A root cause analysis is a valuable process for identifying the underlying causes of a problem or issue. It helps teams understand why specific outcomes could occur and allows teams to delve deep into the factors contributing to those outcomes. This document contains guidance on conducting a root cause analysis with a team. It provides step-by-step actions and an overview of potential tools for the team.

Introduction

Root cause analysis is a process used to investigate and categorize the root cause of community needs. The root cause is the fundamental reason for the occurrence of a problem. Root cause analysis allows teams to look more deeply at identified challenges and investigate precursors that could be addressed to prevent the need or problem from resurfacing. As with a weed, the challenge must be 'rooted out' to prevent it from reappearing in the future. In particular, root cause analysis helps identify systems-level factors related to identified needs and can assist organizations with implementation barrier-busting.

Figure 1.
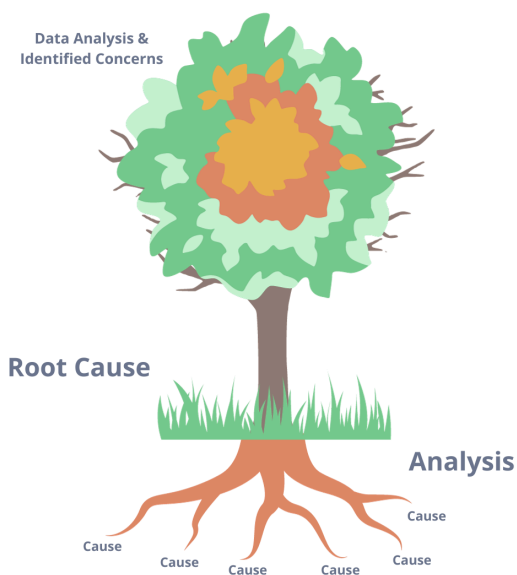
Conducting a root cause analysis requires a mindset infused with curiosity and a determined quest to uncover the roots of challenges. A curious mindset prompts educators and administrators to delve beyond surface-level issues, peeling back layers to reveal the core challenges. By fostering a spirit of inquiry, the analysis becomes a journey of exploration, seeking to unravel the intricate web of contributing elements. Approaching the task with a curiosity-driven mindset facilitates a more comprehensive understanding of problems. It lays the groundwork for innovative solutions, ultimately paving the way for meaningful and sustainable improvements within the educational environment (Safir & Dugan, 2021).

Steps in Completing a Root Cause Analysis:

Before the Root Cause Analysis Process:

1) *Select Team Members:* Before beginning a root cause analysis, it is important to convene an interdisciplinary team that includes content experts, coaches, principals, teachers, district leaders, students, and families/caregivers. For guidance on selecting critical perspectives, visit SISEP's [Guidance on Engaging Critical Perspectives.](#)

2) *Create a Safe Environment:* The team should set the stage by defining the purpose of the meeting, creating norms, and creating a safe environment free from biases and judgment. This step ensures the environment is primed for curiosity and inquiry. For more information on creating a safe environment, visit SISEP's [Grow and Sustain Relationships Interactive Lesson](#).

3) *Set Purpose:* All team members should participate in a brainstorming session before completing the root cause analysis. Teams should agree on the specific need they wish to address through the process and the objectives to be achieved together.

4) *Gather Data:* The team should also decide what protocol (see several examples below) they will use and what data may be necessary to have available. Types of data may include fidelity, capacity, scale-up, and outcome measurements. It is also crucial that the team considers data at different system levels, such as satellite, map, and street data (Safir & Dugan, 2021).

Implementation Support Practitioner Facilitation Tips:

- Gain leadership commitment and buy-in
- Provide rationales for engaging in a systematic process
- Double-check needed perspectives
- Include individuals with knowledge of the context/practices
- Establish a structure before meeting to engage participants meaningfully
- Identify decision-making process
- Consider the use of an external facilitator if adaptive challenges are present

During the Root Cause Analysis Process:

1) *Conduct a Preliminary Analysis:* Begin with a high-level analysis to understand the sequence of events leading to the problem.

2) *Formulate Hypotheses:* Develop hypotheses about the root causes of the problems. Encourage team members to share their insights and perspectives.

3) *Identify Root Causes:* Based on the preliminary analysis and hypothesis, identify the true root causes of the problem utilizing the protocols below. Distinguish between immediate causes and underlying system issues.

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4) *Investigate Thoroughly:* Dive deeper into each identified cause to gather more detailed information. Verify assumptions and validate hypotheses through interviews, data analysis, and other methods.

Implementation Support Practitioner Facilitation Tips:

- Reinforce the use of the agreed decision-making process
- Engage all voices (e.g., space set up, parking lots)
- Facilitation strategies:
  - Round robin brainstorming
  - Popcorn barriers
  - 1-2-4-All
- Acknowledge individuals' contributions
- Ask open-ended and probing questions
- Encourage dialogue to promote collective knowledge and understanding
- Prompt for evidence and data when assessing practice
- Intervene quickly when someone jumps up the ladder of inference
- Identify and name adaptive challenges that could be an elephant in the room (e.g., philosophy differences)
- Don't get stuck in the weeds; what is enough information to decide?
- Appreciate and recognize candid feedback.

After the Root Cause Analysis Process:

1) *Develop Corrective Actions:* Formulate corrective actions to address the root causes and prioritize actions based on their potential impact and feasibility.

2) *Communicate Findings:* Share the root cause analysis findings and outcomes with relevant partners and provide a transparent overview of the process and actions taken.

3) *Document Learnings:* Document the entire root cause analysis process, including findings, actions taken, and outcomes, and share insights with the team to facilitate organizational learning.

Implementation Support Practitioner Facilitation Tips:

- Draft common communication messages that include information gathered
- Save information gathered to come back to for other selections and planning purposes
- If team diverts from recommendation, bring back to the process and information gathered

Protocol Overview

Below are commonly used root cause analysis tools that organizations can use as a systematic and formalized approach to considering the root causes of community needs. The protocols can be used in isolation or together. Below are the usable formats of each recommended protocol:

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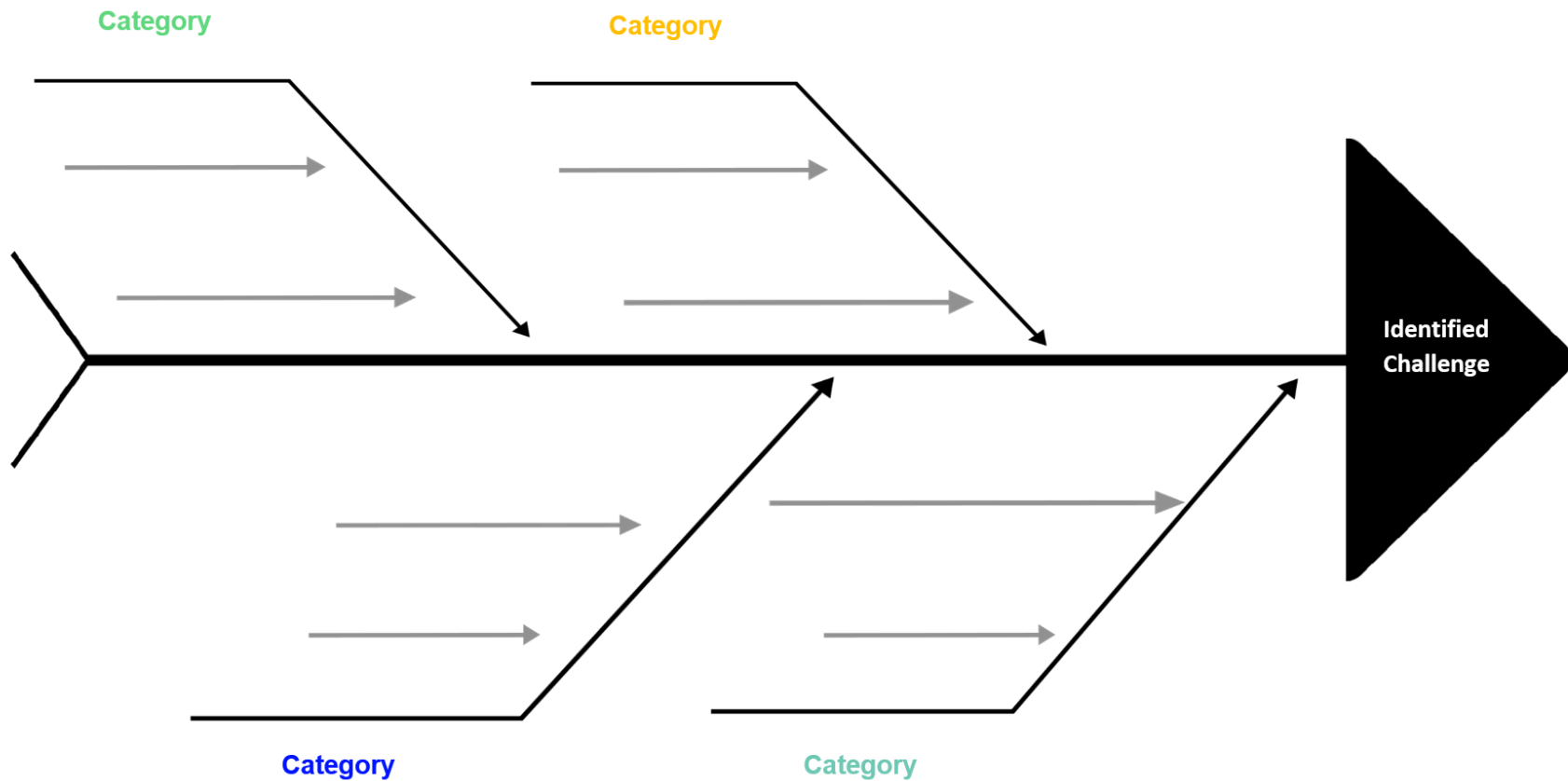
Fishbone Diagram – Overview

The Fishbone Diagram starts with the need (e.g., problem statement) identified in the team's brainstorming session. This challenge is placed in the head of the fish (Byrk et al., 2015). The backbone of the fish lists categories that may impact the need, such as context, resources, competency, and organization. For each category, the team should brainstorm possible causes for the need. The examples below provide further detail on the categories and example causes:

- **Context** includes circumstances in the community that may impact the identified need, such as political influences that impact decision-making, the history and culture of the community, and the mission and core values of the organization.
- **Resources** include the assets that your community requires to address the need, such as the availability of funds, staffing to meet the organization's needs, and adequate time in work schedules to provide professional learning.
- **Competency** reflects the capacity of the community to address the needs. Developing essential competencies may require improved training and coaching of staff involved in the solution. This may need to include leaders, practitioners, and coaches to support building competency throughout the organization.
- **Organizations** may also need to build their capacity. This can include revising policies or procedures to address the identified need, building critical partnerships with other community organizations, and/or fundraising to support the expansion of services. It can also include examining organizational structures needed to support change and data-based decision-making.

The team should brainstorm to identify potential reasons or causes for each category. Data from experience, observation, focus groups, and surveys can also populate causes. Once the diagram is complete, evaluate the fishbone by:

- Looking for recurring themes across categories.
- Looking at the balance. Which category/categories have the most causes?

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Fishbone Diagram

Category

Category

Identified Challenge

Category

Category

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Fishbone Diagram

Instructional Practices

Limited access to high-quality math practices

Gap in tailored instructional supports

Professional Learning

Misalignment between PL and instructional support

No follow-up support for instructional staff

Disproportionate outcomes among students with IEPs

Lack of coordinated support between general education and special education

Communication System

Limited access to K-12 academic supports (e.g., tutorial services)

Limited access to community services (e.g., library, after-school)

Community Resources

Five Whys - Overview

The Five Whys begins with a problem statement. For this example, the problem statement could be the community need your team identified during brainstorming or one of the causes identified in your Fishbone Diagram. The team will ask "why" this need or cause is present and record responses. Continue to ask why, recording responses as you go. By asking "why" at least five times, your team should get to the root cause of the identified need (iSixSigma-Editorial, 2023). The example below further explores a potential cause for the identified challenge on the Fishbone.
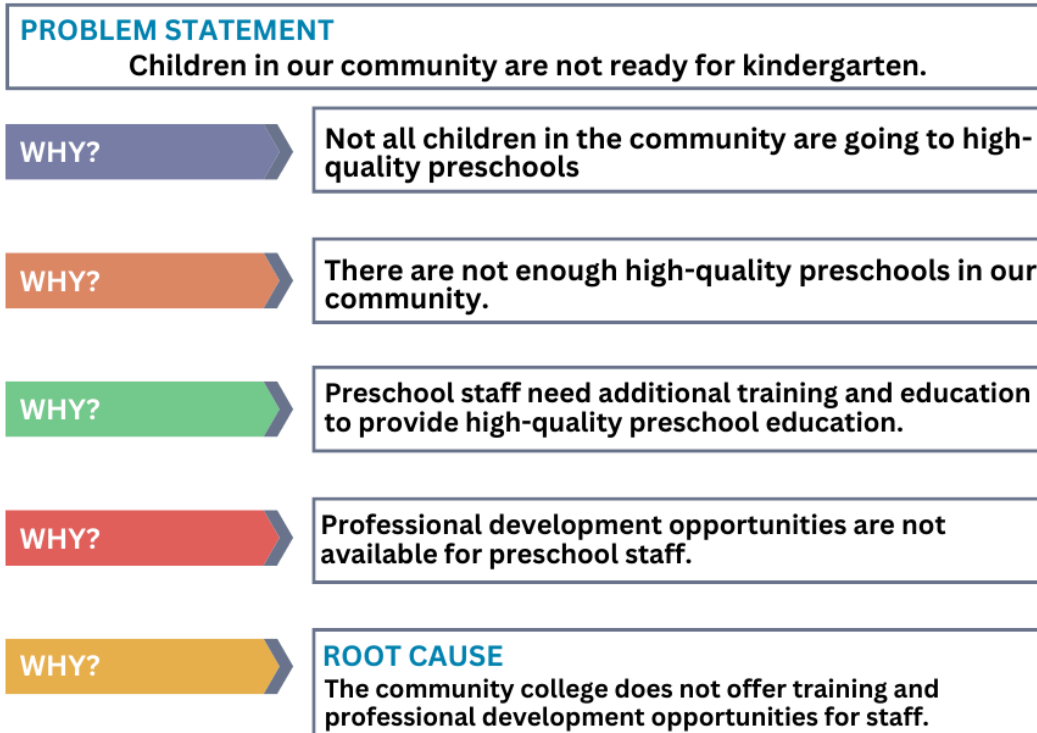
Five Whys - Protocol

5 Whys

PROBLEM STATEMENT

WHY?	

WHY?	

WHY?	

WHY?	

WHY?	ROOT CAUSE

5 Whys

PROBLEM STATEMENT
Children in our community are not ready for kindergarten.

WHY? → Not all children in the community are going to high-quality preschools

WHY? → There are not enough high-quality preschools in our community.

WHY? → Preschool staff need additional training and education to provide high-quality preschool education.

WHY? → Professional development opportunities are not available for preschool staff.

WHY? → **ROOT CAUSE**
The community college does not offer training and professional development opportunities for staff.

In this example, asking "why" five times reveals that limited training and professional development opportunities are available for preschool staff, which results in poor kindergarten readiness for children in the community. The team's next steps might be to engage the local community college in providing more training for preschool staff or consider other community partners who can provide training resources.
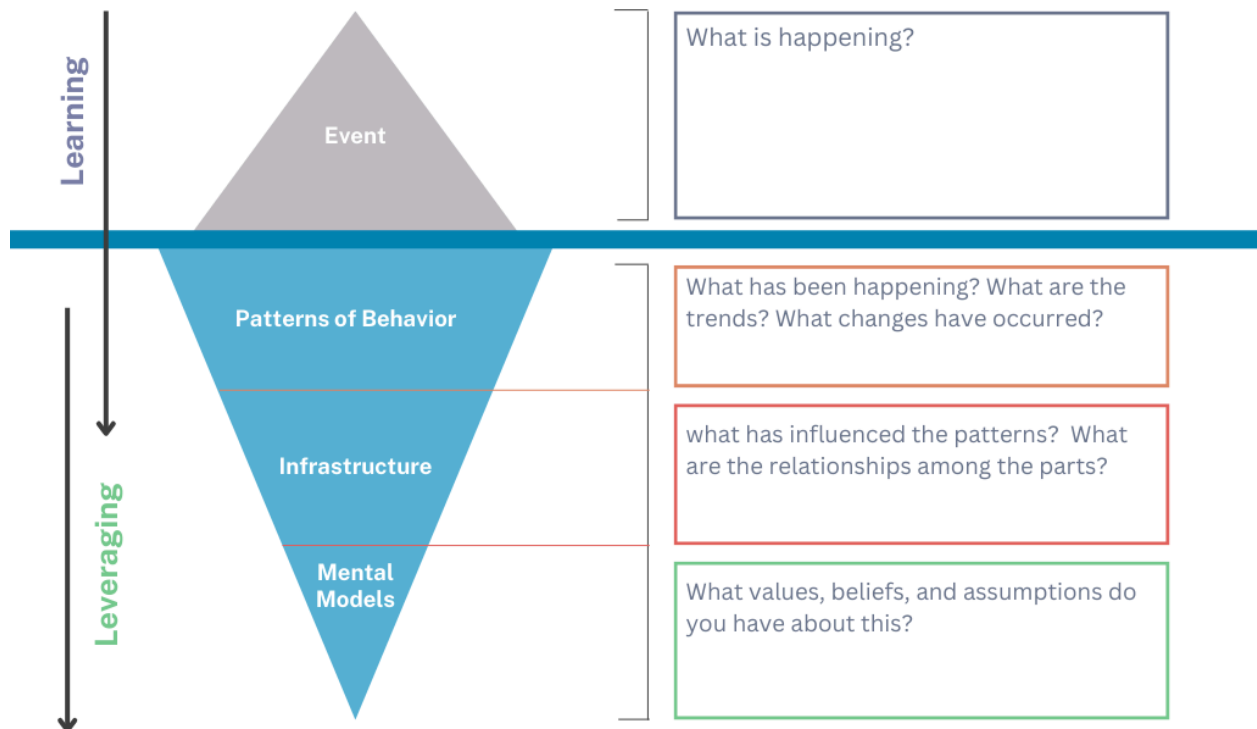
Sometimes, the team may generate multiple answers when asking, "Why?" The team can either prioritize one response to follow or consider following through the Five Whys with multiple responses. For the latter, use a separate worksheet for each new response as needed.

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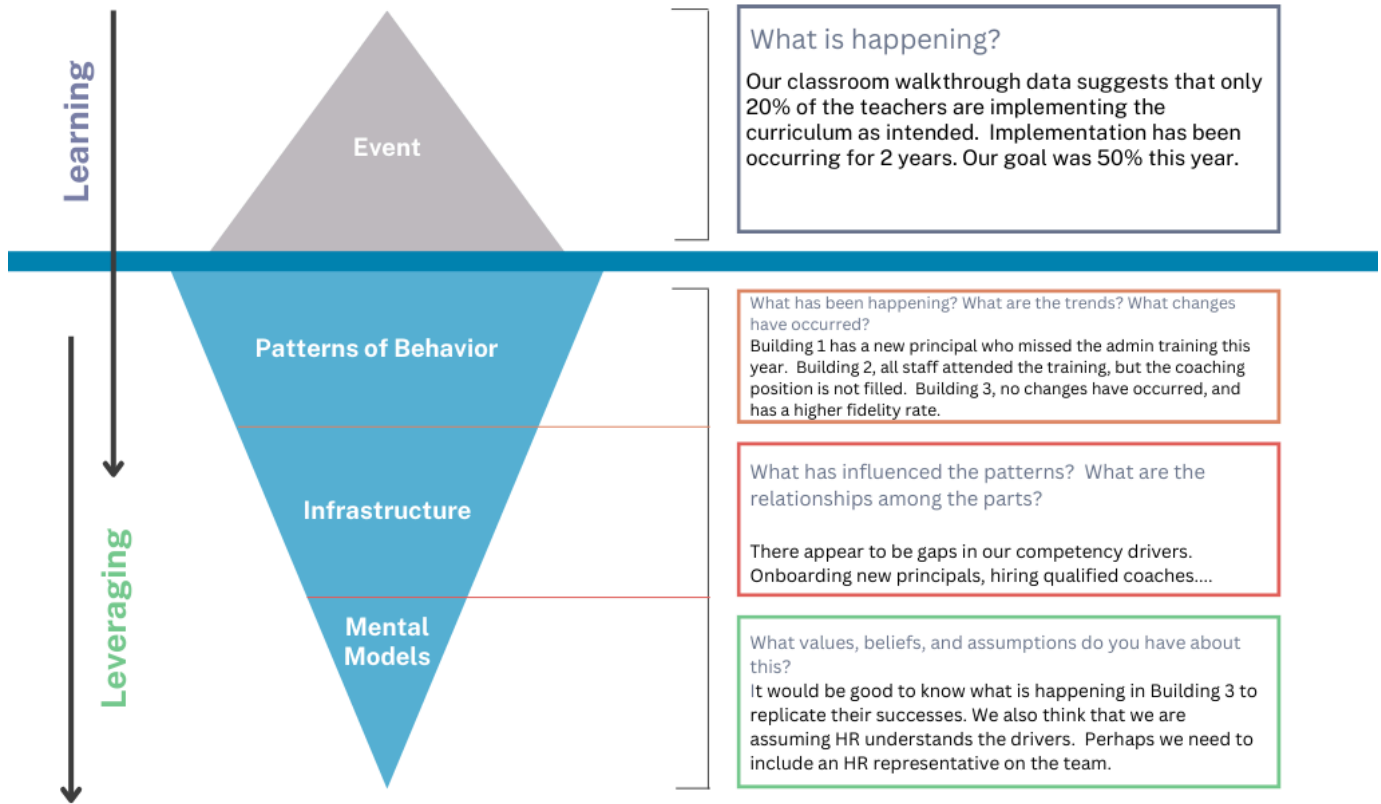
The Iceberg - Overview

The Iceberg Model (Goodman, 2002) was developed to assist teams in moving beyond the obvious (identified concerns or symptoms) and to deeper conversations below the surface. It allows a team to uncover the patterns of behavior that might be causing the problems, supporting infrastructure that may need to be addressed, and assumptions that the team may be holding (Association for Supervision and Curriculum Development, 2009*)*. Begin by discussing what is happening and then move through each layer of the iceberg underneath the water line. When finished, identify your causes.

The Iceberg - Protocol

Iceberg Discussion

Iceberg Discussion

Learning

Leveraging

Event

Patterns of Behavior

Infrastructure

Mental Models

What is happening?
Our classroom walkthrough data suggests that only 20% of the teachers are implementing the curriculum as intended. Implementation has been occurring for 2 years. Our goal was 50% this year.

What has been happening? What are the trends? What changes have occurred?
Building 1 has a new principal who missed the admin training this year. Building 2, all staff attended the training, but the coaching position is not filled. Building 3, no changes have occurred, and has a higher fidelity rate.

What has influenced the patterns? What are the relationships among the parts?

There appear to be gaps in our competency drivers. Onboarding new principals, hiring qualified coaches….

What values, beliefs, and assumptions do you have about this?
It would be good to know what is happening in Building 3 to replicate their successes. We also think that we are assuming HR understands the drivers. Perhaps we need to include an HR representative on the team.
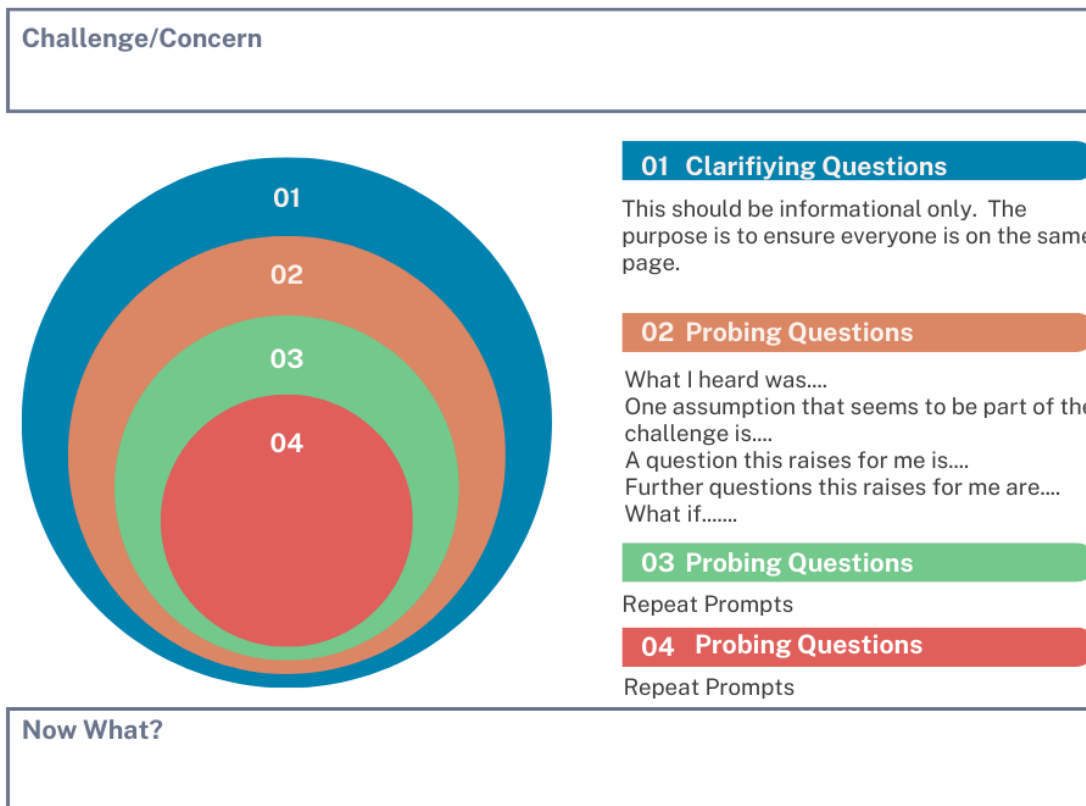
In this example, you can see that on the surface, it appears as if teachers are simply not using the curriculum. But as you go deeper into the iceberg, you find out that perhaps this is a barrier between the implementation team and needing an HR representative on the team to address the competency drivers.

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Peeling the Onion - Overview

Peeling the Onion, developed by the Center for Leadership & Educational Equity (2015), allows you to break down each layer of the concern to avoid identifying the problem immediately. The team must pause and question deeply to understand each issue and see what lies beneath the surface. The Probing Questions are repeated for at least three layers but can be repeated until everyone feels it is complete.
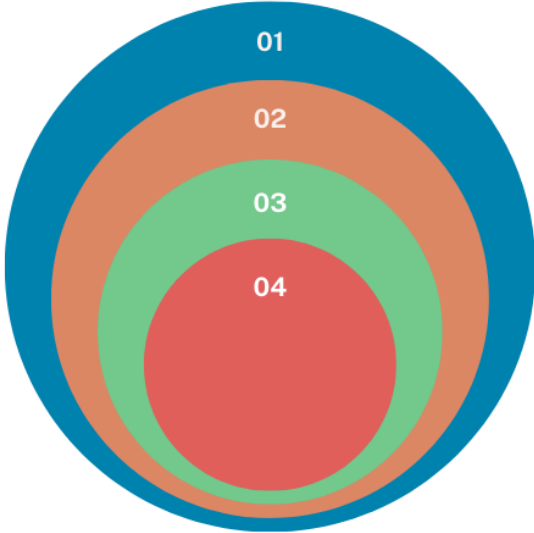
Peeling the Onion - Protocol

Peeling the Onion

Challenge/Concern

01 Clarifiying Questions

This should be informational only. The purpose is to ensure everyone is on the same page.

02 Probing Questions

What I heard was....
One assumption that seems to be part of the challenge is....
A question this raises for me is....
Further questions this raises for me are....
What if.......

03 Probing Questions

Repeat Prompts

04 Probing Questions

Repeat Prompts

Now What?

Peeling the Onion - Example

Peeling the Onion

Challenge/Concern	Less than 70% of teachers have completed state mandated professional learning on instructional reading practices.

01 Clarifying Questions
What practices are mandated with the professional learning?
What staff need to be trained according to the mandate?
What support is the state providing for professional learning?
What is the timeframe for implementing the mandate?

02 Probing Questions Training
What I heard is all elementary teachers must be trained?
One assumption that seems to be part of the challenge is teachers lack foundational knowledge required to complete the training.
A question this raises for me -how is the training structured?
Further questions this raises - Can teachers complete training activities in teams? How are teachers being supported?
What if there is teacher turnover during the year? Starting next year?

03 Probing Questions Coaching
Repeat Prompts

04 Probing Questions Resources
Repeat Prompts

Now What?

In this example, you can see that by breaking the challenge of less than 70% of teachers completing the mandated reading instructional practices professional learning into layers, the team can clarify important components of the training mandate and examine different aspects within current practices to identify barriers and effectively identify action steps to improve training outcomes.

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