Activity: Introduction to Plan-Do-Study-Act Cycles *(45 minutes)*

Overview

This activity is meant to guide a team through the exploration of a Plan-Do-Study-Act (PDSA) cycle. Through discussion and application, participants will scope a change idea and plan a first test using the PDSA tool.

Objectives

Participants will:

- develop an understanding of a Plan-Do-Study-Act (PDSA) cycle
- scope a change idea to the "right" size for a test
- complete a PDSA form to prepare to test a first change idea

Facilitation Notes

1. Introduction and Framing (3 minutes)

- Welcome participants and thank them for their work and patience in getting to this point.
  - Explain that the analysis of the problem they did to create the fishbone diagram and the possible solutions they explored while creating the driver diagram were part of the preparation for this step, the PDSA cycle.
  - Explain that the PDSA cycle is the heart of improvement science and will be used in the majority of their team meetings going forward.

2. Background (5 minutes)

- Distribute copies of the *Participant Handout* (page 95 of this chapter).
  - Read the goal for the activity.
  - Ask the participants to read the philosophy section of their handout and spend one minute reflecting on it with a partner.
- If participants need framing, you may ask if they have ever experienced the implementation of a large-scale change that didn't live up to expectations or, alternately, if they have ever been involved in piloting a change on a small scale.
- Tell participants that they are going to approach the change idea they developed in the previous session with this philosophy in mind.

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- Show the change idea to the participants (it doesn't matter whether it is written on a white board, on chart paper, or printed and distributed, but participants need to know and reference it).

3. Scoping a Test (5 minutes)

- Ask participants to read the section of their handout titled *The Scope of Tests* on their own.
  - When they finish, ask them to use their change idea to answer the discussion questions (either as a whole group or in pairs).
- If you worked in pairs, quickly share out to the whole group.
- If there are any doubts that the change idea meets the criteria, you should discuss and consider ways to modify the change idea. Don't stop until the whole group is satisfied that the change is small enough. This may require a strong facilitator to push back on one or more areas of the bullet points. Even and especially if the team has other preferences, it is critical that the change is sufficiently small.

4. Example Change Idea (3 minutes)

- Tell participants that they are going to look at an example of a change idea to get an idea of what they can look like.
  - Explain that the example is taken from a real school where the improvement team wanted to find a way to increase students' ability to persist through difficulty. Three teachers at the school planned to have one-on-one conversations with a student to elicit barriers that prevented the student from reaching a goal and strategies the teachers could use to overcome those barriers.
- Tell participants that they will be looking at the conversation protocol the teachers prepared to give to the students during these conversations and the data-collection rubric they used to measure the success of the conversation.
  - Distribute the example documents (page 97 of this chapter) and have participants read them.
- Ask participants to share their reactions.
  - If these points don't come up in their reactions, elicit or encourage them to notice that the example: a) fits the scope of a good test; b) seems feasible to complete in one week; and c) includes a measurement scale that is practical but potentially informative.
- Offer participants a chance to ask any final questions about change ideas.

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5. Exploring a Blank PDSA Document (5 minutes)

- Tell participants that now they will be looking at the PDSA form, the document that they will be working from during their future tests.
- Distribute the blank PDSA form or ask them to turn over their handout if you distributed double-sided copies (page 98 of this chapter).
- Explain that while the document may seem dense at first, it is easy to get the hang of. Walk them through the sections of the document one by one.
  - Direct their attention first to the top four rows, where they will be logging basic information about the cycle. Tell them that this basic information collection will become important to keep track of progress after several tests have been run and when successful changes are scaled to more students and classrooms.
  - Next, move on to the box labeled **1. PLAN.** Explain that this section is to be filled in prior to each test. The "Details" box is a space to record all the practical details about the test that they are planning *before* they implement it. This section also provides a place to align the questions they would like to answer with their predictions about what they think will happen and a choice of data they will collect to know if it did.
  - Box labeled **2. DO** is for recording observations, thoughts, and data during and immediately after the test is completed. Additional notes about what happened should be collected here. The data itself can be collected elsewhere and summarized on the PDSA form if necessary.
  - Box labeled **3. STUDY** is to facilitate reflection on the results of the test. Point out that they will fill out the STUDY section while looking at the data with their team. It involves looking back at each question, prediction, and the corresponding data to discuss how the change worked. The discussion of these rows should lead to a summary of what the team learned, to be written here.
  - Box labeled **4. ACT** follows the completion of box 3 and allows for the team to quickly decide on the next steps to be taken. Depending on the result of this test, they might abandon the idea, adapt it based on what they learned, or eventually adopt it on a wider scale.

6. Exploring the Example PDSA Document (5 minutes)

- Tell participants that to help clarify how this looks in practice, they will be looking at the PDSA form that corresponds to the example change idea they saw earlier.
- Distribute the example PDSA form (page 99 of this chapter).
  - Ask participants to work in pairs for three minutes to read through the example PDSA and make sense of how this test went.
  - Return to the larger group and invite the participants to share impressions of the document and the example.

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7. Preparing Their Own PDSA Document (10 minutes)

- Tell participants that the moment has arrived for them to prepare for their first test. Ask them to take out the blank PDSA form and work as a group to fill out the top section and the PLAN box, using the example to guide them.
- When participants get to the data column they may need more guidance. The *Data-Collection Flowchart* (page 100 of this chapter) can be used indirectly to inform your strong facilitation or given to the participants to guide their thinking. Data can be informal, such as observations, checklists, or direct questions to students, and can include student work. The goal is to create measures that will answer the team's questions with a minimum of additional work.
- By the time they complete the planning section, they should be ready to do their first test. Check to see if they have settled on roles and responsibilities, thank them for their participation, and wish them luck.

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Department of Education

Continuous Learning

Participant Handout: Introduction to Plan-Do-Study-Act (PDSA) Cycles

Objective for the Activity

To understand and complete a PDSA form to prepare to test your first change idea.

Philosophy

By starting small, testing and refining changes before going to scale across the school, we can ensure our changes have maximum impact toward achieving our aim.

The Scope of Tests

The scope of each test (cycle) should be small, resulting in a quick and easy process. Things to consider:

- **Single Step:** Each PDSA cycle should involve only a small test of change. Instead of testing a lot of ideas at once, a teacher could test a single routine over the course of several weeks.
- **Short Duration:** Each PDSA cycle should be as brief as possible in order to quickly gain knowledge of whether or not your change idea works. The speed of your learning should take precedence over the scope of the change.
- **Small Sample Size:** A PDSA cycle typically involves only a small sample size (1–5 students, 1–3 teachers, or 1 school, depending on the test). As you gain more confidence that your change may lead to improvement, the change can be expanded to more students, more teachers, or more schools.

Group Discussion Questions:

- Does your first change idea fit within the scope described by the three points above?
- Can you carry out the test, collect measures, and meet to discuss the results in one week?

If you answered "no" to either of the questions above, what can you modify so that the change idea fits the appropriate scope?

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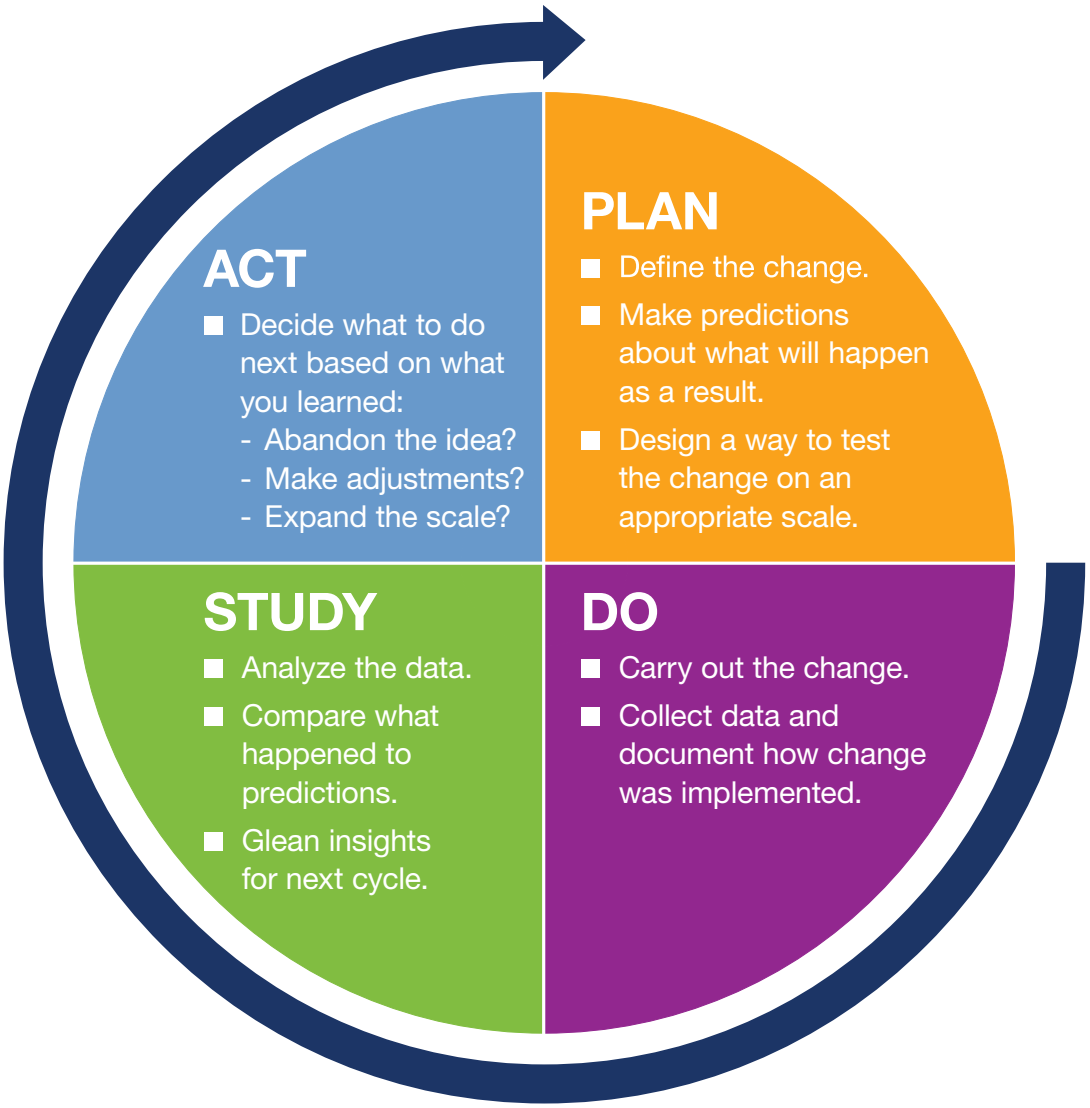
Introducing the PDSA Cycle

The idea behind a PDSA cycle should feel familiar to teachers. Teachers plan lessons to address the needs of their students and see evidence of how well the lesson worked in their students' work, engagement, and understanding. When an instructional approach isn't working, teachers see the evidence immediately. This evidence informs everything from on-the-fly changes in the classroom to refinements in lesson plans and curricula. This feedback cycle is at the foundation of how teachers get better at what they do.

PDSA cycles are a more structured way for educators to go through this same learning process as a team.



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EXAMPLE CHANGE IDEA: TEACHER–STUDENT GOAL-SETTING CONVERSATION

Goal-Setting and Planning Conversation Protocol

1. Let's talk about your last assessment. You got a score of _____. What do you think would be a reasonable goal for the next time you take the assessment?
2. What stands in the way of you reaching that goal? What is one main barrier?
3. How can you overcome this barrier? What is one specific strategy you can use to overcome this barrier?
4. Say your plan back to me. What is the barrier and what are you going to do when it occurs?

EXAMPLE DATA-COLLECTION FORM

Goal-Setting and Planning Conversation Protocol and Data-Collection Form

Student Name:

Start Time:
End Time:

Conversation Protocol:	**Notes:**
1. Let's talk about your last assessment. You got a score of _____. What do you think would be a reasonable goal for the next time you take the assessment?	
2. What stands in the way of you reaching that goal? What is one main barrier?	
3. How can you overcome this barrier? What is one specific strategy you can use to overcome this barrier?	
4. Summarize your plan for me. What is the barrier and what are you going to do when it occurs?	
On a scale of 1–5 with 1 = awkward and 5 = natural, how awkward was the conversation: Other notes/observations:	

PDSA Form

Test Title:		Date:	
Tester:		Cycle #:	
What change idea is being tested?		Driver:	
What is the overall GOAL of the test?			

1) PLAN **Details:** Describe the who/what/where/when for the test. Include your data-collection plan.			**2) DO** Briefly describe what happened during the test, surprises, difficulty getting data, obstacles, successes, etc.
Questions: Questions you have about what will happen. What do you want to learn?	**Predictions:** Make a prediction for each question. Not optional.	**Data:** Data you'll collect to test predictions.	**What were your results?** Comment on your predictions in the boxes below. Were they correct? Record any data summaries as well.

4) ACT Describe modifications and/or decisions for the next cycle; what will you do next?	**3) STUDY** What did you learn?

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PDSA Form

Test Title:	Goal-Setting and Planning Conversations	Date:	2/3/2016
Tester:	Perla	Cycle #:	1
What change idea is being tested?	Conversations with students to identify barriers and strategies for overcoming them	Driver:	Interview a student
What is the overall GOAL of the test?	Learn whether these conversations are feasible with middle school students to amke a plan after failing an assessment		

1) PLAN
Details: Describe the who/what/where/when for the test. Include your data-collection plan.

--We will each (3 teachers) find at least one opportunity to have a goal-setting conversation with a student after a student fails an assessment in the next 2 days
--Perla will create a data-collection sheet that includes both the protocol for the conversation and a place to record data and notes. each team member will record notes on the form and bring it to the huddle on Friday
--At the huddle we will assess whether the barriers identified are in students' control or out of their control. We will also assesss each of our predictions and decide what to do next.

2) DO Briefly describe what happened during the test, surprises, difficulty getting data, obstacles, successes, etc.

--All three conversations happened. One in class and two after class. 1 student seemed a little surprised by the conversation. All very easily engaged.
--In one case the strategy that the student mentioned didn't match the barrier ("get a peer tutor" when the barrier was "not enough time") and the teacher was unsure whether they should accept that strategy or push for a more related strategy. In the other 2 cases the teacher had to come up with an example of strategies because the student said "I don't know."
--Teachers often forgot to record the time that the conversations started and ended (Addtional notes on the data-collection sheet).

Questions: Questions you have about what will happen. What do you want to learn?	**Predictions:** Make a prediction for each question. Not optional.	**Data:** Data you'll collect to test predictions.	**What were your results?** Comment on your predictions in the boxes below. Were they correct? Record any data summaries as well.
1. How long will each conversation take?	Each conversation will take about 3 minutes	-Minutes of each conversation	One conversation lasted 2 min. The other two teachers forgot to record the time.
2. How many students will be able to come up with barriers? How many of the barriers will not be under the students' control?	All 3 students will be able to come up with a barrier. Only 1 will identify barriers within his/her control.	-# of students taht identify a barrier (step 2) -# of barriers that are out of the students control (step 2, mark either in/out of student's control)	0/3 students identified a SPECIFIC barrier.ALl students mentioned a reason they failed the assessment ("being lazy," "not understanding," "not putting in enough effort") butr did not identify a specific obstacle to passing the next time. 3/3 of their resasons for failure were within their control.
3. How many will be able to come up with plausible strategies to overcome the barriers?	All of the students that come up with a barrier under their control will be able to identify a strategy to address it	-# of in-control barriers with a strategy (step 3 of the protocol)	2/3 students came up with an appropriate plan fo rthe next step (peer tutoring, rewarding yourself, closing tabs)
4. How natural will the teachers find the conversations?	1/3 of the teachers will say that the conversations were naturla	-# of "4s and 4s" of teacher ratings of "awkwardness of the conversation" (collect in huddle)	All 3 teachers rated the conversations as 4 or 5, and ntoed that the conversations were "remarkably or surprisingly" natural.

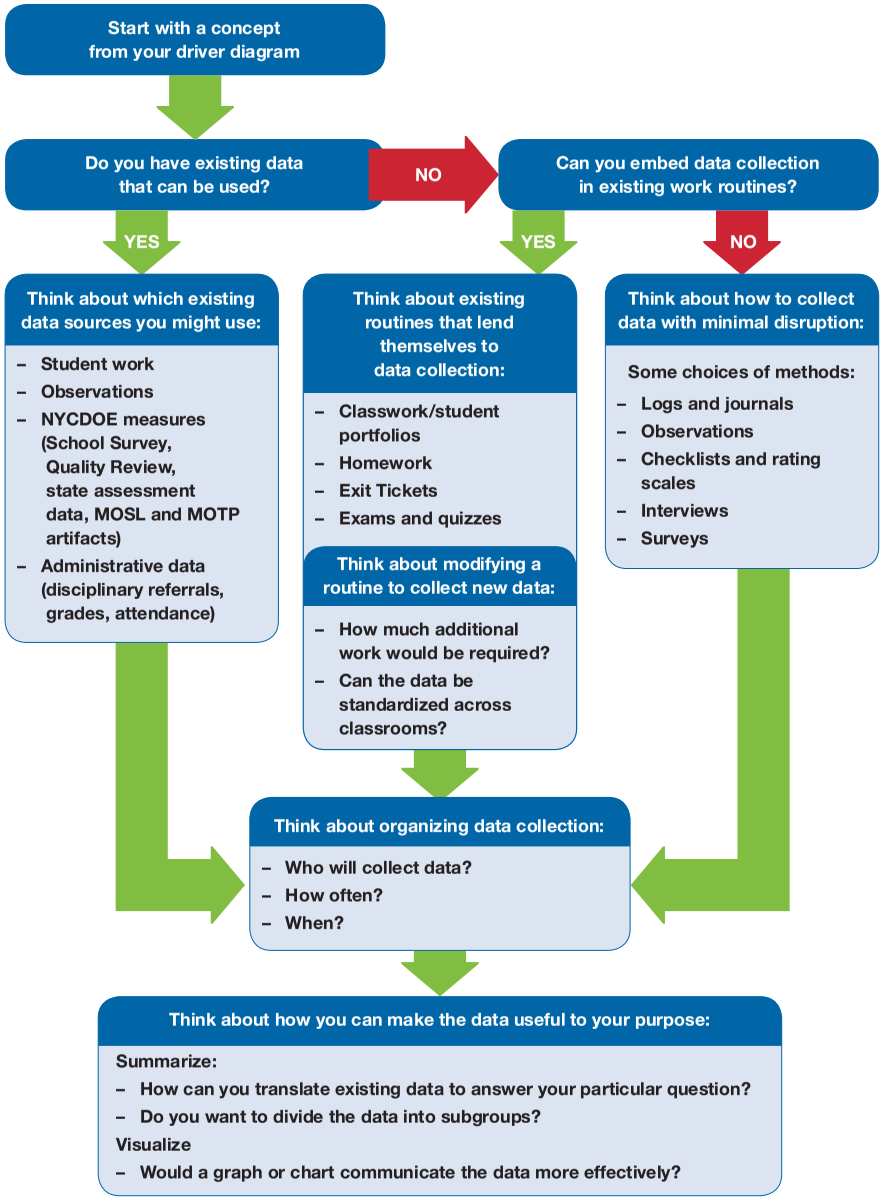
3) STUDY What did you learn?

-Goal-setting conversations were natural and doable in a short amount of time.
-Students couldn't identify specific, forward-looking obstacles that were specific.
-However, students did come up with pretty good strategies so maybe identifying barriers is not that important.

4) ACT Describe modifications and/or decisions for the next cycle; what will you do next?

Adopt in all 3 classrooms for one week and see if it changes the retake rate

Data-Collection Flowchart



Notes: