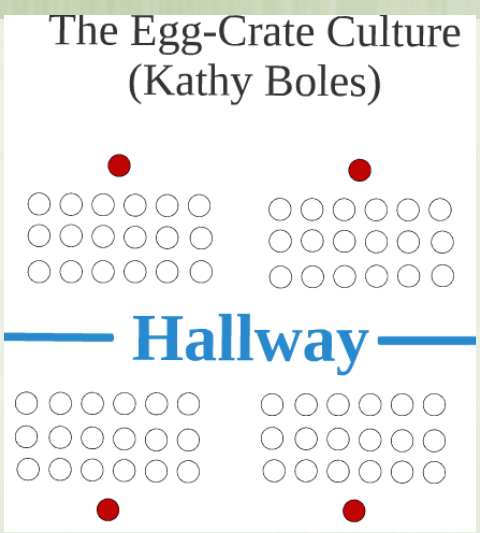
-W. Edwards Deming



- Quote 1991 about Goals 2000
- NCLB, "all children proficient by 2014."
- Is the next chapter the Common Core?
- If we continue to do what we have always done, we will continue to get what we have always gotten.
- We have to find a better way to accelerate learning in and through practice to improve.

Isolation and a Hill of Beans

- Shared focused
  - Isolated practice*
  - Few shared referents
  - No common measures of practices and micro-markers of progress
  - No common vocabulary
  - No standard work
- Accumulation
  - Little sustained learning
  - Little adaptive integration



*Lortie 1975, Boles & Troen 2002

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Knowledge that Supports Change

Subject Matter Knowledge

Scientific knowledge, Professional knowledge, Practical knowledge, Powerful tools

Profound Knowledge

Appreciation of systems, Understanding variation, Organizational knowledge, Local contexts

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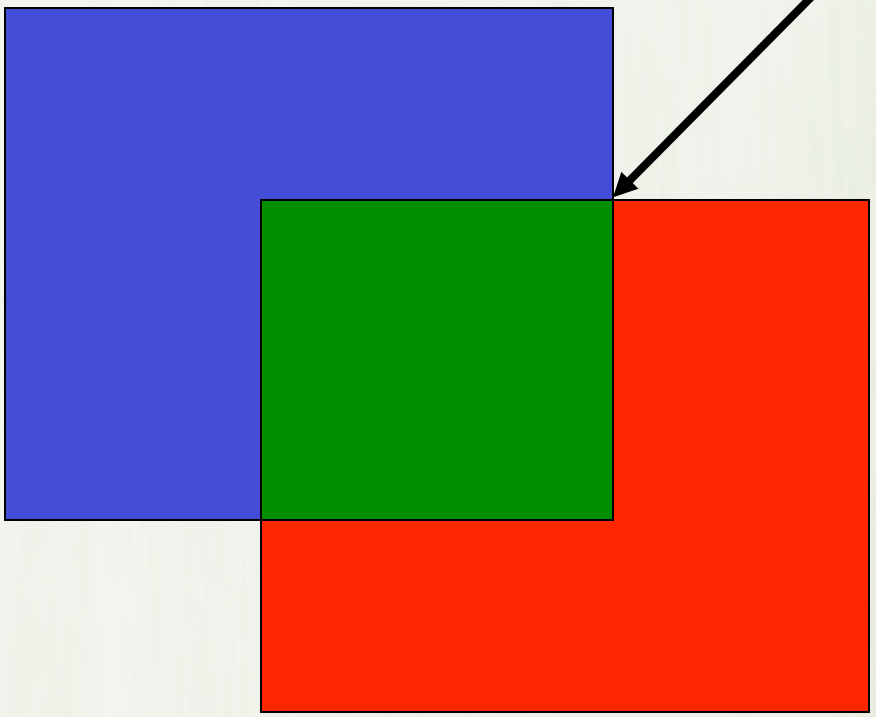
Knowledge that Supports the Processes of Improvement



***Improvement*: Combines subject matter knowledge and profound knowledge in creative and disciplined ways to develop reliable change**

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V. Accelerate Improvement: Embrace Disciplined Inquiry

- The Romance of the Silver Bullet
  - We move quickly to large scale implementation, but…
- We typically don't know whether:
  - We can make these ideas work at all;
  - We have capacity and will to determine if execution at scale is possible.
  - If we can get locally generated evidence from practice
- Quick, minimally intrusive, empirical warrants for progress
  - Mantra: *Learn Fast, Fail Fast, Improve Fast!*
- One form of localizable disciplined inquiry is the PDSA cycle

Scaffolding Improvement: Filling the Knowledge Gaps

- Awareness gap
  - Declarative knowledge
  - Identifying quality ideas
  - Assessment of promise

- Knowing – Doing Gap
  - Execution know-how
    - What to do next
    - What is necessary, what is optional
  - Adaptive Integration: How interventions change by contexts
  - Depends on professional knowlegde

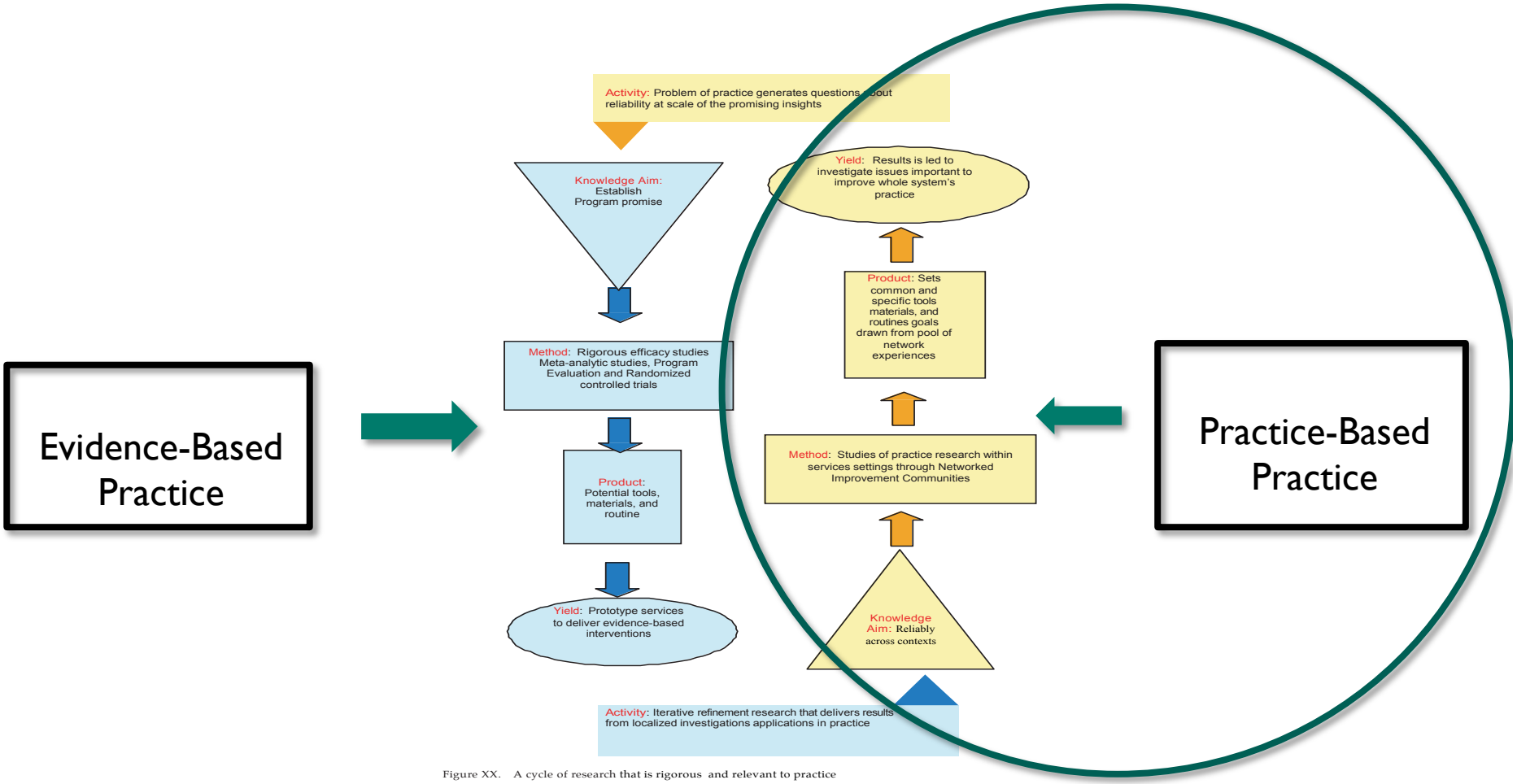


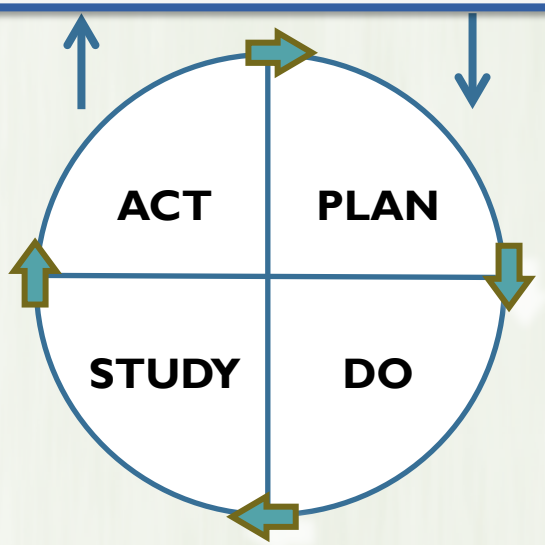
Figure XX. A cycle of research that is rigorous and relevant to practice

The Model for Improvement: Building Practiced-Based Evidence

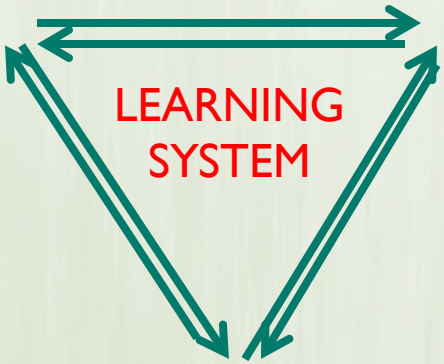
What are we trying to accomplish?

How will we know that a change is an improvement?

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



I. Making your theory explicit



II. Testing changes (theory) and building knowledge

@2009 API

I. Driver Diagram:

What changes might lead to an improvement?

Barriers?

Primary Driver **M**	• Secondary Driver • Secondary Driver • Secondary Driver
Primary Driver **M**	• Secondary Driver • Secondary Driver • Secondary Driver • Secondary Driver
Primary Driver **M**	• Secondary Driver • Secondary Driver
Primary Driver **M**	• Secondary Driver • Secondary Driver • Secondary Driver

What are we trying to accomplish?

AIM **M**

MEASURES:

How do we know if a change is an improvement?

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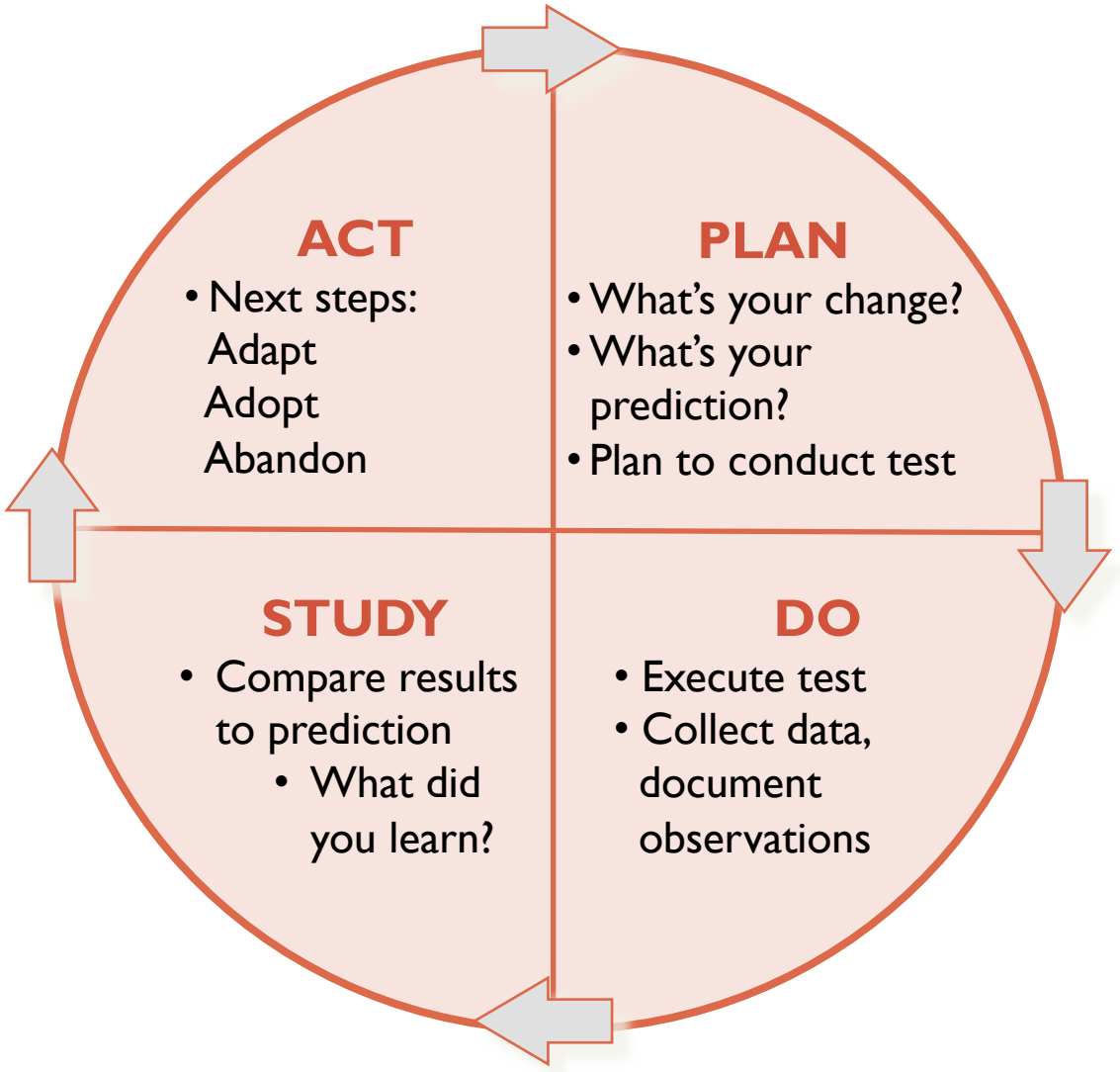
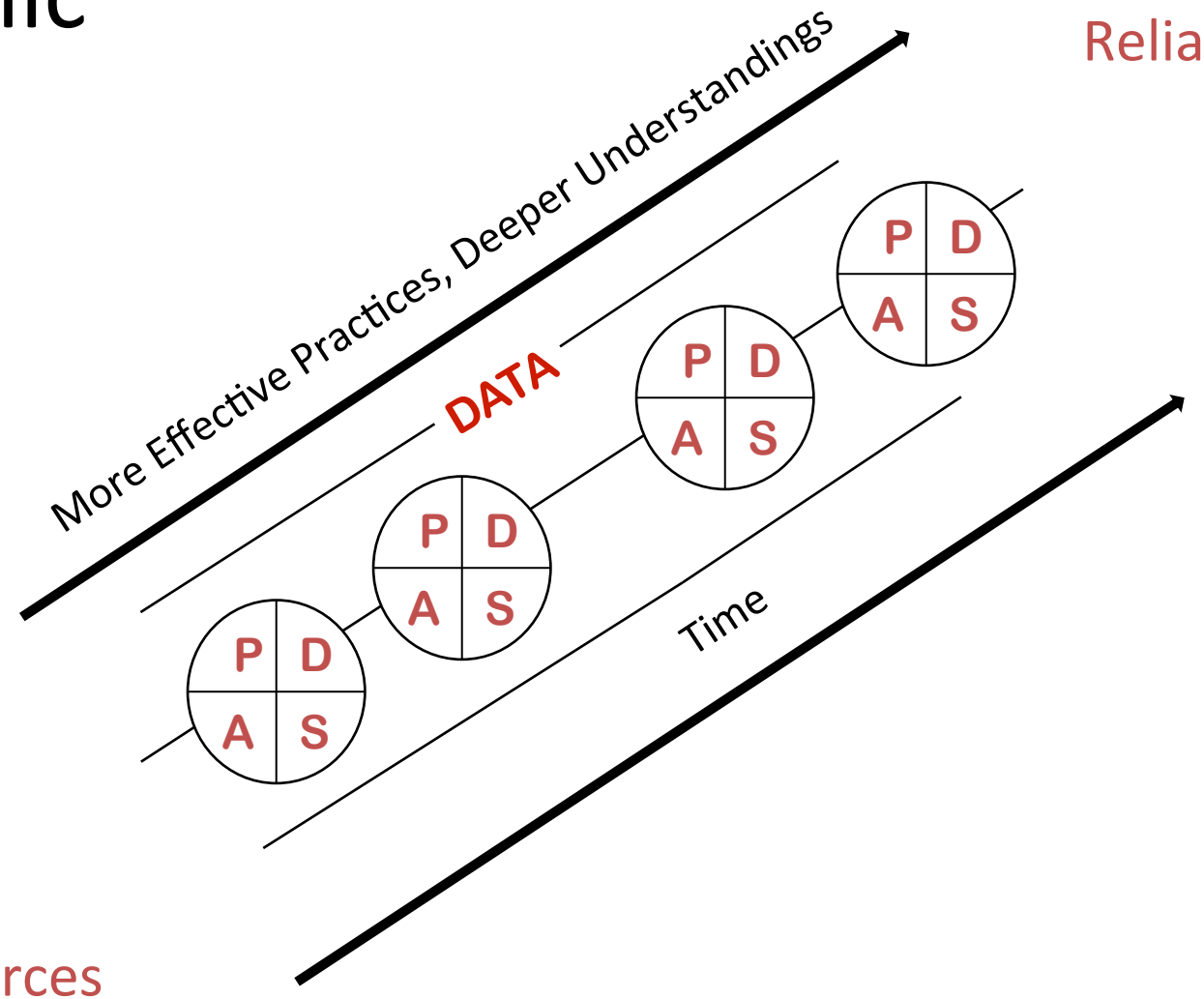
II. The PDSA Cycle



A Developmental Dynamic

Aiming for Efficacy with Reliability



Hunches
Theories
Ideas
Initiating Resources

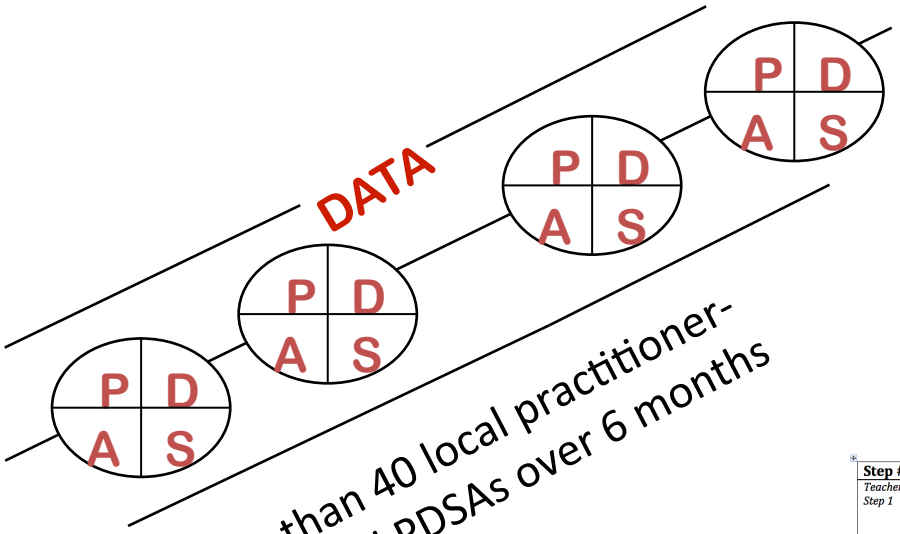
Case Example 1: Reference to Text

- *Local school community in LA wanted to improve students ability to make reference to Text*
- ***Reference/support from text*:** This is a measure of how well references to text details are used to support statements in the essay. A text detail is a quotation, paraphrase, or any other reference to information and ideas in the texts provided.

Annotation Routine – Draft 1

	response that is accurate. If students disagree with Ms. Herrera's annotation, they can put a ✪ star next to an annotation that they want Ms. Herrera to discuss.	are checking their understanding as well.	
Student Step 15	Students then pass the peer-reviewed science texts to the front of the classroom and Ms. Herrera gathers the checked texts.	Here the aim is for Ms. Herrera to have data for checking predictions and analyzing results.	Herrera: How will we be keeping the student data?
Student Step 16	Ms. Herrera then discusses the argument and supporting evidence in the science text and brings the discussion back to the big question of the day.	Here, the aim is to reconnect students to the big question (the overall content focus of the day).	
Teacher step 2	Ms. Herrera makes predictions about students' performance. Her measures might involve: a) the amount of time it	Here, the routine can only get better if there are set of expectations about how it will perform. When it fails to perform, as expected, it is an opportunity to	Herrera: Should I stick to a predicted amount of time it will take the students to finish regardless if they finish or

Kimberley Gomez 9/8/13 1:24 PM
Comment [5]: Love this



Step 15	Ms. Herrera puts her annotated science text on the overhead. Ms. Herrera reviews the annotated text going through her master annotations step by step and **discussing the rationale for the annotations with the students.**	Here the master annotation is provided as a model for students.	
Student Step 16	If students disagree with Ms. Herrera's annotation, they can put a ✪ star next to an annotation that they want Ms. Herrera to discuss.		
Student Step 17	Students then pass the peer-reviewed science texts to the front of the classroom and Ms. Herrera gathers the checked texts.	Here the aim is for Ms. Herrera to have data for checking predictions and analyzing results. The data will be displayed in the form of a spreadsheet that will be built for this purpose.	
Student Step 18	Ms. Herrera then **discusses the argument and supporting evidence in the science text (making connections to the ways**	Here, the aim is to reconnect students to the big question (the overall content focus of	

Step #	Routine Step Activity		
Teacher Step 1	Ms. Herrera reviews the annotat routine and reads through the te students will be reading. (a) She identifies the annotation steps st will use (e.g., main and supporti headings and subheadings). (b) decides what the essential quest be for the day. Choosing the esse question will involve determining the intersection of the goal for today's content learning, and the thrust of the day's text (e.g., to introduce constructs, to build chapter vocabulary, to deliver specific content like scientific concepts, facts, or patterns, to model a procedure or process). The essential question must be applicable for the entire reading.		
Student Step 1	Ms. Herrera hands each student an annotation poster to keep in their	The aim here is to ensure that students have an available	

Step 13	science text on the overhead.	is provided as a model for students. **Comments:** *Students need an annotated copy of the master because it is difficult for them to see the annotated copy on the projector.*		
Student Step 14	Each student then checks h/her tablemate's annotations with a check mark ✓ for each response that is accurate. If students disagree with Ms. Herrera's annotation, they can put a **o** star next to an annotation that they want Ms. Herrera to discuss.	Here, the aim is two-fold. First, students have their papers checked by a peer. Second, in checking a colleague's annotations, students are checking their understanding as well.	*Tr ga. Tr Fi an got back peer reviewed readings and went back through it to mark with a * anything they wanted Ms. CH to discuss. This incl. points of disagreement and Qs.*	M. Lozano 9/16/13 3:07 PM **Comment [2]:** If they disagree with hers If they annotated something that was not included in Ms. Herrera's annotation M. Lozano 9/17/13 2:50 PM **Comment [3]:** Need to think about this as two steps perhaps? When do students have an opportunity to revisit their own annotations? Contest Herrera's annotation and also opp to question/reflect on their own annotations
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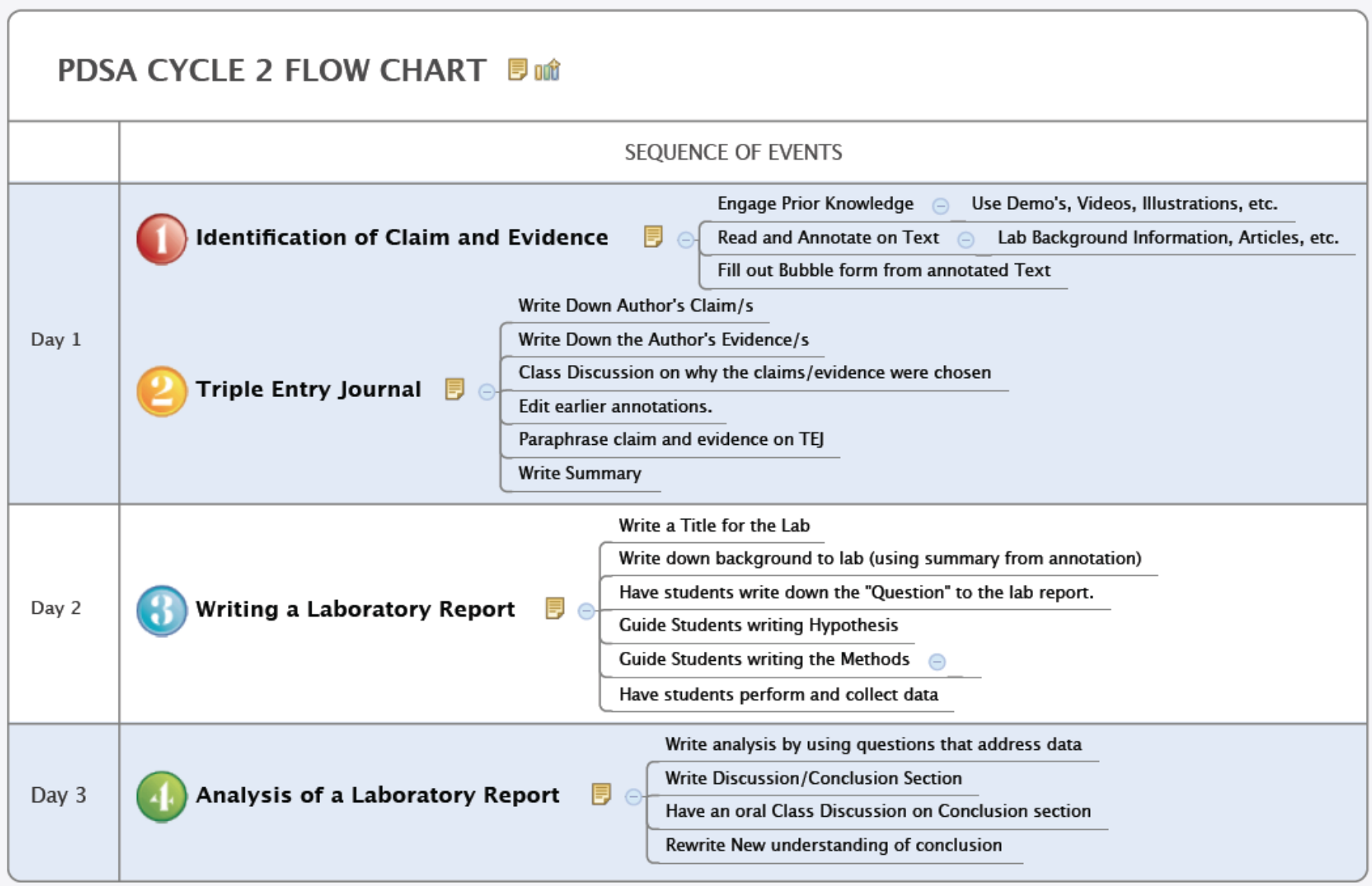
Professional Growth

- Building will
- Professional know-how

Engagement in Disciplined Inquiry

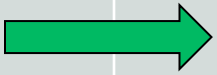
2013-2014	Engagement
Sep 2013	• Worked with Biology teacher to (1) design and (2) test a instructional routine • .
Oct – Feb 2014	• Science team (*n*=3) try routine in classrooms and arrive at a stable routine. 44 PDSAs
Feb2014	• Teachers arrive a 3-Day Instructional Cycle and focus PDSA work on Day 1 (parts 1 and 2)

Standard Work:3-Day Instructional Cycle



Scores on CREEST ILA Reference to Text

Reference to Text	2012	2013	2014
Students with a score of '1'	68% n=217	63% n=223	29% n=98
Students with a score of '2' and higher	32% n=102	37% n=131	71% n=242



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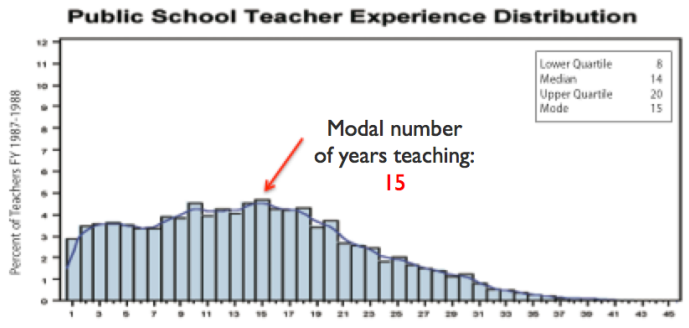
Case Example 2: Beginning Teacher Effectiveness (BTEN)

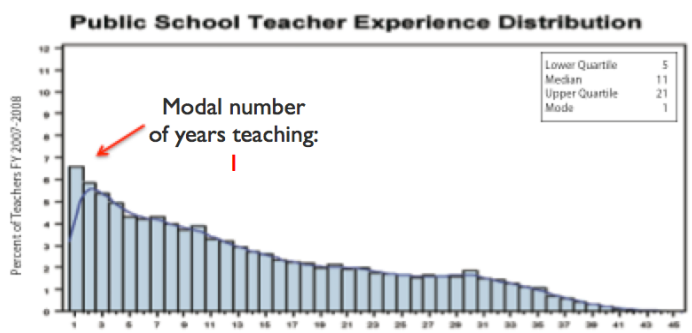
Aim:

To increase the number of new teachers judged efficacious and improve their retention rates

1987-1988



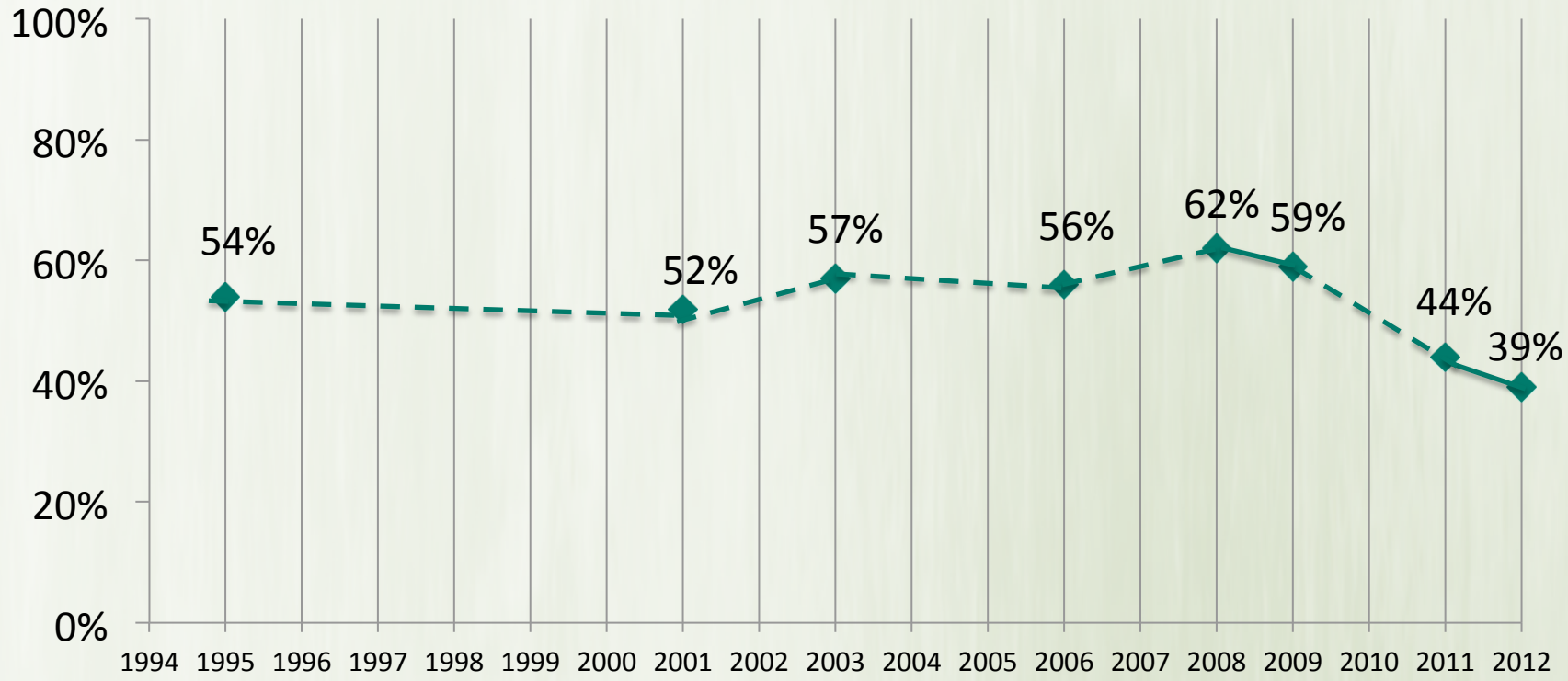
2007-2008



Source: original analyses of the Schools and Staffing Survey by Richard Ingersoll and Lisa Merrill, University of Pennsylvania.

National Context: MetLife Survey (2012)

Figure 3.3 – Teacher Job Satisfaction Through the Years (% Very Satisfied)



Variation and Room for Improvement 2014-2015

	n	1	2	3	4
Middle School	118	29	58	28	3
Biology	114	54	41	18	1
Chemistry	108	15	59	32	2

- All student groups to achieve a "proficient" status within "Band D."

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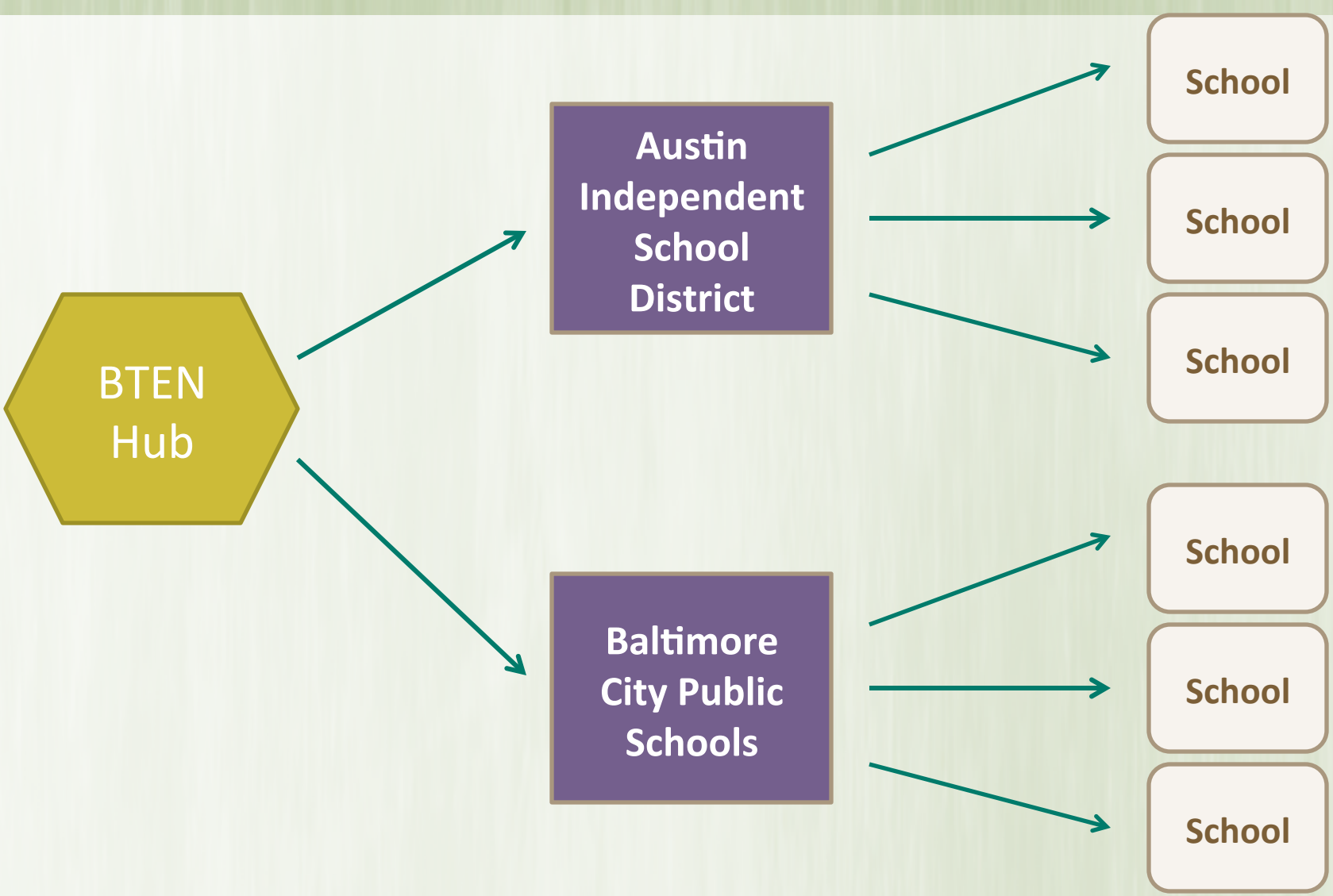
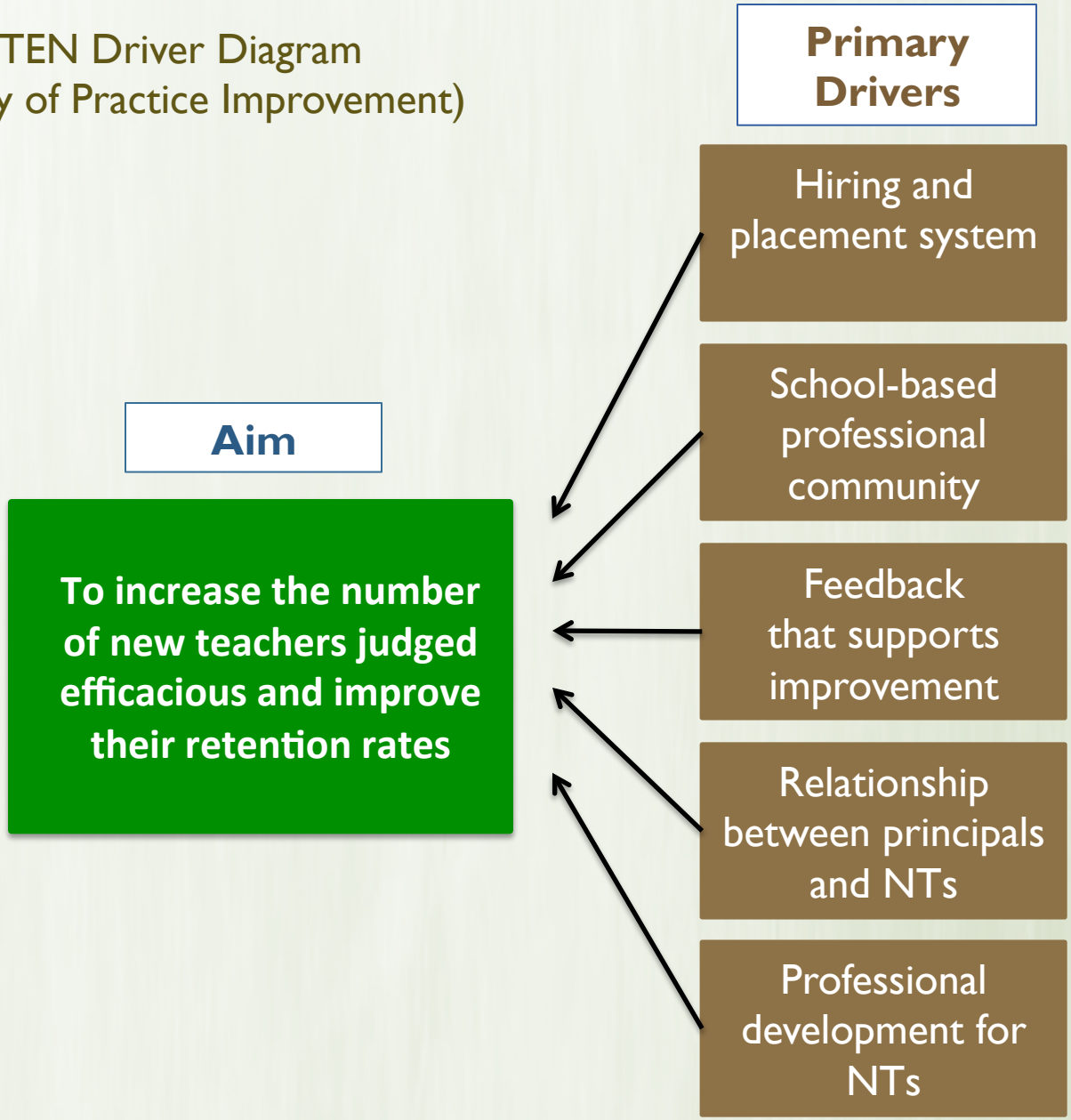
BTEN Organizational Structure



BTEN Driver Diagram
(Theory of Practice Improvement)



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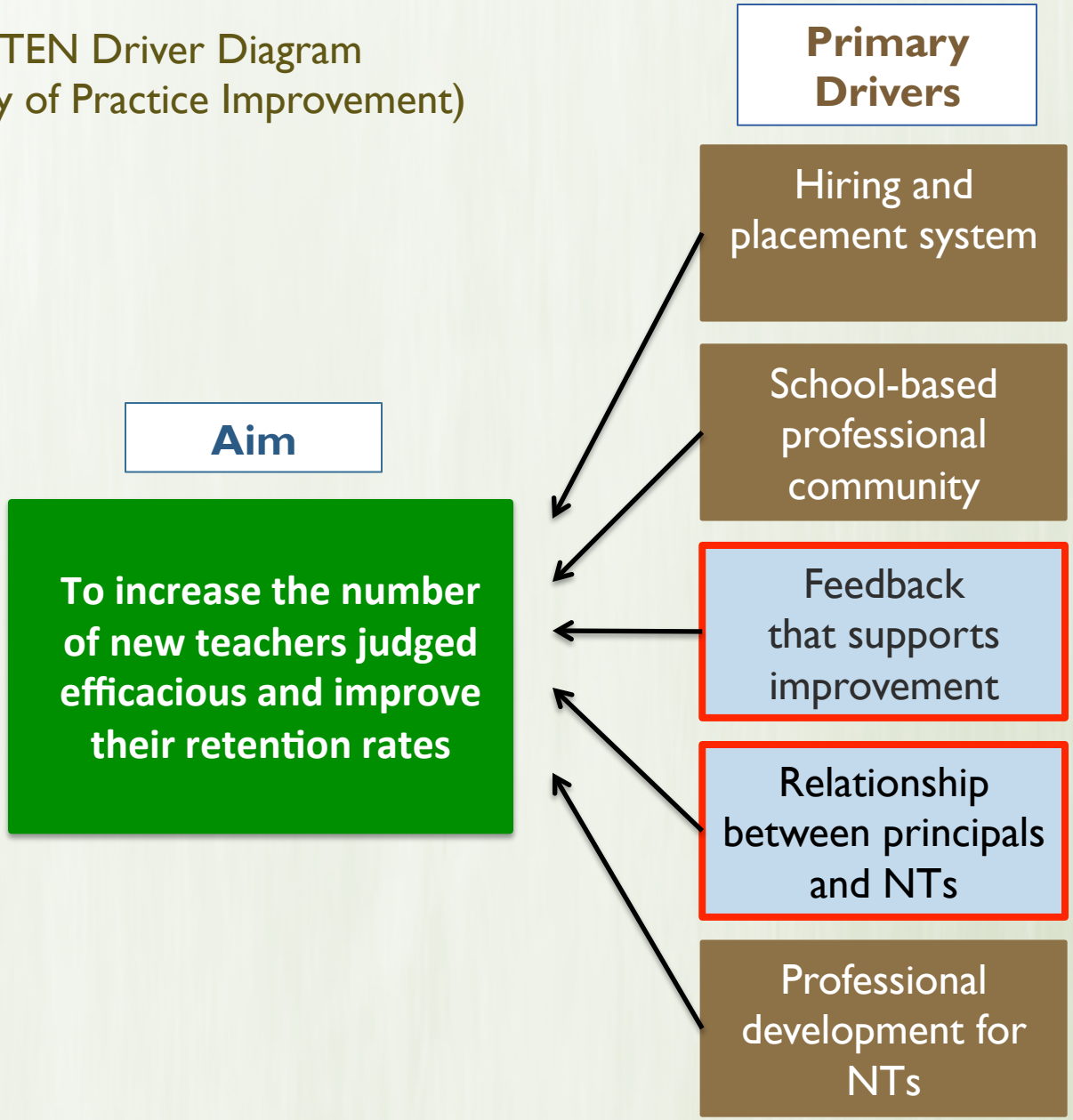
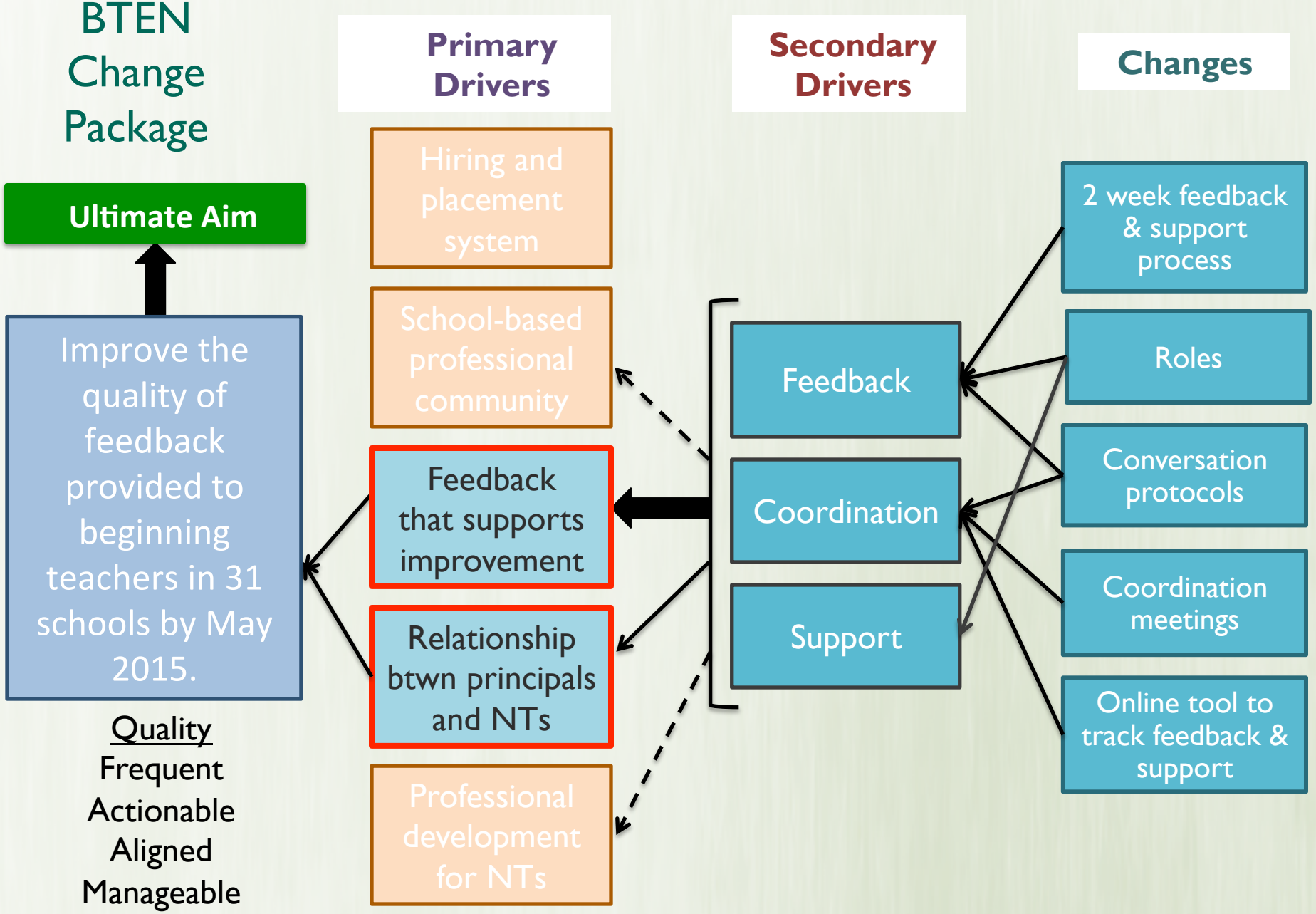


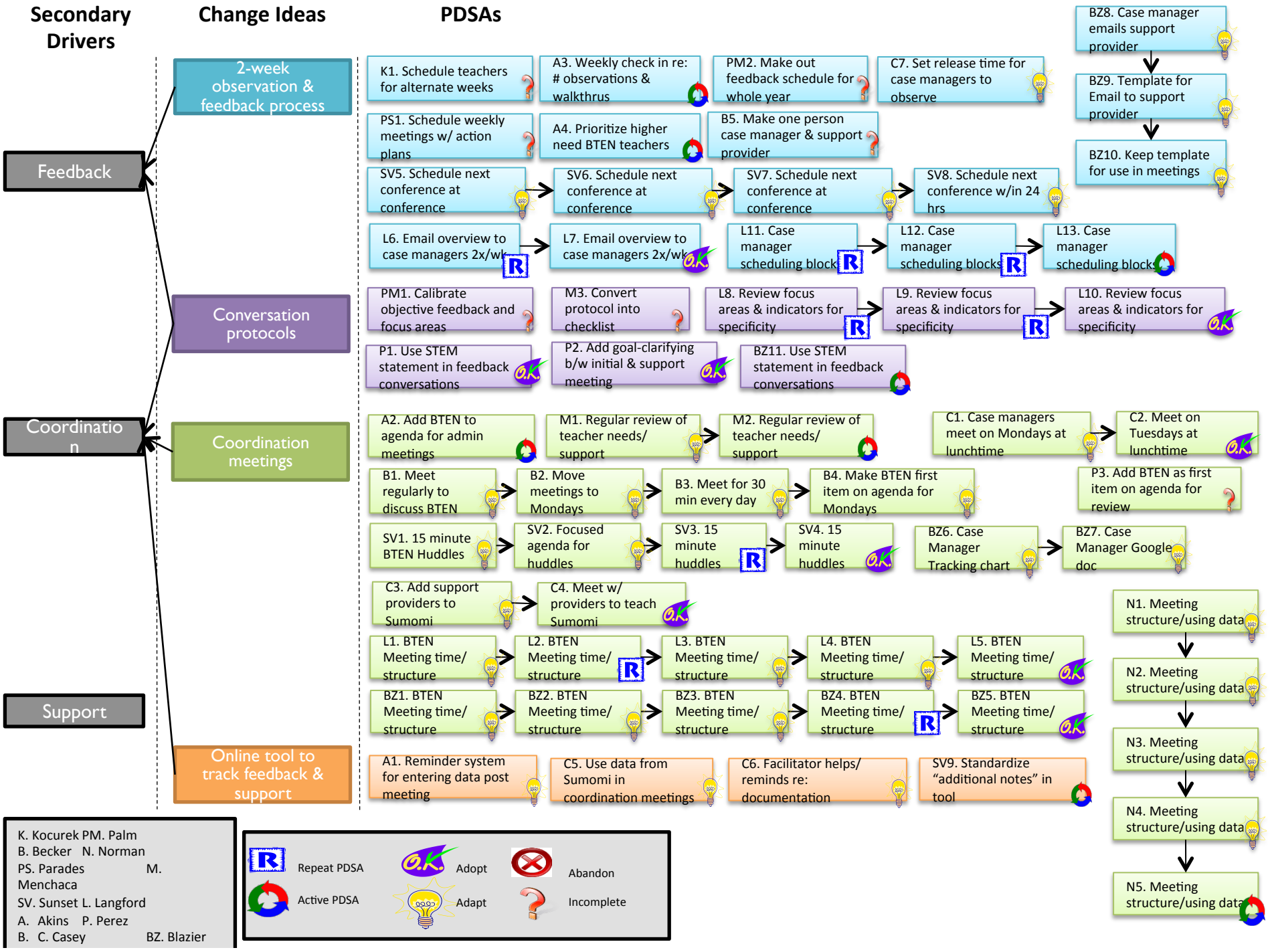
BTEN Change Package

Ultimate Aim

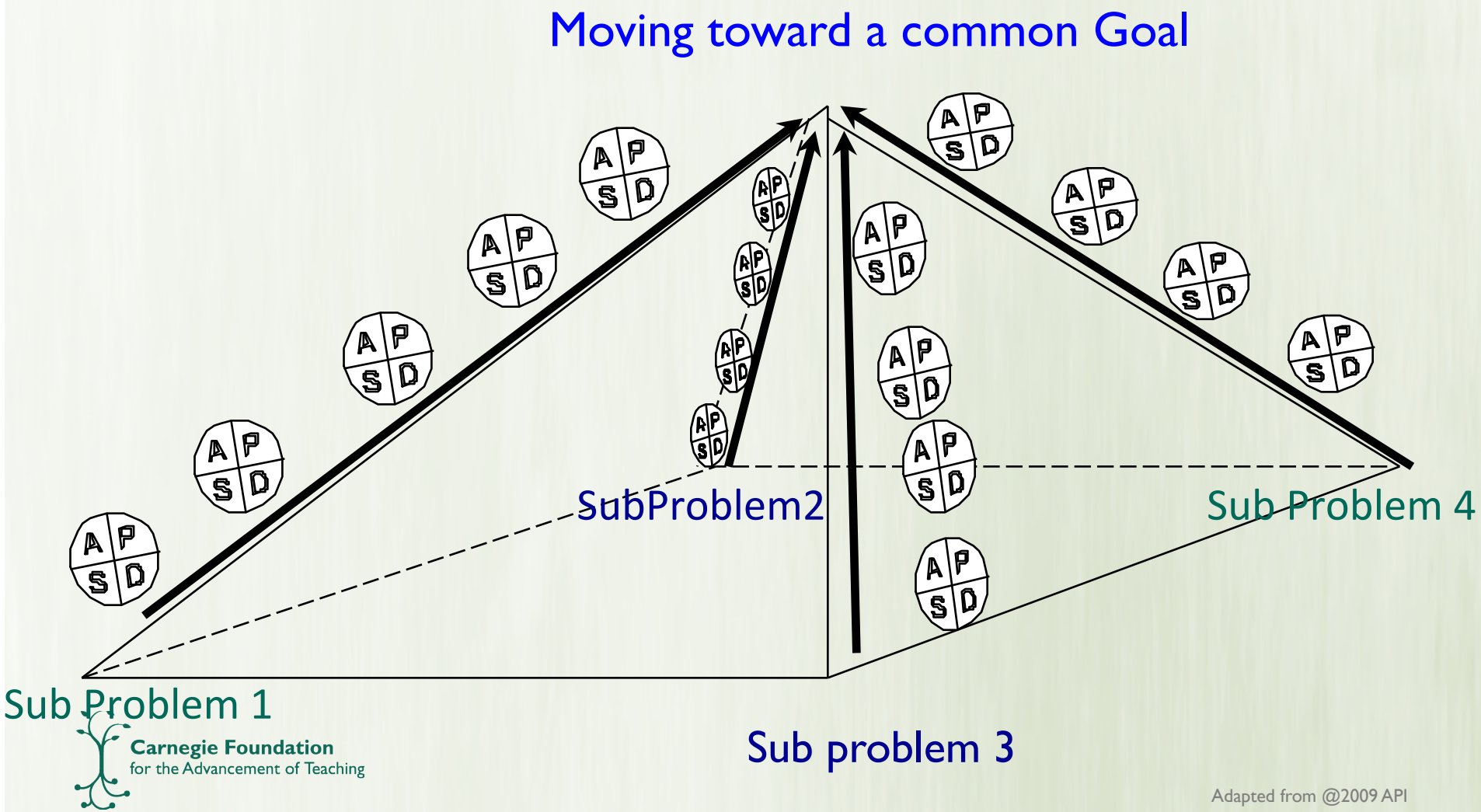
Improve the quality of feedback provided to beginning teachers in 31 schools by May 2015.

Quality
Frequent
Actionable
Aligned
Manageable
Builds trust




Secondary Drivers
Change Ideas
PDSAs
Feedback
Coordination
Support
2-week observation & feedback process
Conversation protocols
Coordination meetings
Online tool to track feedback & support
K1. Schedule teachers for alternate weeks
A3. Weekly check in re: # observations & walkthrus
PM2. Make out feedback schedule for whole year
C7. Set release time for case managers to observe
PS1. Schedule weekly meetings w/ action plans
A4. Prioritize higher need BTEN teachers
B5. Make one person case manager & support provider
SV5. Schedule next conference at conference
SV6. Schedule next conference at conference
SV7. Schedule next conference at conference
SV8. Schedule next conference w/in 24 hrs
L6. Email overview to case managers 2x/wk
L7. Email overview to case managers 2x/wk
L11. Case manager scheduling block
L12. Case manager scheduling blocks
L13. Case manager scheduling blocks
BZ8. Case manager emails support provider
BZ9. Template for Email to support provider
BZ10. Keep template for use in meetings
PM1. Calibrate objective feedback and focus areas
M3. Convert protocol into checklist
L8. Review focus areas & indicators for specificity
L9. Review focus areas & indicators for specificity
L10. Review focus areas & indicators for specificity
P1. Use STEM statement in feedback conversations
P2. Add goal-clarifying b/w initial & support meeting
BZ11. Use STEM statement in feedback conversations
A2. Add BTEN to agenda for admin meetings
M1. Regular review of teacher needs/ support
M2. Regular review of teacher needs/ support
C1. Case managers meet on Mondays at lunchtime
C2. Meet on Tuesdays at lunchtime
B1. Meet regularly to discuss BTEN
B2. Move meetings to Mondays
B3. Meet for 30 min every day
B4. Make BTEN first item on agenda for Mondays
P3. Add BTEN as first item on agenda for review
SV1. 15 minute BTEN Huddles
SV2. Focused agenda for huddles
SV3. 15 minute huddles
SV4. 15 minute huddles
BZ6. Case Manager Tracking chart
BZ7. Case Manager Google doc
C3. Add support providers to Sumomi
C4. Meet w/ providers to teach Sumomi
L1. BTEN Meeting time/ structure
L2. BTEN Meeting time/ structure
L3. BTEN Meeting time/ structure
L4. BTEN Meeting time/ structure
L5. BTEN Meeting time/ structure
BZ1. BTEN Meeting time/ structure
BZ2. BTEN Meeting time/ structure
BZ3. BTEN Meeting time/ structure
BZ4. BTEN Meeting time/ structure
BZ5. BTEN Meeting time/ structure
A1. Reminder system for entering data post meeting
C5. Use data from Sumomi in coordination meetings
C6. Facilitator helps/ reminds re: documentation
SV9. Standardize "additional notes" in tool
N1. Meeting structure/using data
N2. Meeting structure/using data
N3. Meeting structure/using data
N4. Meeting structure/using data
N5. Meeting structure/using data
K. Kocurek PM. Palm
B. Becker N. Norman
PS. Parades M. Menchaca
SV. Sunset L. Langford
A. Akins P. Perez
B. C. Casey BZ. Blazier
Repeat PDSA
Active PDSA
Adopt
Adapt
Abandon
Incomplete

Communities of PDSAs



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Adapted from @2009 API

Summing Up: Disciplined Inquiry In Improvement Science

- Builds constitutively like more traditional social science inquiry
- Focuses more on external validity for successful repliocation: practice-based evidence
- Emphasis on working (provisional) theory + common iterative analytic disciplines
- Promising methodology for improving educational practice and outcomes --aiming for **efficacy** with **reliability**

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It is all about accelerating how we learn
in and through practice to improve.