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A Problem-Solving Approach to Designing and Implementing a Strategy to Improve Performance

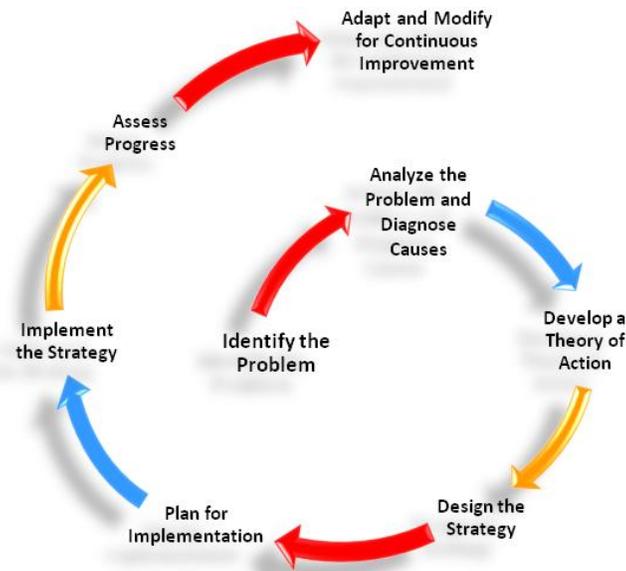


Figure A Problem-Solving Approach to Strategy Design and Implementation

The problem-solving approach to designing and implementing a strategy includes eight steps (see **Figure A**):

1. Identify the Problem
2. Analyze the Problem and Diagnose Its Causes
3. Develop a Theory of Action
4. Design the Strategy
5. Plan for Implementation
6. Implement the Strategy
7. Assess Progress
8. Adapt and Modify for Continuous Improvement

Professor Stacey Childress and Research Associate Geoff Marietta prepared the original version of this note, PEL-056: A Problem-Solving Approach to Designing and Implementing a Strategy to Improve Performance. This version was modified by Professor of Practice Andrés Alonso and Senior Project Manager Matthew Tallon as active members of the Public Education Leadership Project.

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Teams rarely move through each step sequentially, and might get stuck and revisit earlier steps throughout the process. However, each step is critical to improving system-wide performance.

Steps

Identify the Problem. The first and most critical step of solving a performance problem is to accurately identify it. The performance problem your team selects should be grounded in the instructional core. Often teams try to address an unsatisfactory outcome—such as low student achievement—without identifying a serious problem that contributes to it. If a team does not take this step seriously, a lack of rigor will likely result in a weak theory of action. Problem definitions that focus on blaming others such as “there isn’t enough money” or “the union is against it” are tempting because they absolve us of responsibility for taking action. As Rick DuFour (2004) puts it, rather than focusing outward on forces over which you have little control, your team should identify a problem that is within its sphere of influence. DuFour calls this looking “in the mirror” instead of “out the window.”

Analyze the Problem and Diagnose Its Causes. Once your team has identified the problem, you must figure out what is really going on. We challenge you to look internally at your district’s practices and results, and be ready to recognize what role the district office might play in the problem. It is important to consider the problem from the perspectives of teachers and administrators in the schools or parents. Understanding the root causes of the problem you identify will prepare your team to address it.

Develop a Theory of Action. The next step is to formulate a theory of action for how to solve the problem you identified by attacking its root causes. A district’s theory of action is a statement about cause and effect. Typically, it takes the form: “If we do X. . . then Y will occur.” In other words, which actions does your team think will lead to your desired results?

Design the Strategy. Your strategy is simply the set of coherent actions you will take to put your theory into practice and solve the problem you have identified. It should include the target of the intervention (particular student groups, grade levels, content areas, or employee groups), the specific actions that will be taken, and the timetable for implementation and results. In addition to identifying the activities of your strategy in this step, you must diagnose the level of coherence in your organization with your new strategy.

Plan for Implementation. Preparing to implement the strategy is as important as implementing it. In this step, your team should identify the resources needed to successfully execute the strategy. These might include financial resources, people, and/or technology. Pay particular attention to the people aspects of the implementation plan. A strategy’s success or failure is largely dependent on the ability of the relevant staff members to perform the tasks that make the strategy come to life, and it is important to identify knowledge or skill gaps in the planning phase. Don’t overlook the political support that you might need, both within the system and outside it. Your team should also anticipate challenges that are likely to come up during implementation and find ways to address them in advance.

Implement the Strategy. During this step, people must have the resources, knowledge, skills and support they need in order to implement the strategy with fidelity. District leaders need to take the time to ensure that everyone understands the strategy, how his or her particular job or task contributes to the overall effort, and why it is important. District leaders must also solicit feedback

and suggestions from those who are implementing the strategy – typically teachers and principals. In addition to the necessary skills, employees must have the will to implement.

Assess Progress. While implementation is underway, you should be collecting, analyzing, and making decisions based on data about three dimensions: 1) the progress of the implementation; 2) the effectiveness of the strategy; and 3) the validity of the theory of action.

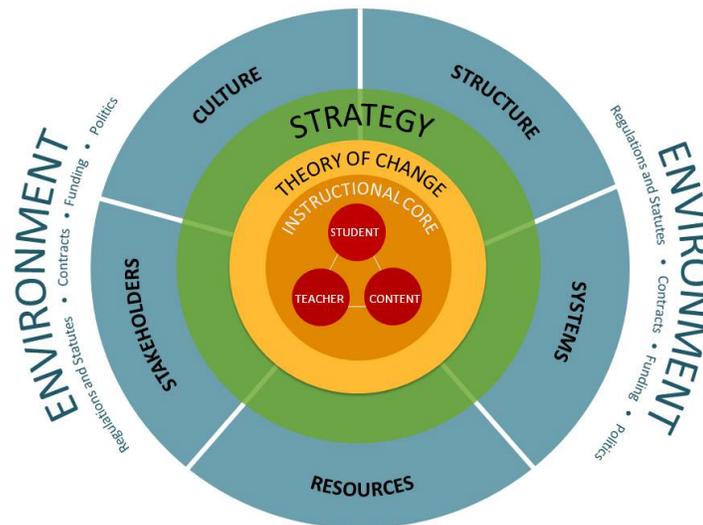
Adapt and Modify for Continuous Improvement. Throughout the implementation of the strategy, you might discover new problems or miss original targets. By adapting and modifying the implementation plan, the strategy and the theory of action as more information becomes available, leadership teams can accelerate their progress. Modifications could be as simple as addressing an unforeseen skill gap in key personnel or as complicated as adapting to changes in state regulations.

Problem-Solving Approach to Strategy: Guiding Questions for Each Step

Step #1: Identify the Problem

- What is the performance problem we are trying to solve? What are three or four observable symptoms of the overall problem we identified? Be sure that it is linked to activities and outcomes related to the instructional core (students, teachers, academic content)
- How can we describe the problem in simple terms with no jargon (no more than a sentence or two)?
- What evidence do we have that this is a problem in our organization? Will this evidence enable us to better communicate the nature and importance of the problem to staff and stakeholders?

When working through problem identification, the PELP coherence framework can be a useful diagnostic tool in scanning the organization looking for performance gaps or incoherence. The Coherence Framework is explained in detail in PEL-010, but it is reproduced here for a quick reference in the problem solving process.



Components of the PELP Coherence Framework

- **Instructional core:** The core includes three interdependent components: teachers' knowledge and skill, students' engagement in their own learning, and academically challenging content.
- **Theory of Change (Action):** The organization's belief about the relationships between certain actions and desired outcomes, often phrased as an "if... then..." statement. This theory links the mission of increased performance for all students to the strategy the organization will use to achieve that goal.
- **Strategy:** A coherent set of actions a district deliberately undertakes to strengthen the instructional core with the objective of raising student performance district-wide. Gaining coherence among actions at the district, school, and classroom levels will make a district's chosen strategy more scalable and sustainable.
- **Stakeholders:** The people and groups inside and outside of the district - district and school staff, governing bodies, unions and associations, parents and parent organizations, civic and community leaders and organizations.
- **Culture:** The predominant norms, values, and attitudes that define and drive behavior in the district.
- **Structure:** Structures help define how the work of the district gets done. It includes how people are organized, who has responsibility and accountability for results, and who makes or influences decisions. Structures can be both formal (deliberately established organizational forms) and informal (the way decisions get made or the way people work and interact outside of formal channels).
- **Systems:** School districts manage themselves through a variety of systems, which are the processes and procedures through which work gets done. Systems are built around such important functions as career development and promotion, compensation, student assignment, resource allocation, organizational learning, and measurement and accountability. Most practically, systems help people feel like they do not have to "reinvent the wheel" when they need to get an important, and often multi-step, task done.
- **Resources:** Managing the flow of financial resources throughout the organization is important, but resources also include people and physical assets such as technology and data. When school districts carefully manage their most valuable resource--people--and understand what investments in technology and data systems are necessary to better support teaching and learning, the entire organization is brought closer to coherence.
- **Environment:** A district's environment includes all the external factors that can have an impact on strategy, operations, and performance (i.e. regulations and statutes, contracts, funding and politics).

Step #2: Analyze the Problem and Diagnose Its Causes

- Often it is not possible to identify a single root cause of a problem. Therefore, the team will need to spend time examining possible causes for the problem and deciding which best explains why the problem occurs and persists. Often it is not possible to do everything at once, and your team should develop a common point of view about where to start.

- What are the consequences of *not* solving the problem? Be specific. How will a failure to act affect students over the long-term? How will it impact district-wide performance in the medium term?

Table 1 provides an example of a root cause analysis technique called the “5 Whys.” The method is widely-used in various continuous improvement processes. Your team should use your answers to the earlier questions about the problem and its symptoms as a way to get started. For each symptom, you should ask the question, “Why?” a number of times until you reach an actionable root cause. Experts say this usually takes five “whys”, hence the name of the method.

In the table below, we articulated a problem that many urban districts share and identified three common, observable symptoms. We then answered a series of “whys” for each symptom by moving down the columns of the table. Your team might only need four “whys” to uncover a root cause, as in symptom 3 in the table, or you might need six. The number is not as important as finding an actionable root cause. Most problems have more than three symptoms, and some symptoms have more than one root cause. In order to keep the illustration as simple as possible, we chose only three symptoms and followed the root cause process once for each. Clearly, additional or alternative paths exist for each symptom and it is important for your team to explore multiple options in your analysis. Also, remember to look in the mirror rather than out the window as you go through the process.

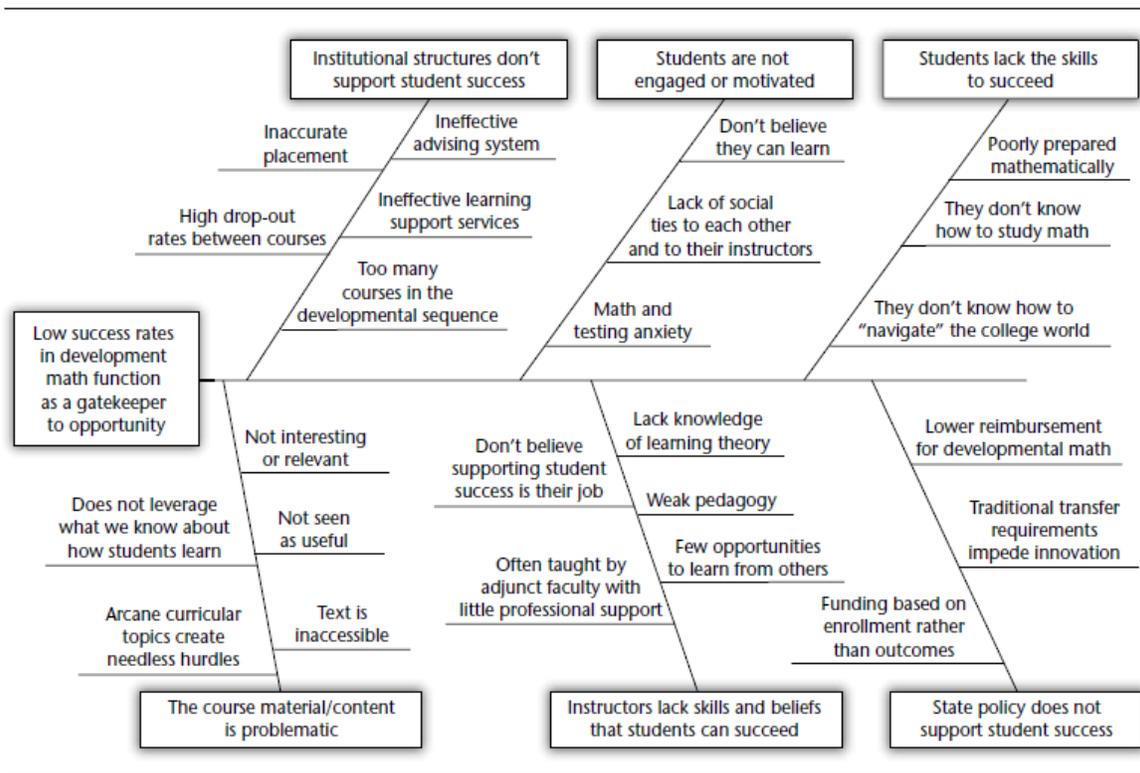
Table 1: “5 Whys” Root Cause Analysis Guide (With Example)

Problem: In our district, there are significant differences in academic outcomes between subgroups of students K-12, predictable largely by the race and ethnicity of the students.		
Symptom 1: By 3 rd grade, gaps are present on state reading exams. ▼	Symptom 2: Our high school A/P and Honors courses are disproportionately enrolled by White and Asian students. ▼	Symptom 3: 95% of White students graduate from our high schools, but only 73% of African-American and 70% of Hispanic students graduate ▼
Why? African-American and Hispanic students on average score 20 points lower than White and Asian students. ▼	Why? African-American and Hispanic students enroll in A/P and Honors courses at much lower rates than their overall % of the student body ▼	Why? Beginning in 9 th grade, these students begin dropping out at faster rates, and it accelerates every year of high school. ▼
Why? We have anecdotal evidence that students come to K with different levels of pre-literacy skills, but no hard data about the nature and scale of the differences for individual students, or how they progress. ▼	Why? Fewer students in these sub-groups have the prerequisites, especially in mathematics. ▼	Why? They do not see the relevance of high school courses today or in the future. ▼
Why? We don’t perform diagnostic assessments of students in grades K - 2. ▼	Why? Very low numbers of African-American and Hispanic students have completed Algebra by the 8 th grade. ▼	Why? To prepare them for the HS exit exam, their coursework is focused on basic skills and not connected to later opportunities. ▼
Why? We don’t have valid tools to diagnose or respond to the different learning needs of students in these early grades. ▼	Why? When we begin sorting students into different math ability levels in fourth grade, these students are disproportionately assigned to the “regular” math track. ▼	Why? These students come into HS multiple grade levels behind and must take double blocks of reading and math, limiting their opportunities to take courses that might interest them. ▼
Why? We have not invested in the tools our teachers need for diagnosis or the skills or curriculum they need to effectively differentiate.	Why? Many students are not getting what they need for success in K-3 math, and the others are often placed in courses below their ability levels.	Why?

Source: Example created by the authors based on actual situations in urban districts.

Table 2 provides an example of a second root cause analysis technique called the “Fishbone Diagram”. The technique is a popular one for teams to unearth root causes during collective brainstorming. It’s a visual representation of the conversation. The major bones represent key contributing factors to poor outcomes, and five to six of these key factors are typical. The smaller secondary bones are the root causes that emerge from the conversation. These causes can be myriad and are diagrammed on the five or six major bones. In his book *Learning to Improve: How America’s Schools Can Get Better at Getting Better*, Anthony Bryk and colleagues endorse the fishbone technique and present the following example of a fishbone diagram for low success rates in developmental mathematics.

Table 2: The Fishbone Diagram Analysis Guide (With Example for “Low Success Rates in Developmental Mathematics”):



Source: Fishbone diagram for low success rates in developmental mathematics published in *Learning to Improve: How America’s Schools Can Get Better at Getting Better* by A. S. Bryk et al., Harvard Education Press, Cambridge, Mass., 2015.

Step #3: Develop a Theory of Action

The next step is to articulate a theory of action for how to solve the problem you identified by attacking its root causes. As with any theory, a district’s theory of action is a statement about cause and effect. In other words, which actions does your team think will lead to your desired results? You should be able to map the elements of your theory back to the root causes you uncovered in your problem analysis. Using “if...then...” statements to articulate the theory of action can help ensure

that your team is focused on testable predictions about cause and effect rather than ideology or personal philosophy. Below is an example of a theory of action that might flow from the root cause analysis in Table 1:

All students should have access to rigorous academic content, which they can master if they are adequately prepared beginning in kindergarten. We also believe that our teachers are committed to their students' learning, but might not have the skills or curriculum they need. We acknowledge that our entire system currently has institutional barriers that a) sort children away from our most rigorous courses, and b) thereby reinforce widely-held but inaccurate assumptions about the ability of all children to master rigorous content if given the right supports. Therefore:

If we:

- 1. invest heavily in diagnostic assessment, differentiated instruction, and effective literacy curriculum beginning in kindergarten,*
- 2. remove the institutional barriers and sorting mechanisms that begin as early as fourth grade,*
- 3. open up access to rigorous high school courses rather than viewing them as appropriate for only a few, and*
- 4. give our principals and teachers all of the support they need to change their practice and their beliefs in order to meet the new expectations,*

Then, over time, not only will we eliminate achievement gaps that are predictable by race and ethnicity, we will also raise the bar for all of our students because of our focus on rigorous course work for every child.

Below is a set of questions to answer as your team works out its own theory of action.

- What specific actions do we think will reduce or eliminate the effects of one or more of the root causes we identified in the previous step?
- Why do we think these actions will lead to the results we desire? In other words, what assumptions are we making about how kids learn? How adults learn? How our team operates? About our context or environment? About our students and their families? Stating these assumptions upfront can help everyone understand what beliefs underpin your theory of action.
- From the above analysis, construct an "if...then..." statement that communicates the theory of action.

Table 3: Theory of Action Template

Introductory Statement of Belief:
If we:
[1]*
[2]*
[3]*
[4]*
Then...

* Component numbers will vary.

Step #4: Design the Strategy

Your strategy is simply the set of coherent actions you will take to put your theory into practice and solve the problem you have identified. It should include the target of the intervention (particular student groups, grade levels, content areas, or employee groups), the specific actions that will be taken, and the timetable for implementation and results. In addition to identifying the activities of your strategy in this step, you must diagnose the level of coherence in your organization with your new strategy.

Characteristics of a Well-Crafted Strategy:

Although some differences exist, effective strategy has a number of characteristics in organizations across the business, nonprofit, and education sectors. Evaluating an existing or emerging strategy based on these characteristics can be a useful exercise. A well-crafted strategy:

- **Connects to Purpose** – people responsible for executing the actions chosen by the organization can readily see a link to the mission and objectives in their work
- **Provides Focus** – people at all levels understand who their “customers” are, what service they are providing to them, and why
- **Guides Choices** – people throughout the organization can make better choices between possible activities, projects, and programs by assessing their fit with the strategy
- **Illuminates Relationships** – people understand how their actions are related to the actions of others in the organization, and are able to recognize and take advantage of linkages and interdependencies to accomplish objectives
- **Defines Measurement Parameters** – people can work together to identify measures that are focused on the organizational learning necessary for continuous improvement of activities

related to the strategy, and create and track indicators of performance relevant to successful execution of the strategy.

- **Addresses the External Environment** – people are focused on the work of the organization, but understand how it links to the external context and the expectations of stakeholders
- **Allows for Adaptation** – leaders in the organization are able to adapt the strategy as the organization learns about the effectiveness of activities through implementation and monitoring, and/or in response to changes in the external environment

Guiding Questions for Strategy Development:

- What set of actions will we take to put our theory of action into practice? How do the specific actions map back to the assumptions about cause and effect that underpin our theory of action?
- Who will be affected by our actions (students, stakeholders, employees)?
- What is a reasonable timeframe over which the actions have to be consistently implemented to achieve results? (Build this directly into your strategy statement.)
- Are the relevant systems, structures, resources and culture of our organization likely to make it easier or harder to effectively implement the strategy? If they make it harder, what changes are needed in order to increase the likelihood that we can implement the strategy well? (If you have significant diagnostic work to perform in this area, consult the Note on the PELP Coherence Framework for guiding questions about each piece of your organization.)
- What are the specific short, medium and long term targets we will hit if our strategy is successful?

Step #5: Plan for Implementation

Preparing to implement the strategy is as important as implementation. In this step, your team should identify the resources needed to successfully execute the strategy. These might include financial resources, people, and/or technology. Pay particular attention to the people aspects of the implementation plan. A strategy's success or failure is largely dependent on the ability of the relevant staff members to perform the tasks that make the strategy come to life, and it is important to identify knowledge or skill gaps in the planning phase. Don't overlook the political support that you might need, both within the system and outside it. Your team should also anticipate challenges that are likely to come up during implementation and find ways to address them in advance.

- What steps will we take to implement our strategy? *Who* will do *what* by *when*?
- What material resources are required to implement the strategy? (Curricular materials, technology, physical space, etc.)
- Is new training needed to ensure that the people asked to implement pieces of the strategy have the skills they need to do their best work?
- How much will the implementation cost? How will we pay for it? Will there be savings in other areas related to the new strategy?

- What are the implications for teachers, principals, and central office staff if nothing changes? This question helps uncover particular groups who might feel threatened by the changes you propose.
- How will we build support for the strategy, especially among stakeholder groups who think that they may lose out as a result of the change?
- What roadblocks (both internal and external) are we likely to encounter? What can we do to prevent or quickly address them? Who will be accountable for managing the response to roadblocks?
- Who – individual or group – will “own” the implementation? Who will ensure that people and schools have what they need and are actually performing the work necessary for a successful implementation?
- What are some specific benchmarks we will measure throughout the process to assess whether or not the implementation is on track? What indicators will let us know if the strategy is as effective as we imagine it will be? What measures should we put in place to assess the validity of our theory of action and test the assumptions embedded in the theory?
- Are there systems in place to collect the data needed for the indicators developed above? If not how will we create them? Who will be responsible for analyzing the data that is gathered? Is there an existing team that is the logical group to make decisions based on the analysis? If not, should we create an ad hoc team for this purpose? Who should be part of this team?

Step #6: Implement the Strategy

- Do people understand how their day-to-day actions are related to the strategy? Is the strategy meaningful to them?
- Are we providing the supports people need to enable them to successfully perform the work required of them during the implementation phase?
- Are people actually implementing the strategy as it was designed? If not, why not? Are there consequences for failing to implement the strategy?
- What is the process for making sure that all participants provide regular feedback that will allow us to continuously improve performance by adapting the strategy as we learn?

Step #7: Assess Progress

- What can we learn from the data we are gathering about the progress we are making in solving the problem we identified? What do our interim results tell us about our predictions about cause and effect?
- Are we achieving all of the milestones we set during the implementation planning step? Are we on track in terms of timelines? Budget projections? Staff allocations?

- If we are missing milestones, why is that happening? Was the initial schedule unrealistically ambitious? Did we underestimate the time certain activities would take to accomplish? Did our forecasts fail to account for important factors? Have barriers come up that were unexpected? Should we adjust our expectations or accelerate our efforts in order to meet our original targets?
- Are individuals and/or teams engaging productively in the activities that the strategy requires? If not, why? Is it a problem of skill, which would call for us to provide more training and development? Or, is it a problem of will? Are some people opting out of the whole approach, believing that “this too shall pass”? If so, what steps will we take to help people change their behavior? If this is ineffective, what will we do?
- If our implementation seems on track but we are missing our targets, should we reexamine our strategy or our theory of action? Did we misdiagnose the causes of the problem?
- If not, what can we learn from our feedback loops that might help us revise the strategy to make it more effective? Are there alternative activities that might be more powerful?
- Have we learned anything during implementation of our strategy that challenges any of the assumptions embedded in our theory? About our diagnosis of root causes?

Step #8: Adapt and Modify for Continuous Improvement

- How should we respond to the information generated in the “assess” step?
- If we are making progress in solving the initial problem we identified, what adjustments do we need to make to our approach now that one or more of the root causes might be diminishing in importance?
- How can we create opportunities for the people involved in the work to celebrate progress while maintaining a sense of urgency about solving difficult performance problems over the long term?