8. Using PDSA Cycles to Test Solutions to Problems

Note: This micro-credential is the eighth and final micro-credential in the Community Schools stack. The micro-credentials in this stack follow a sequence to best support educators in developing their capacity to support community schools.

Competency

Stakeholders will design a PDSA (Plan-Do-Study-Act) inquiry cycle in order to test a change idea from a driver diagram, evaluate that change, and plan the next cycle.

Key Method

Stakeholder teams who have created a driver diagram (developed in the preceding micro-credential) will choose to implement a change idea identified in the diagram using the PDSA cycle template. Teams will then enact the change idea, collect data while testing in order to study and decide if the change was in fact an improvement toward their aim and what should be done in the next inquiry cycle as a result of that analysis.

Method Components

What is a PDSA Cycle?

The PDSA cycle is shorthand for testing a change by developing a plan to test the change (Plan), carrying out the test (Do), observing and learning from the consequences (Study), and determining what modification should be made to the test (Act). - Institute for Healthcare Improvement

Why Use PDSA Cycles?

Though there are many methods of inquiry cycles being used in the educational system today, PDSAs have some particular properties that make them especially effective for use in community schools. This is a problem-solving system that has

worked in many different industries, communities, and systems and has proven to be replicable.

Another reason PDSAs are a high-leverage method of inquiry is that it is driven by constant improvement and change. It acknowledges that not all changes are improvements and therefore do not need to be continued, as well as always ends with an action to continue learning and improving toward your aim.

Terms/Definitions

Change Idea

> A change or modification to a system, process, or practice that will be tested and studied to examine its effectiveness in relation to improvement toward an aim.

Driver Diagram

> A driver diagram is a visual display of a team's theory of what "drives," or contributes to, the achievement of a project aim. This clear picture of a team's shared view is a useful tool for communicating to a range of stakeholders where a team is testing and working. – Institute for Healthcare Improvement

Improvement Aim

> A goal for an improvement effort that answers the question, "What are we trying to accomplish?" Aim statements should articulate what will be improved, by how much, when, and for what or whom.

Steps for Using the PDSA Cycle

Before planning, teams should choose a change idea carefully, considering the time they have to enact the change, the time it will take to have measurable results, and the potential to easily scale the idea after it has been studied.

Example: *Send out an email and a mailer directly to families about how, when, and where to get physicals two weeks before school begins.*

Plan

Planning for a PDSA cycle encompasses thinking about and gathering evidence around some of the following ideas:

- What is the objective of the test and how does it connect to your overall aim?
- What change will you make and what do you predict will be the outcome?
- Who will it involve and have you engaged with all the stakeholders connected to this problem?
- What data (from the needs assessment) informed your choice for this change idea?

- How long will the change take to implement? (Think about the time frame you have for this cycle and what you can measure in that time – 30-60-90 days)
- What resources will you need?
- What short-term and long-term data needs to be collected and how will you collect it?

Do

Carry out your plan. Be sure to remember to:

- Communicate with all stakeholders needed to implement the plan.
- Collect data and observations during implementation.

Study

Analyze the data and summarize what was learned. Think about:

- Was the change an improvement?
- How can you summarize your data? (i.e., flow charts, graphs, survey data collection)
- Was the outcome what you had predicted?
- Were there any unintended consequences or observations of positive unintended impacts?
- How can you represent observational data in a synthesized way?

Act

What actions will you take as a result of this test? Ask yourself:

- Were the results of your change what you wanted?
- Did they lead to improvement toward your aim?
- What does the data tell you about the effectiveness of your process or ideas?
- **Should this change idea be**
  - Abandoned – change the idea and try something different.
  - Adopted – spread to others in the system
  - Adjusted – modify or expand your change idea and run another cycle

Supporting Rationale and Research

Bryk, A.S., Gomez, L. & Grunow, A. (2011). Getting Ideas into Action: Building Networked Improvement Communities in Education. Frontiers in Sociology of Education. Edited by Maureen Hallinan, Springer Publishing. https://www.carnegiefoundation.org/wp-content/uploads/2014/09/bryk-gomez_building-nics-education.pdf

Park, S., Carver, P., Nordstrum, L. & Hironaka, S. (2013). 90-Day Cycle Handbook. Carnegie Foundation for the Advancement of Teaching.

https://www.carnegiefoundation.org/wp-content/uploads/2014/09/90DC_Handbook_external_10_8.pdf

Park, S., Carver, P., Nordstrum, L. & Hironaka, S. (2013). Continuous Improvement in Education. Carnegie Foundation for the Advancement of Teaching. https://www.carnegiefoundation.org/wp-content/uploads/2014/09/carnegie-foundation_continuous-improvement_2013.05.pdf

Watkins, R., West Meyers, M. & Visser, Y. L. (2012). "Decision making tools and techniques" in A Guide to Assessing Needs: Essential Tools for Collecting Information, Making Decisions, and Achieving Development Results. pp. 165-244. The World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/2231/663920PUB0EPI00essing09780821388686.pdf?sequence=1&isAllowed=y

Resources

Continuous Improvement in Education

How Do I Create and Run PDSAs? – Carnegie Foundation

90-Day Cycle Handbook

Planning Tools

Community Schools | NEA

Effective Presentations

How to Display Data the Right Way in Presentations

5 Top Tips for Presenting Data More Effectively

Submission Guidelines & Evaluation Criteria

To earn the micro-credential, you must receive a passing score in Parts 1 and 3 and receive proficiency for all components in Part 2.

Part 1. Overview Questions (Provides Context)

(300- to 500-word limit)

Please answer the following contextual questions to help our assessor understand your current situation. Please do not include any information that will make you identifiable to your reviewers.

1. What is your overall aim (what is it that you are ultimately trying to accomplish) and why is this an important outcome for your team and the students that will be impacted?
2. What change will you make and what do you predict will be the outcome? (See Size of Test in the Resources section)
3. What is it that you hope to be able to do and understand as a result of implementing this micro-credential?

Passing: Response provides reasonable and accurate information that justifies the reason for choosing this micro-credential to address specific needs of both the teacher and the student. Educator includes a learning goal that describes what they hope to gain from earning this micro-credential.

Part 2. Work Examples/Artifacts/Evidence

To earn this micro-credential, please submit the following **five artifacts** as evidence of your learning. *Please do not include any information that will make you or your students identifiable to your reviewers*.

Artifact 1: Data Representation
Submit a representation of the data that has informed this change. This evidence could be:

- Survey results
- Charted attendance data
- Demographic graph or chart

Artifact 2: Summary of Data
(200-300 words)
Submit a narrative summarization of how this data informed the change ideas.

Artifact 3: Completed PDSA cycle template
Use the template provided in the resource section to complete a PDSA cycle.

Artifact 4: Visual Representation of Results
Present the results of your PDSA cycle using graphs, tables, and/or charts.

Artifact 5: Analysis of Results

(200-300 words)
Submit an analysis of this data. Include:

- What you learned from the study
- What challenges you faced
- How this will inform your next steps

Part 2. Rubric

	Proficient	**Basic**	**Developing**
Artifact 1: Data Representation	Data shows clear conclusions and connections to the change idea and overall aim of the team	Data can be inferred to be connected to the change idea	There is data present but conclusions cannot be inferred or drawn from it
Artifact 2: Summary of Data	Summary cites the data to provide evidence and inform the change ideas	Summary may or may not cite the data to provide evidence and inform the change ideas	There is little or no connection between the data and the summary
Artifact 3: Completed PDSA Cycle template	Template is complete and all questions have been thoroughly answered	All questions have been answered; however, some are incomplete or imprecise	Template is incomplete and not all questions have been answered
Artifact 4: Visual Representation of Results	Data shows clear conclusions and connections to change idea and overall aim of the team Data is summarized in a way that informs the conclusions and next steps	Data can be inferred to be connected to the change idea The data is not compiled in a summative and/or conclusive way	There is data present but is not compiled so that conclusions can be inferred or drawn from it The data does not relate to the change idea or the aim of the team.
Artifact 5: Analysis of Results	Analysis fully answers the following questions:	Analysis may answer some of the following questions:	Analysis does not address the following questions:

	-What did you learn from the study? -What challenges did you face? -How will this inform your next steps?	-What did you learn from the study? -What challenges did you face? -How will this inform your next steps? **AND/OR** Answers are vague and incomplete	-What did you learn from the study? -What challenges did you face? -How will this inform your next steps? **AND/OR** Answers are incomplete and vague

Part 3 Reflection

(300- to 500-word limit)

Use the word count as a guide to write a personal reflection about your work on this micro-credential. For tips on writing a good reflection review the following resource:

How Do I Write a Good Personal Reflection?

Please do not include any information that will make you identifiable to your reviewers.

1. How did this PDSA cycle impact your understanding of small tests of change?
2. What impact did your change have on or for students?
3. How will you implement PDSA cycles and or small tests of change in your context as a result of learning how to complete PDSA cycles?

Passing: Reflection provides evidence that this activity has had a positive impact on both educator practice and student success. Specific examples are cited directly from personal or work-related experiences to support claims. Also included are specific actionable steps that demonstrate how new learning will be integrated into future practices.