8. Using PDSA Cycles to Test Solutions to Problems

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

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.
Supporting Research


Resources

How Do I Create and Run PDSAs? [https://carnegienetworks zendesk.com/hc/en-us/sections/206616427-How-Do-I-Create-and-Run-PDSAs-]


Use of plan-do-study-act (PDSA) cycles [https://www.slideshare.net/search/slideshow?searchfrom-header&q=use+of+plan-do-study-act+%28pdsa%29+cycles+to+strengthen+routine+immunization+in+ethiopia&ud=any&ft=all&lang=**&sort=]

Planning Tools

NEA The Six Pillars of Community Schools Toolkit [http://www.nea.org/assets/docs/Comm%205Schools%20ToolKit-final%20digi-web-72617.pdf]

How to choose the size of the test [https://drive.google.com/file/d/0B655VMCE7OZWZkZZTZWRczBqV1k/view]

Effective Presentations

- How to Display Data the Right Way in Presentations: [https://www.duarte.com/presentation-skills-]
Submission Guidelines & Evaluation Criteria

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

Part 1. Overview Questions

300-word min to 500-word max

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

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

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

300-word min to 500-word max

Please answer the following reflective questions. 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.

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