

Consolidating Your Understanding of a Problem Within Your System By Using Fishbone Diagrams

3/28/22

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Session Objectives

- Recognize importance of taking a systems-view when understanding complex problems
- Understand that Causal System Analysis (CSA) involves leveraging different perspectives and using various tools flexibly
- Develop a fishbone diagram to investigate potential root-causes of a problem



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Some Community Agreements

- Be fully present
- Share the air
- Be respectful of varying views
- Practice curiosity



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Icebreaker Introduction (~1 minute)

1. Introduce yourself (Name, Role, Organization)
2. Respond to this prompt:

Identify one to two words to describe a recent experience solving a complex problem in partnership with others (e.g., co-workers, friends, family)

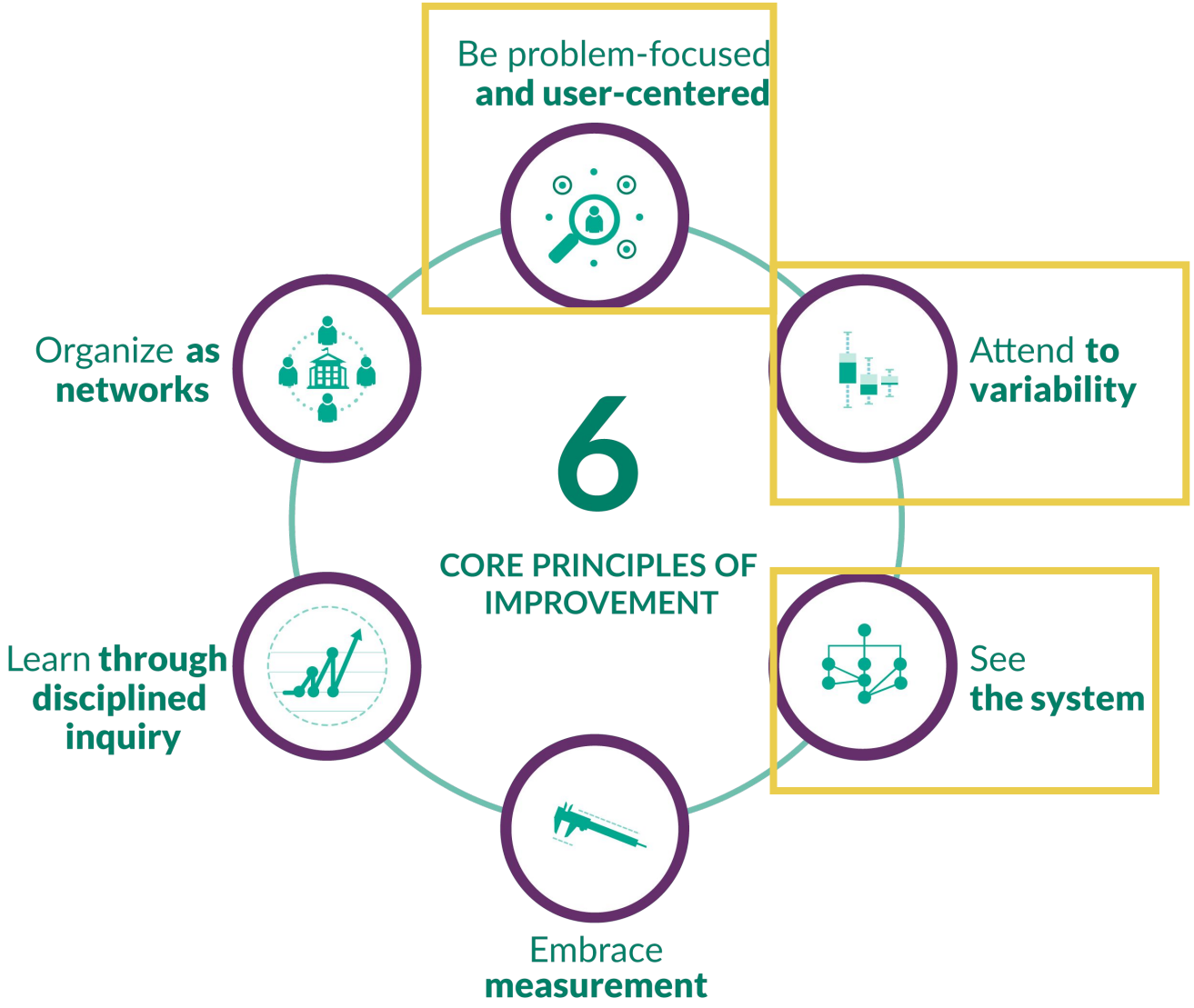


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6 Principles of Improvement

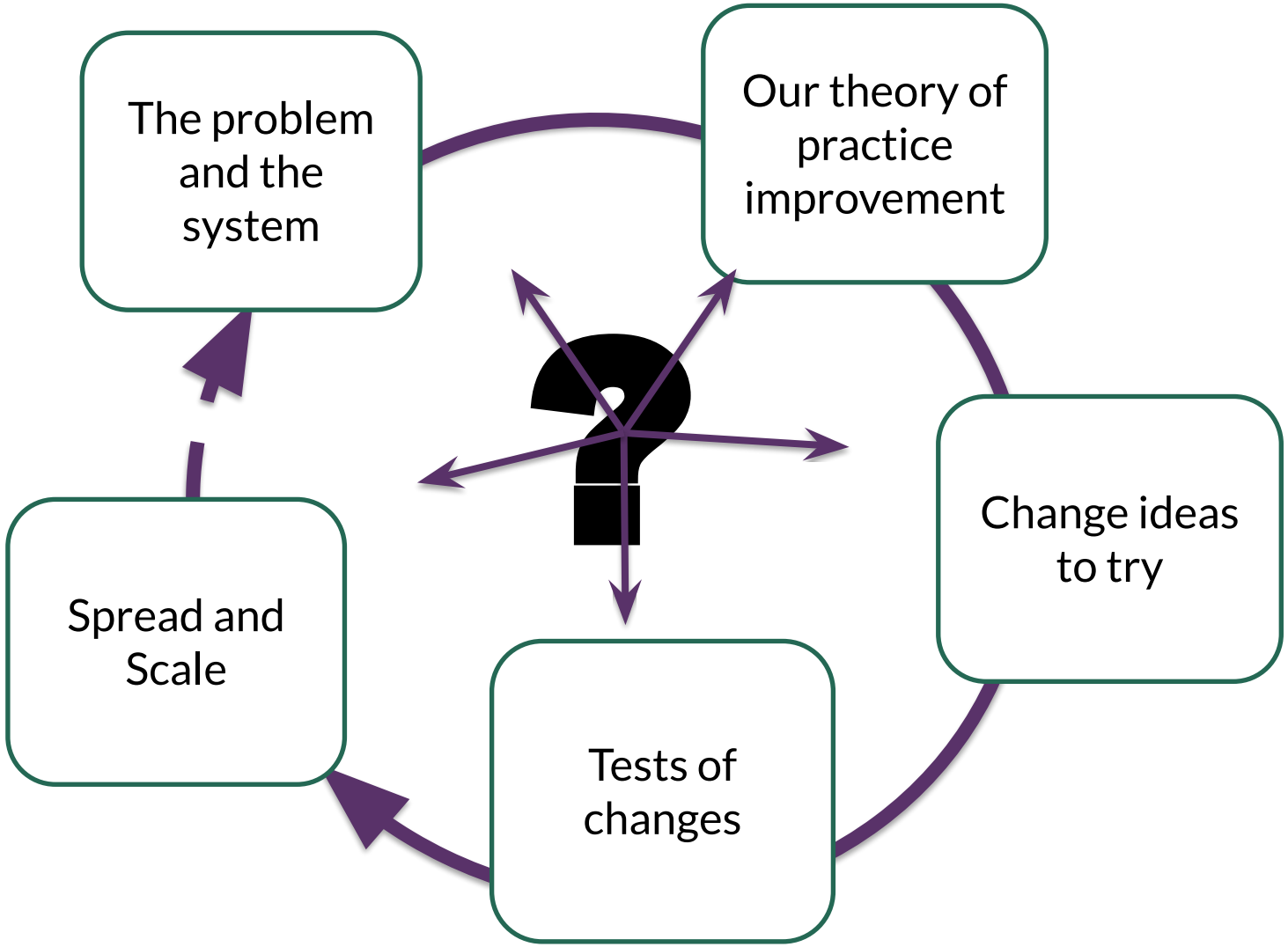


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What next?

Determining our next step means we need to know more about…



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What is a **System?**



An interdependent set of **interactions among people**, the **tools and materials** they have at their disposal, and the **processes** through which they all join together to accomplish work.

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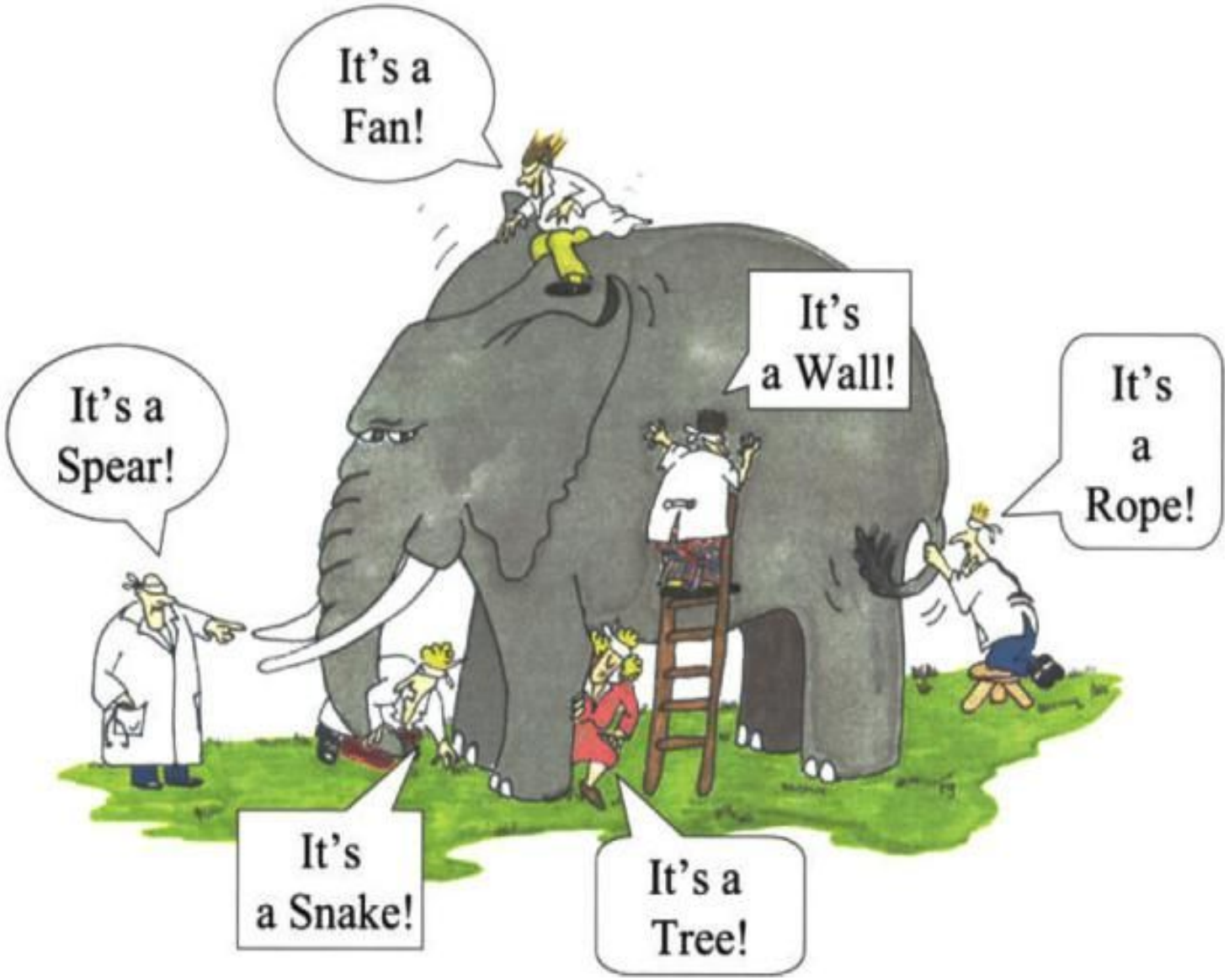
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"Every system is perfectly designed to achieve exactly the results it gets."

-Paul Batalden



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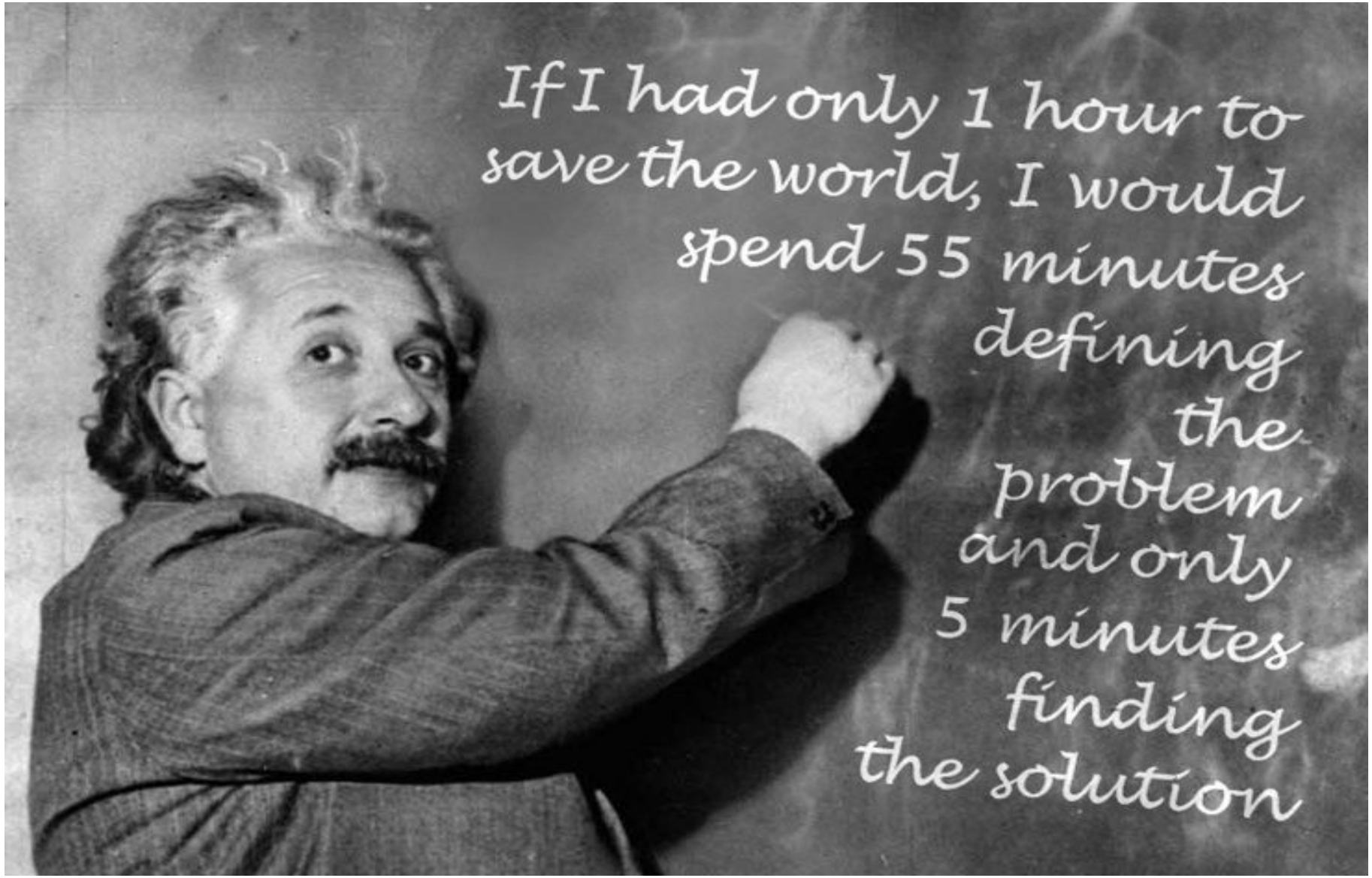


By the very nature of systems, each of us only sees a part of the system. The problem is, the part we see is very compelling.

Peter Senge

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Causal System Analysis

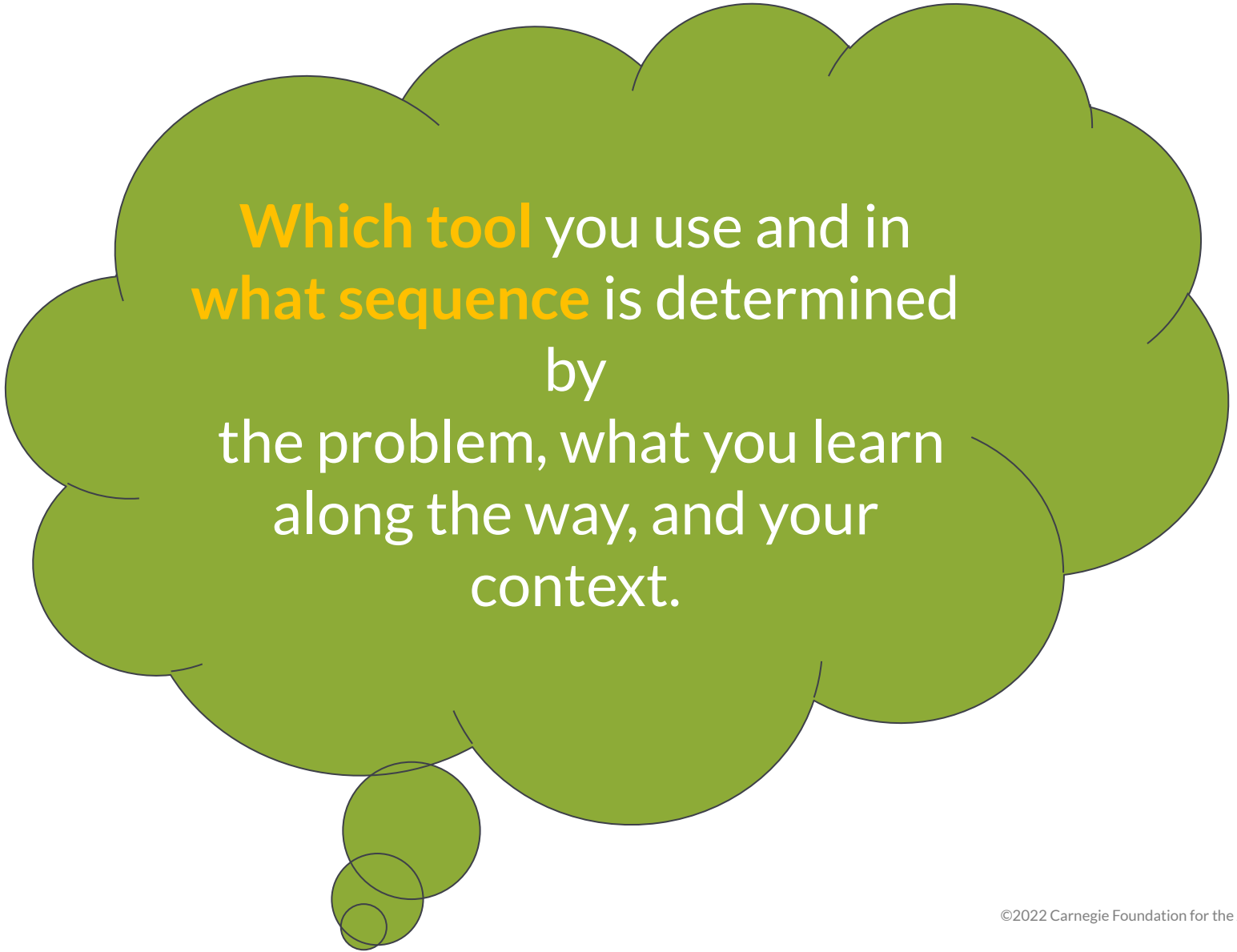


Let's go investigate.

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Tools for Undertaking Causal Systems Analysis

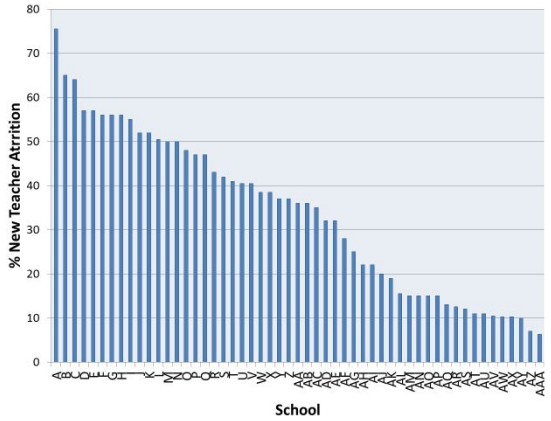


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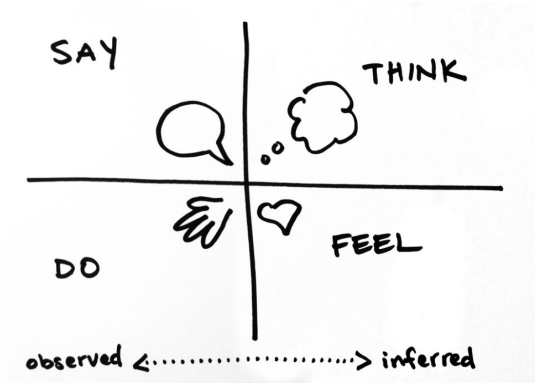
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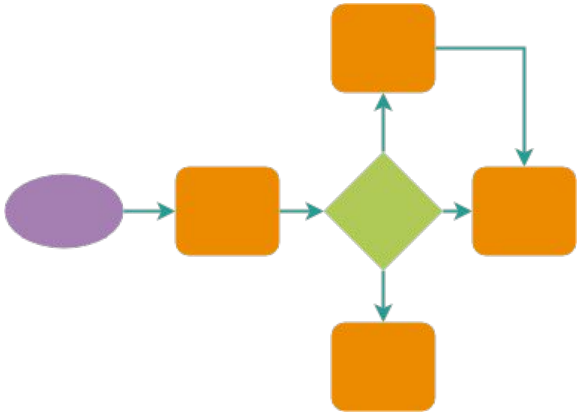


Local Data



Empathy Research





How the Work Gets Done

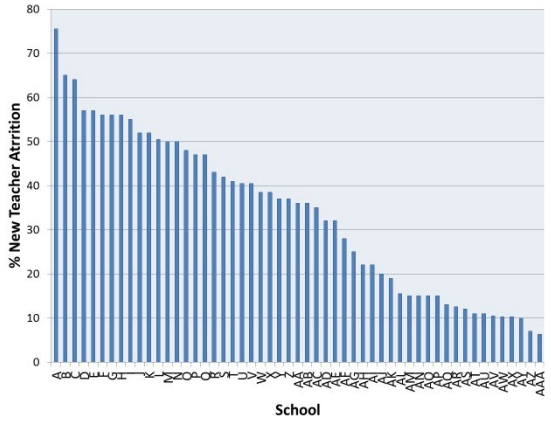




Scanning Outside Your Organization

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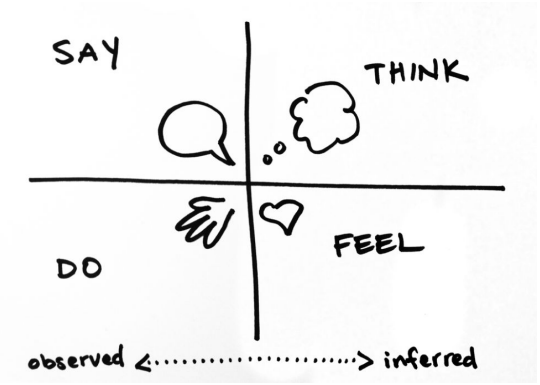
Tools for Undertaking Causal System Analysis

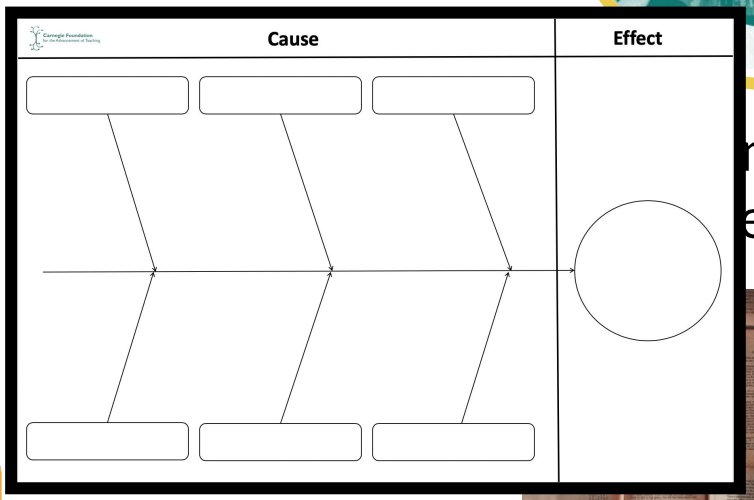


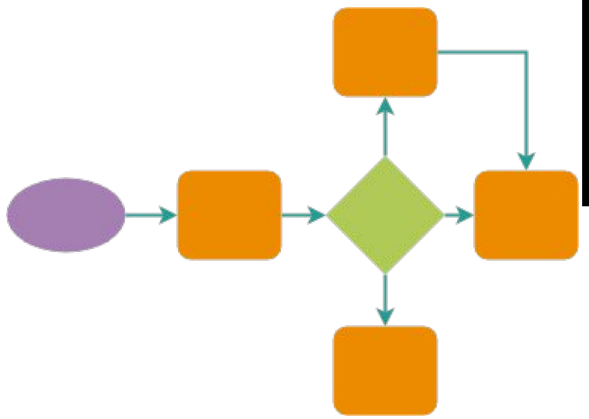
Local Data



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How the Work Gets Done



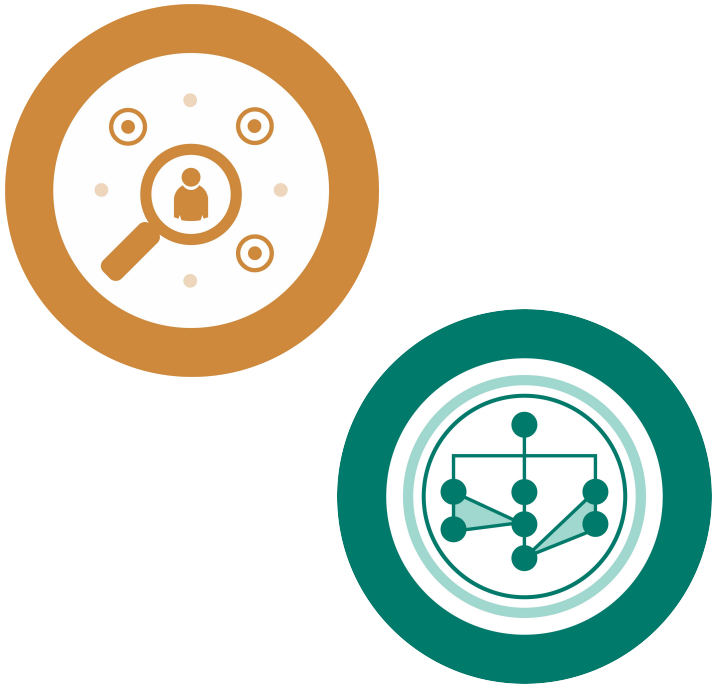


Scanning Outside Your Organization

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Tools for Undertaking Causal System Analysis



- Different tools support different activities: focusing or flaring
- Guided by the question, "What do I need to learn next?"

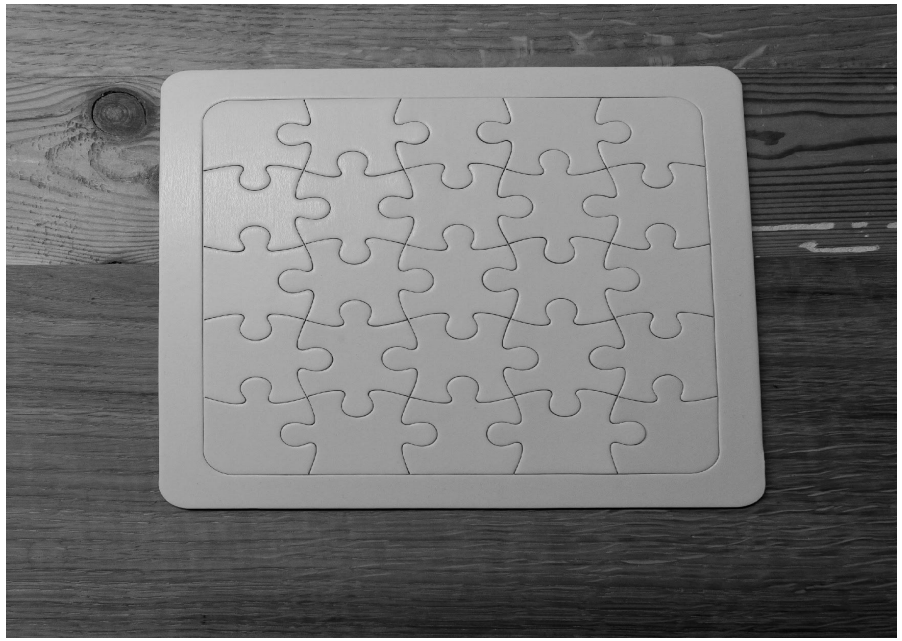
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What Do You Want To Learn?

Expansive View



- Data trends and patterns
- Empathy research techniques

Focused View



- Specific subgroup analyses
- Process maps

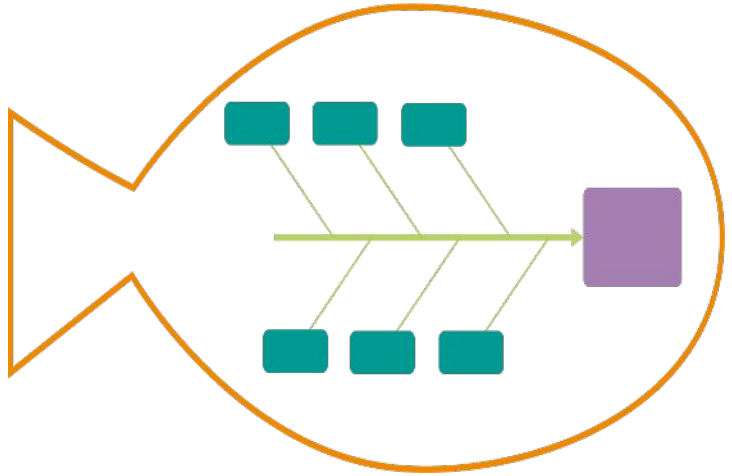
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Brainstorming Root Causes: Fishbone Diagram

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What is it?

A summary of a group's understanding about the causes of the current problem



Why is it useful?

- Visualizes the causes of a problem at a high level
- Helps with scoping and identifying areas to dig in deeper
- Builds consensus in the group

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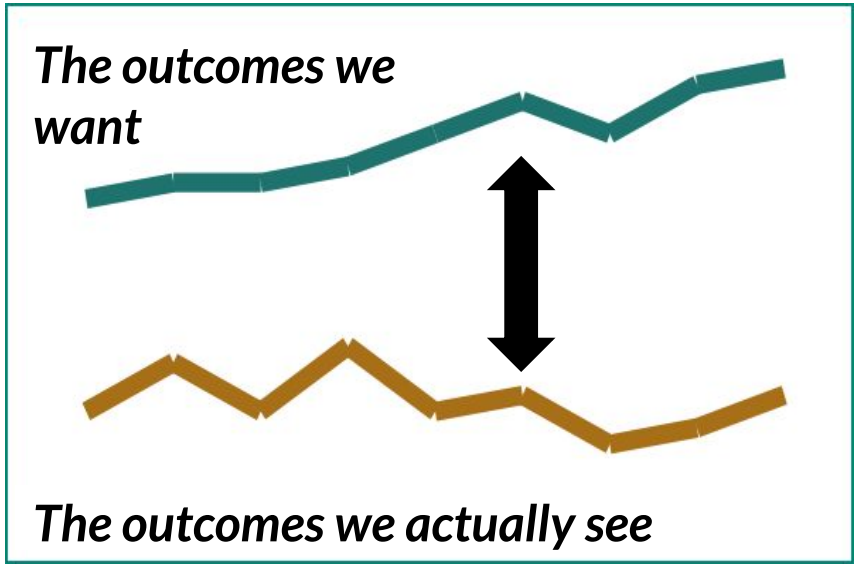
How to Build a Fishbone Diagram

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1) Clear PROBLEM STATEMENT

2) Brainstorm potential causes





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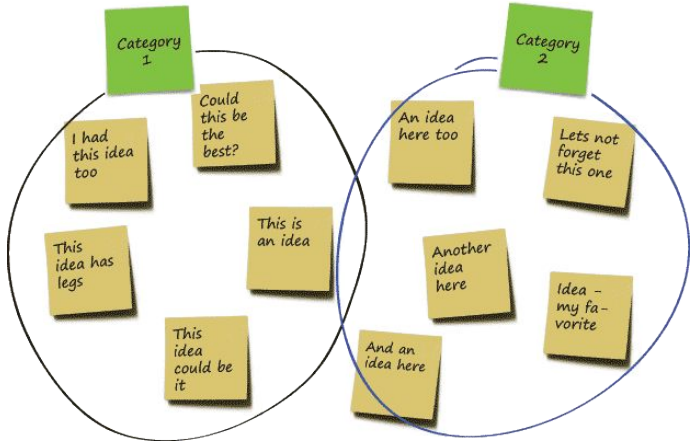
How to Build a Fishbone Diagram

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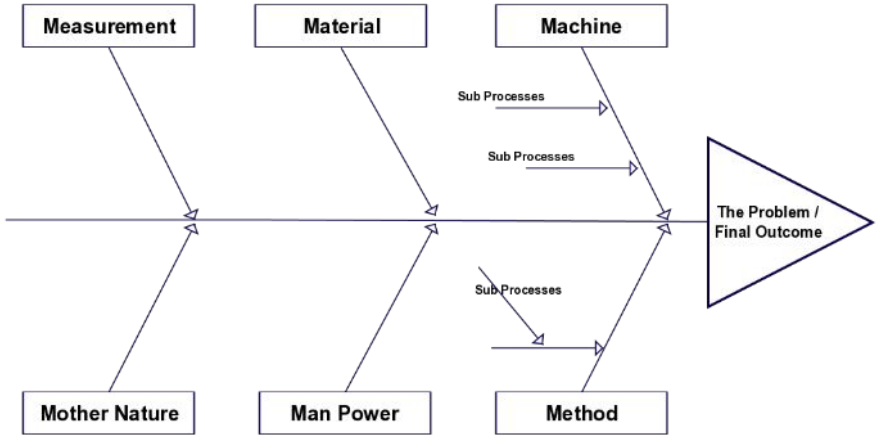
1) Clear PROBLEM STATEMENT

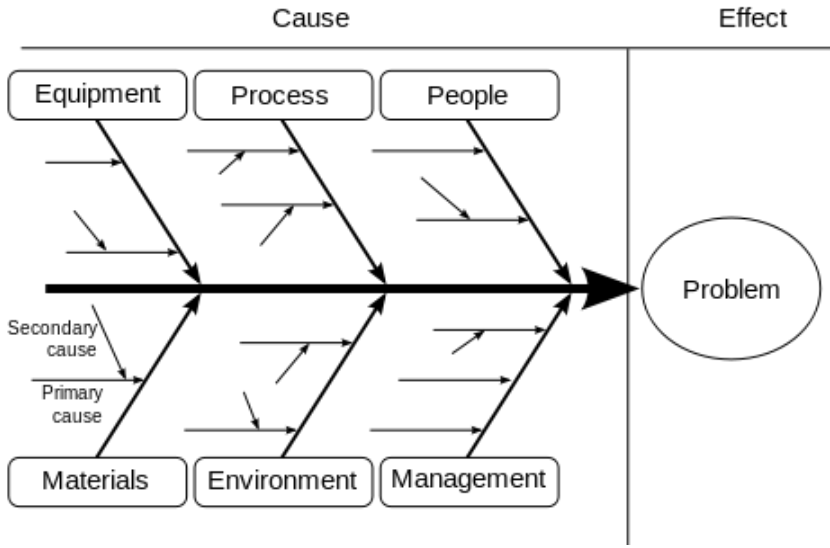


3) Categorize



COMMON CATEGORIES





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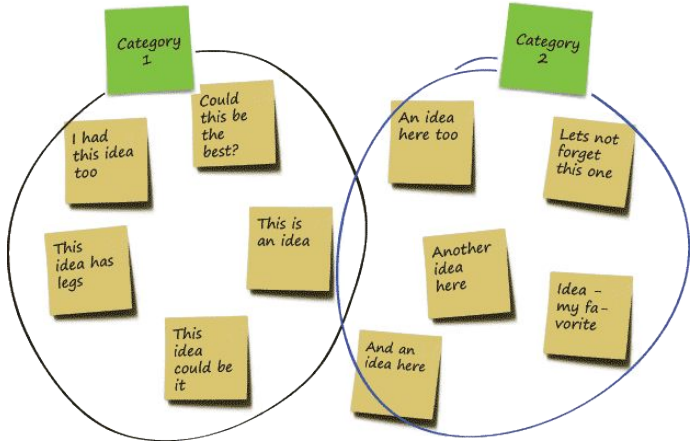
How to Build a Fishbone Diagram

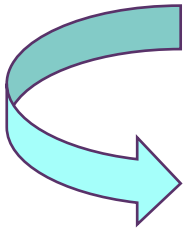
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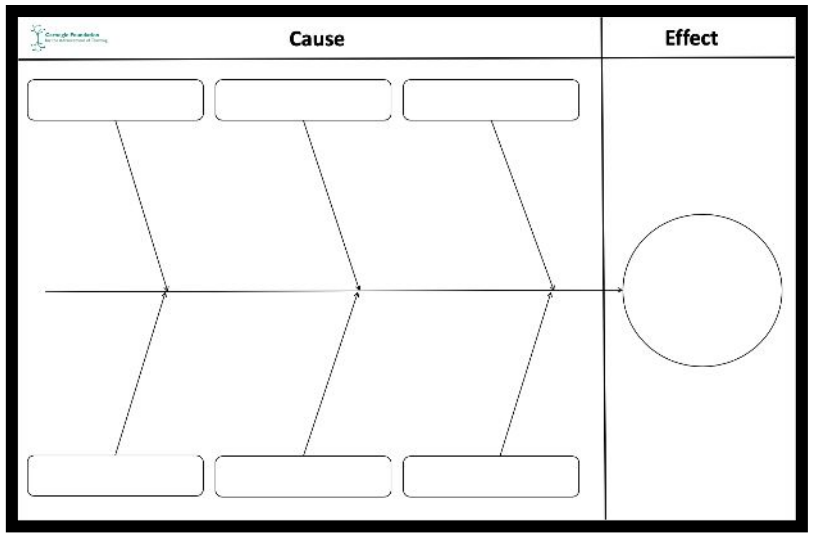
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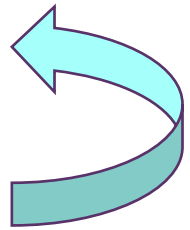


3) Categorize









5) TEST!!

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Tips for Building a Fishbone Diagram

- Avoid SOLUTIONITIS
- Identify multiple potential causes
- Keep an open mind
- Consider a variety of perspectives
- Stay user-centered
- Use available data



Remember: Definitely incomplete and possibly wrong

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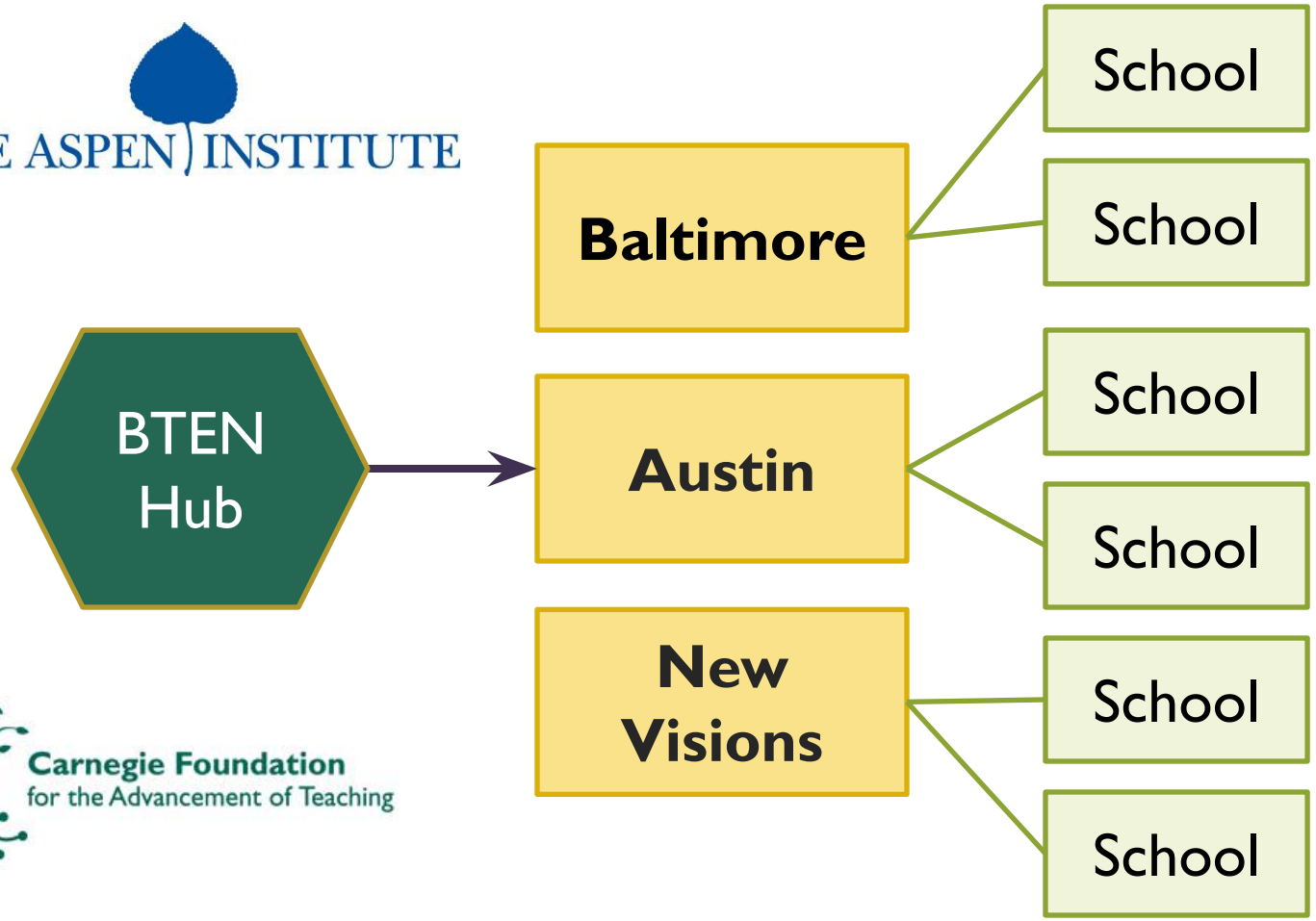
Building a Teaching Effectiveness Network (BTEN)

New teacher efficacy and retention

THE ASPEN INSTITUTE

AMERICAN FEDERATION OF TEACHERS AFL-CIO

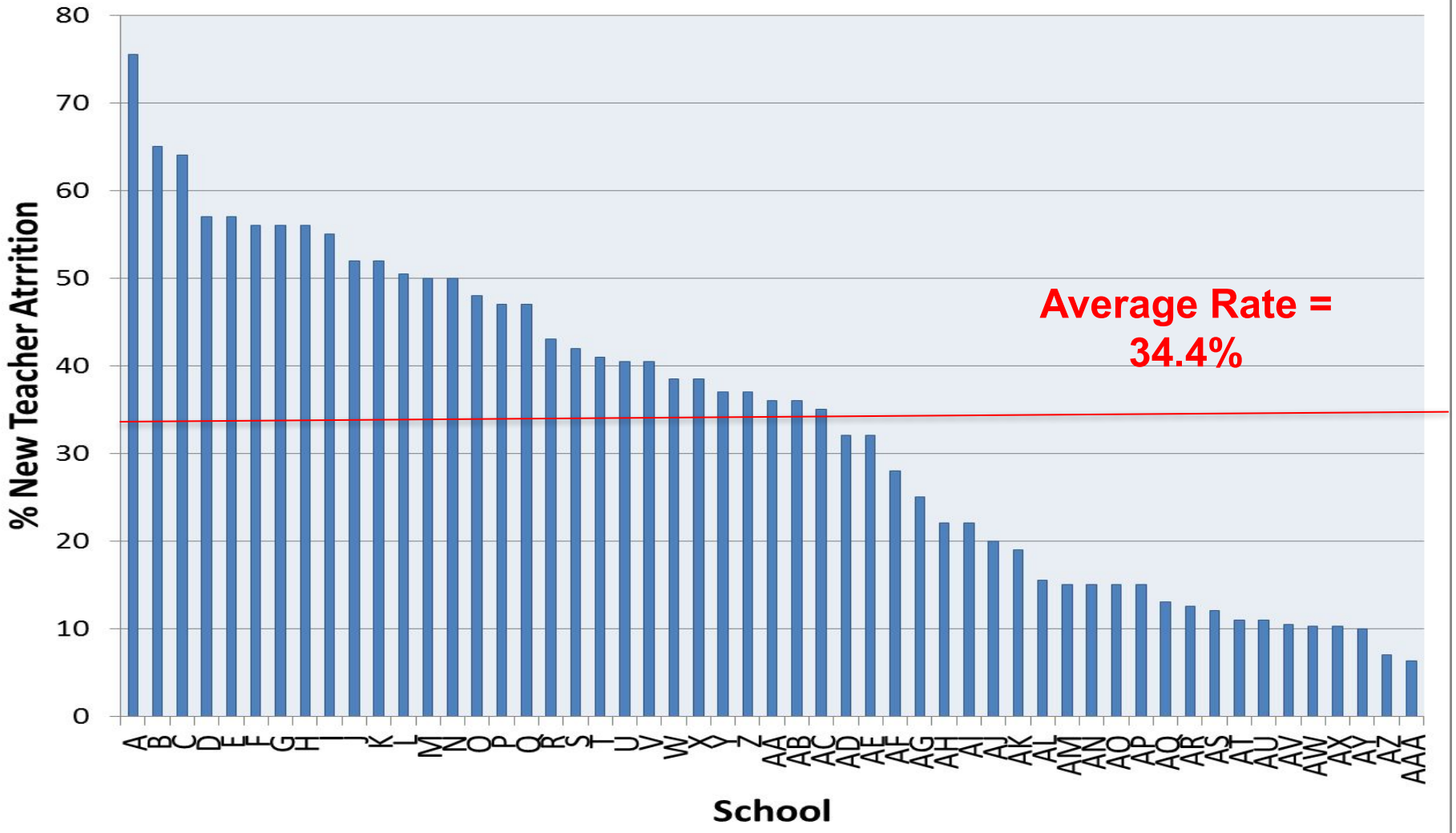
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New Teacher Attrition by School Since 2013



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You are a group of the central office leaders at a major school district. You realize that you have a new teacher retention problem. Of the teachers that started teaching in 2013, 34% of them have left!

Reflection

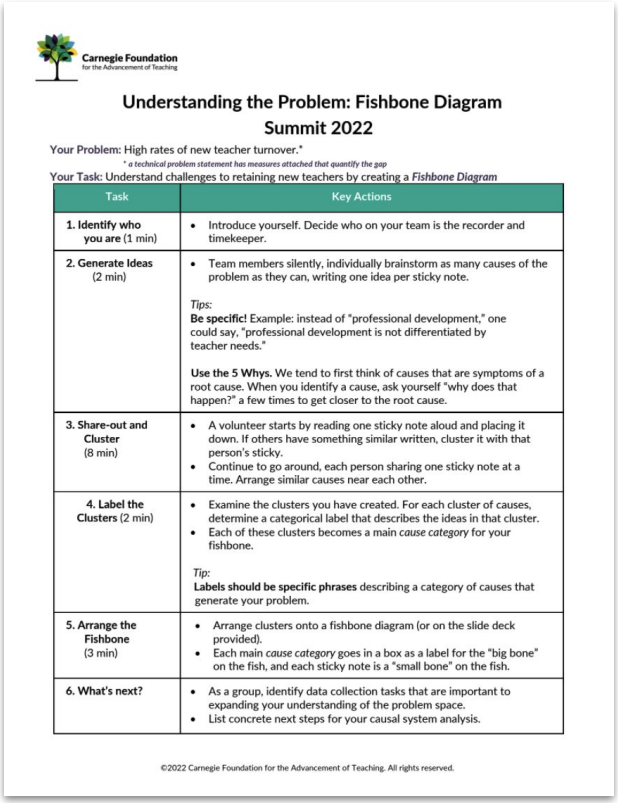
What do you think is causing the problem?

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Group Activity: Build a Fishbone Diagram

In small groups, follow the steps below to identify causes of the teacher retention problem:

1) Identify who will be the recorder and timekeeper
2) Document ideas on sticky notes (2 min)
3) Share-out causes and cluster (8 min)
4) Label clusters (2 min)
5) Arrange the clusters onto the Fishbone Diagram (3 min)



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Understanding the Problem: Fishbone Diagram
Summit 2022

Your Problem: High rates of new teacher turnover.*
** a technical problem statement has measures attached that quantify the gap*

Your Task: Understand challenges to retaining new teachers by creating a ***Fishbone Diagram***

Task	Key Actions
1. Identify who you are (1 min)	• Introduce yourself. Decide who on your team is the recorder and timekeeper.
2. Generate Ideas (2 min)	• Team members silently, individually brainstorm as many causes of the problem as they can, writing one idea per sticky note. *Tips:* **Be specific!** Example: instead of "professional development," one could say, "professional development is not differentiated by teacher needs." **Use the 5 Whys.** We tend to first think of causes that are symptoms of a root cause. When you identify a cause, ask yourself "why does that happen?" a few times to get closer to the root cause.
3. Share-out and Cluster (8 min)	• A volunteer starts by reading one sticky note aloud and placing it down. If others have something similar written, cluster it with that person's sticky. • Continue to go around, each person sharing one sticky note at a time. Arrange similar causes near each other.
4. Label the Clusters (2 min)	• Examine the clusters you have created. For each cluster of causes, determine a categorical label that describes the ideas in that cluster. • Each of these clusters becomes a main *cause category* for your fishbone. *Tip:* **Labels should be specific phrases** describing a category of causes that generate your problem.
5. Arrange the Fishbone (3 min)	• Arrange clusters onto a fishbone diagram (or on the slide deck provided). • Each main *cause category* goes in a box as a label for the "big bone" on the fish, and each sticky note is a "small bone" on the fish.
6. What's next?	• As a group, identify data collection tasks that are important to expanding your understanding of the problem space. • List concrete next steps for your causal system analysis.

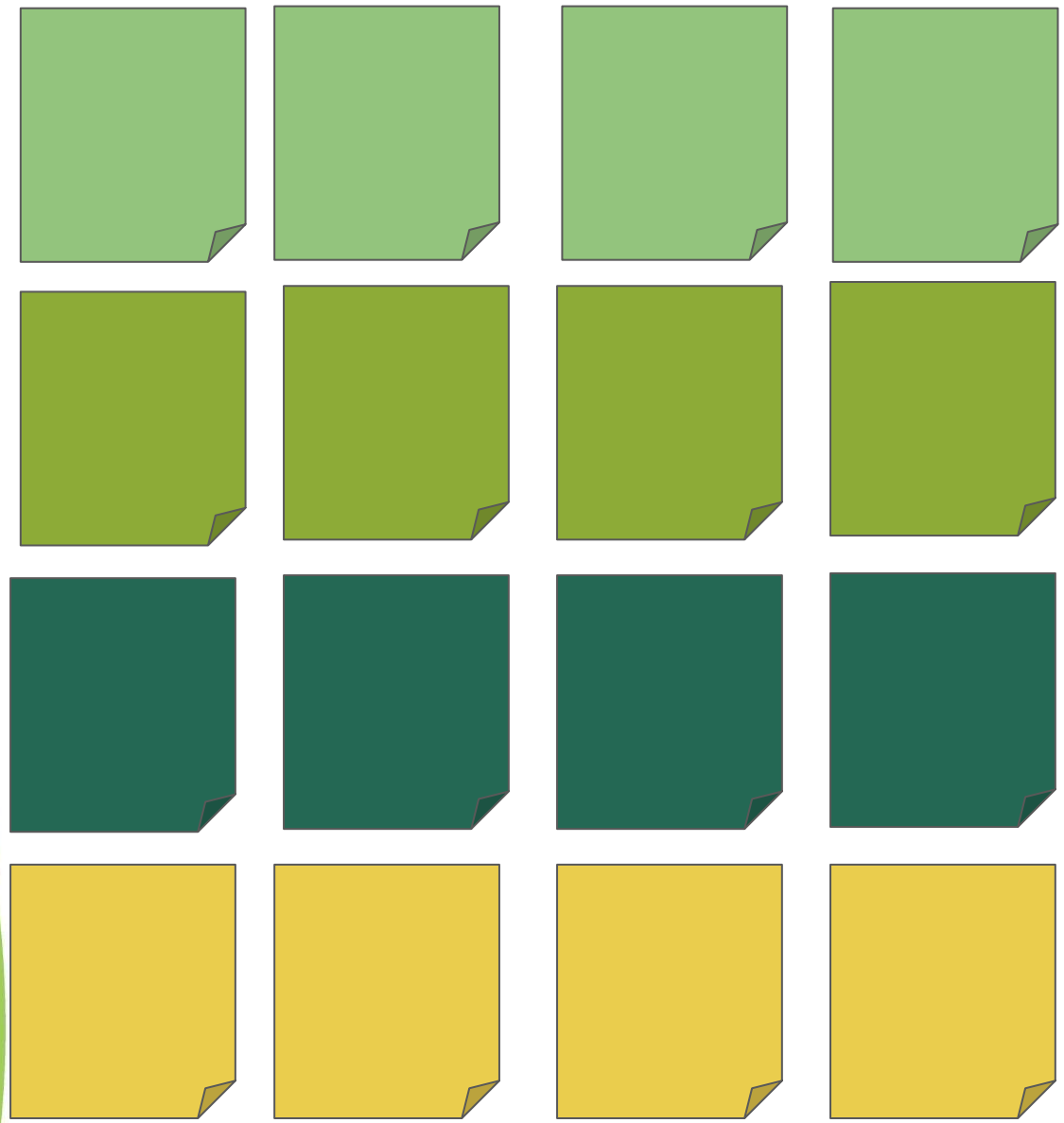
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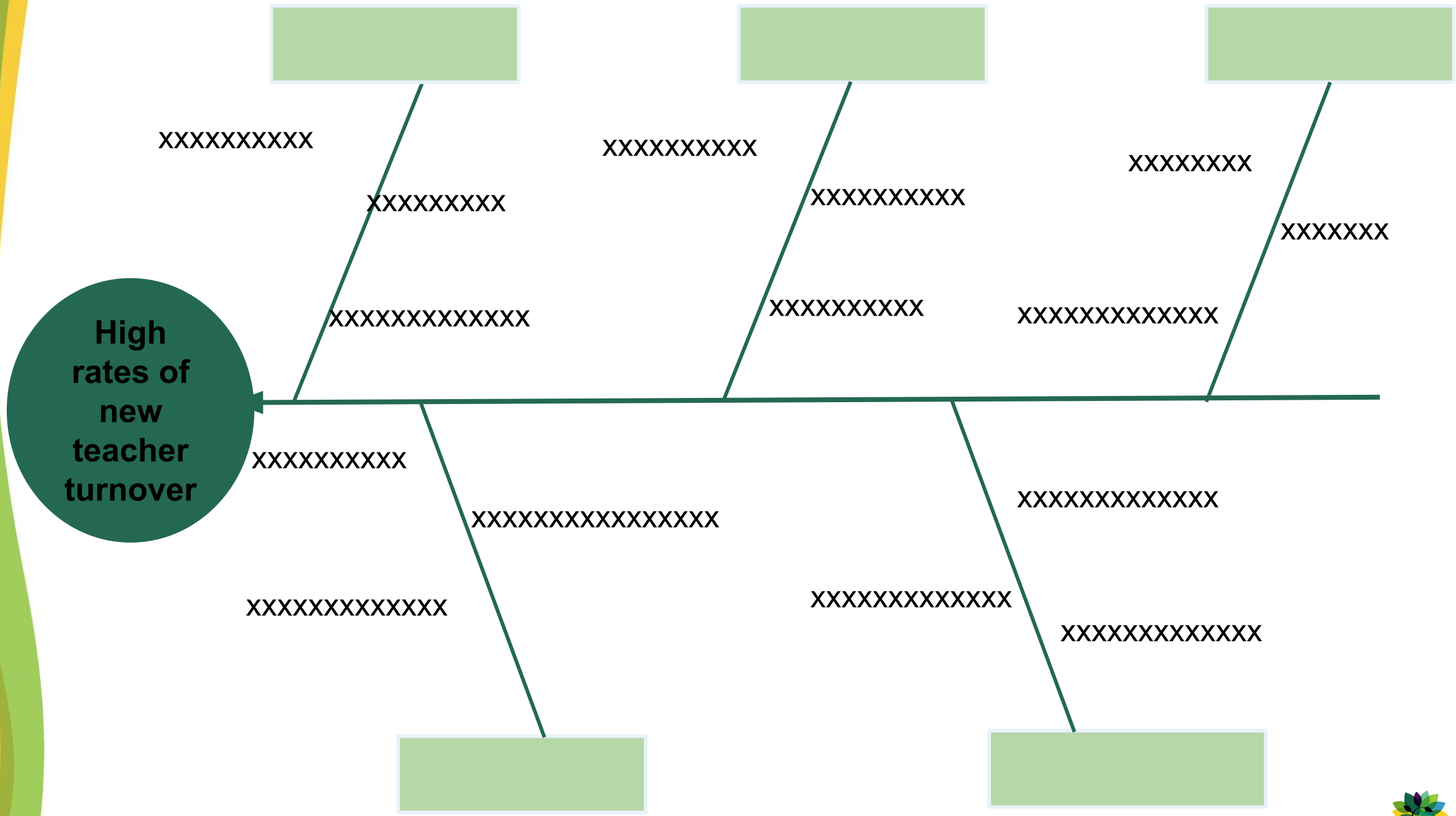
Brainstorm



Group

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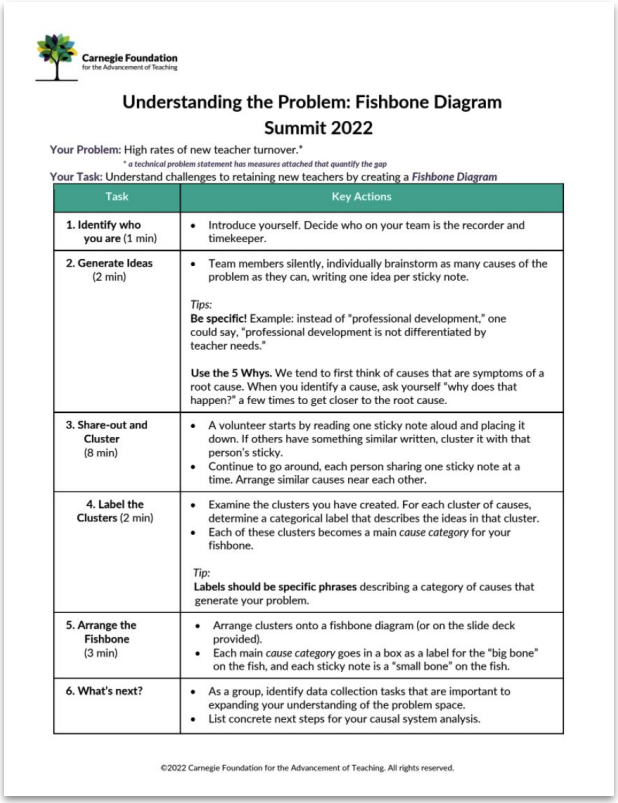


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Chat About It!

- What else do we need to learn?
- Who do we need to talk to?

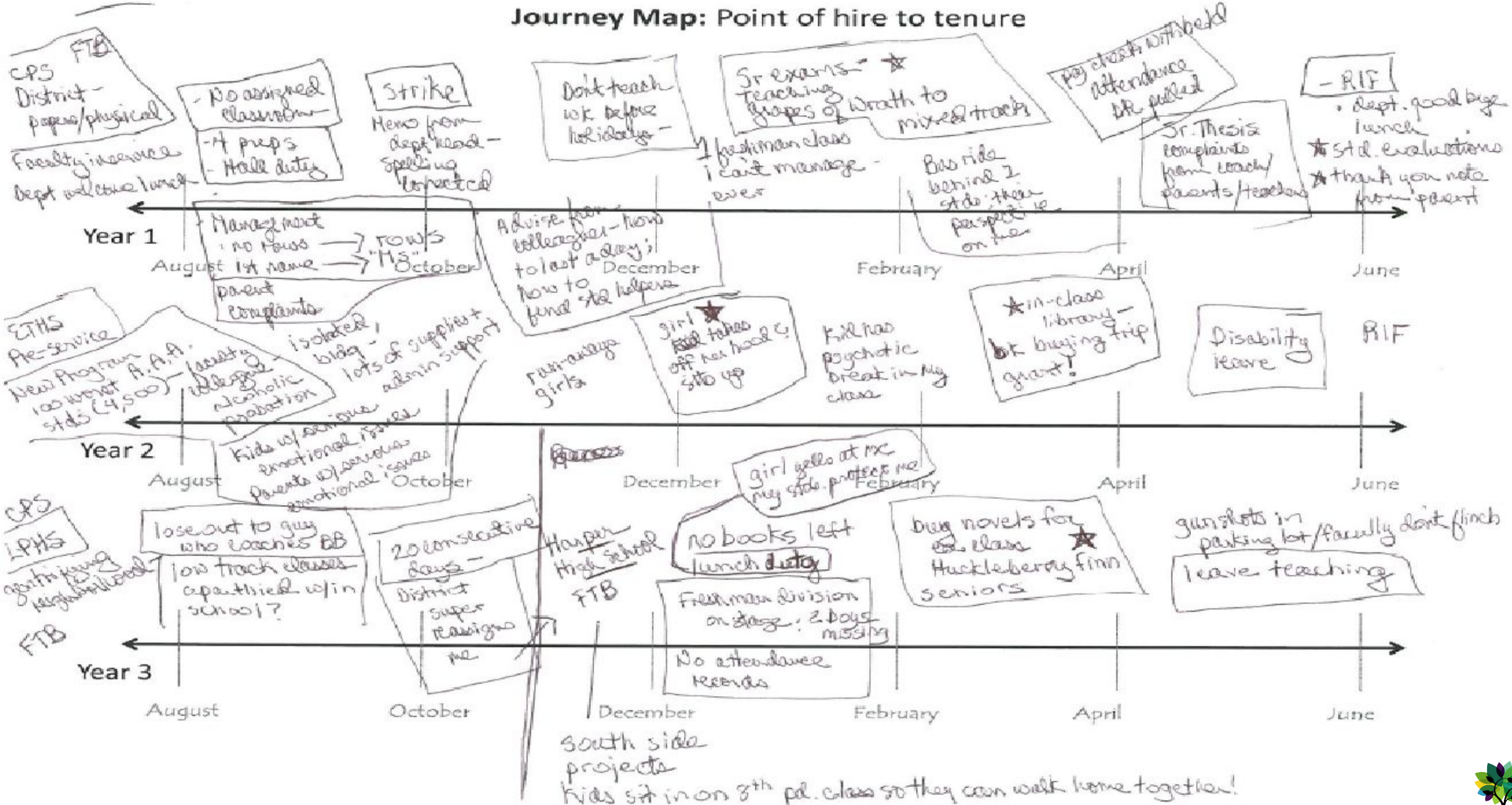


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Sharon

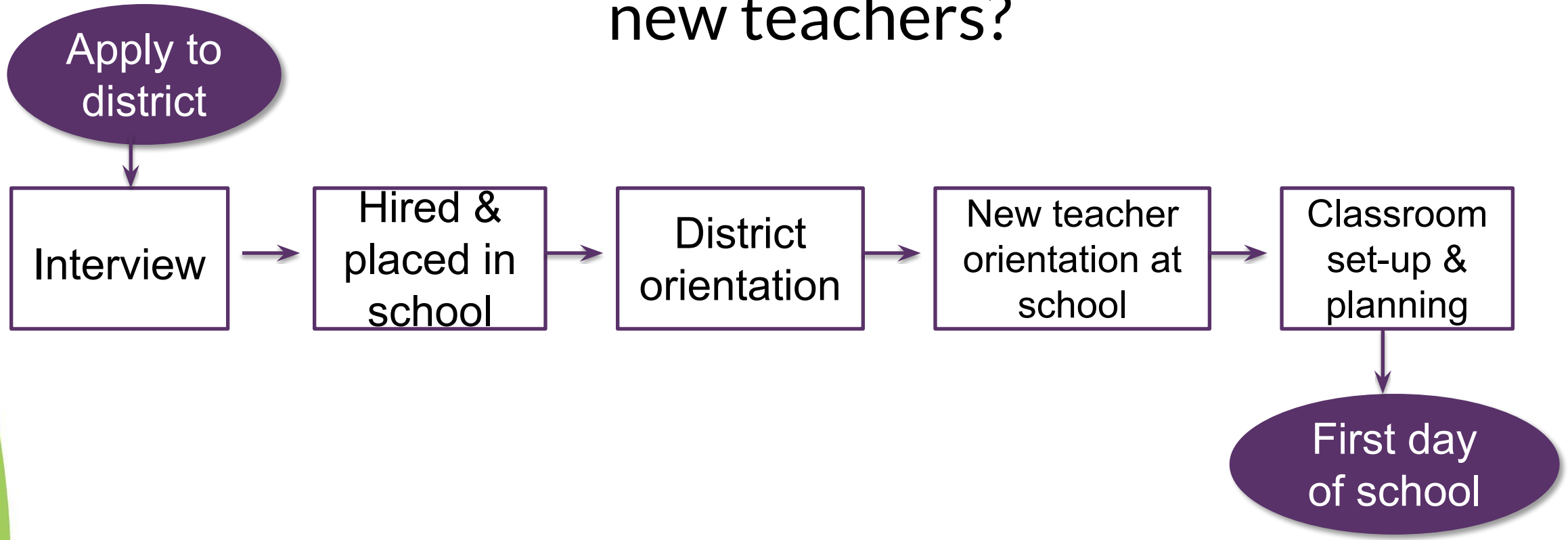
Journey Map: Point of hire to tenure



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High Level Process Map

Where in this process would supports be important to new teachers?



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Discussion

How do we use the information we gathered to strengthen our fishbone?

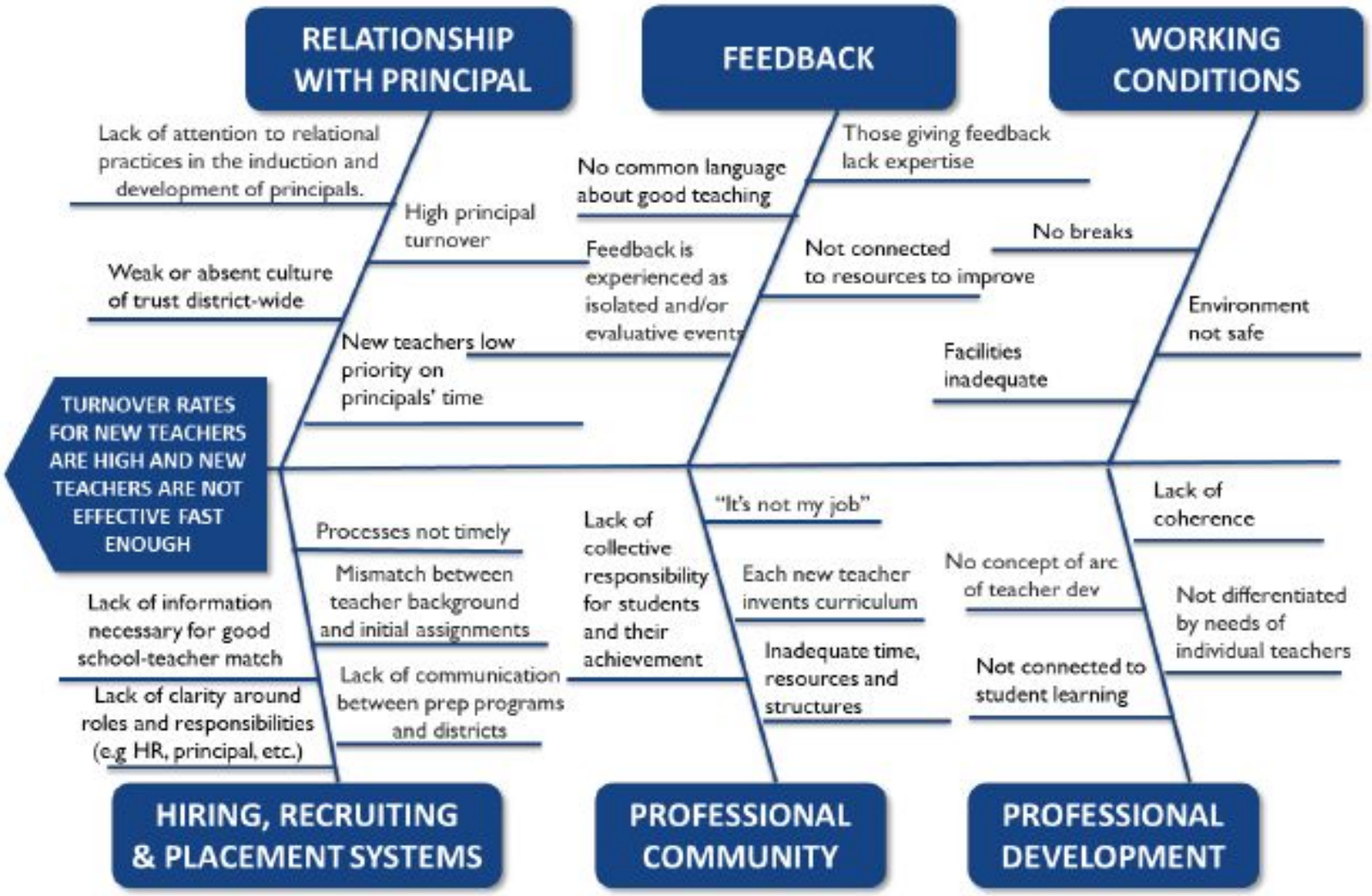
Why might it be important to gather more information once we have drafted the initial root causes?

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Example of Fishbone Diagrams



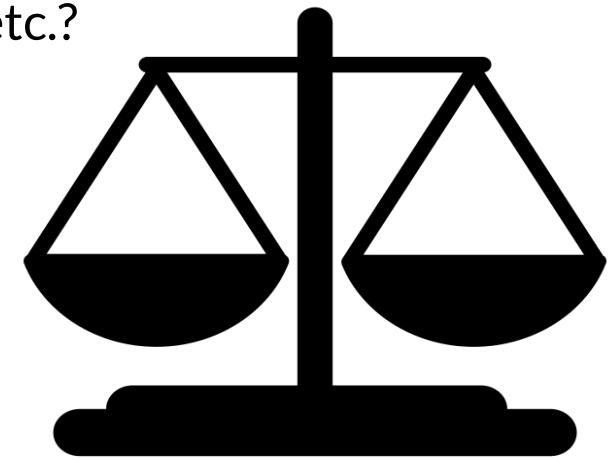
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Some Equity Considerations

- Whose “voices” and perspectives, if any, might be missing from your understanding of the problem and the system? How might your team incorporate the knowledge, skills, and expertise of these stakeholders?

- What might be your potential blindspots in understanding the problem and system given your role, status, experience, identity, etc.?



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Pause and Reflect: Private Write (~ 2 min)

- What is the problem of practice you're currently tackling?
- What do you know about this problem? Where are your knowledge gaps?
- In what ways might these problem investigation tools be useful in advancing your understanding of the problem and the system in which it occurs?

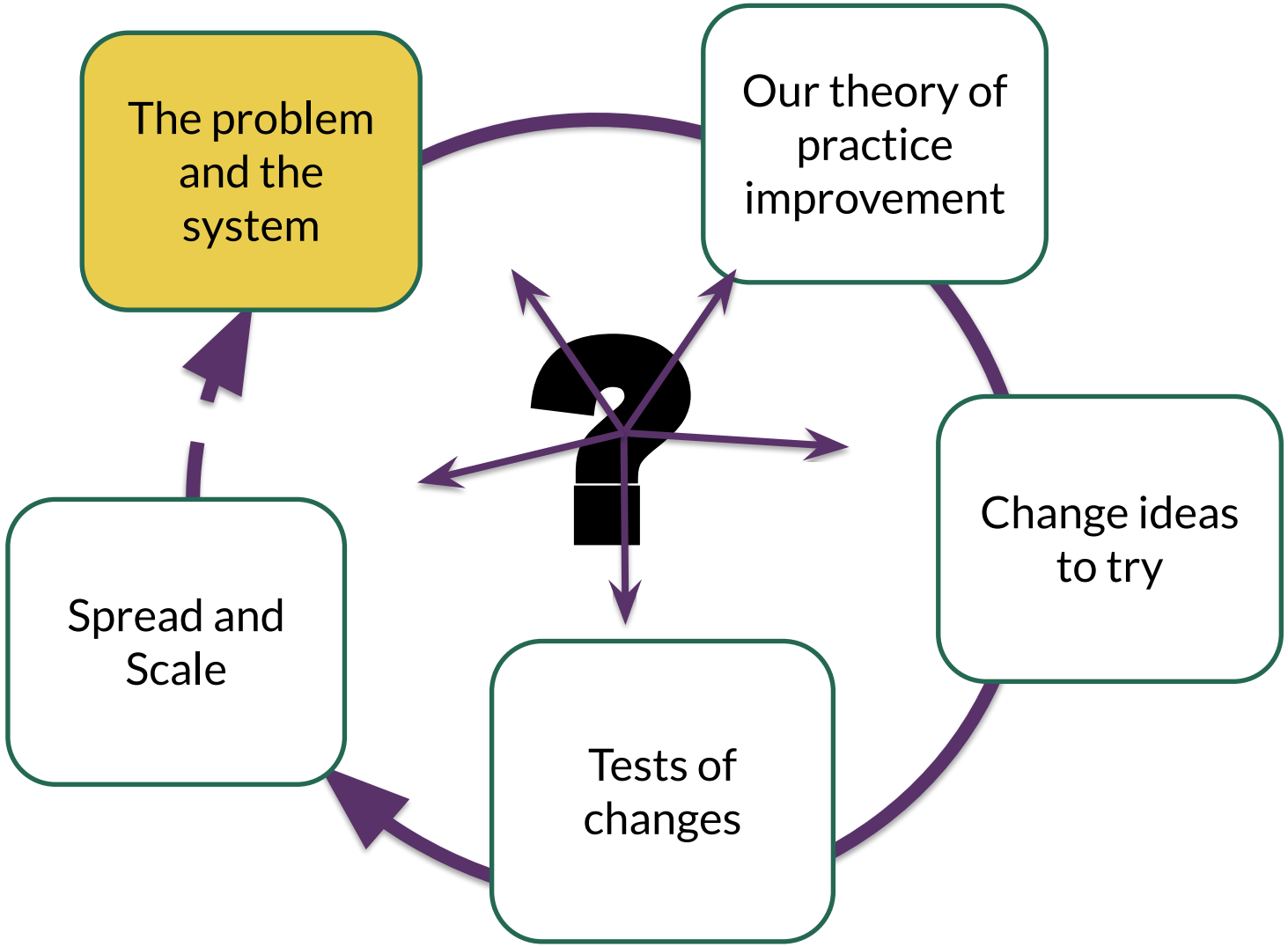


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What next?

Determining our next step means we need to know more about…



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Some Key Takeaways

- Diagnose a problem and the system in which it occurs carefully before attempting solutions
- A variety of problem investigation tools exist; the tool you use depends on what you want to learn
- Be mindful of "analysis paralysis;" sometimes trying a change idea can yield significant understanding



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