



WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION

RESOURCE

The Fishbone Diagram: Root Cause Analysis in Comprehensive School Mental Health

Purpose

The fishbone diagram, or cause and effect diagram, helps teams to engage in root cause analysis through visual exploration of the relationship between a problem and its potential causes (Bennet et al. 2022). By exploring shared assumptions about the underlying factors contributing to a problem and organizing them in a meaningful way, teams can quickly generate useful solutions to a problem. This requires an honest look at how and why a school mental health system continues to create unsatisfactory outcomes (Bryk et. al 2021).

While the fishbone diagram has been used in many applications, this tool was created to help teams identify the aspects of their Comprehensive School Mental Health System (CSMHS) that may not be functioning as intended. The included example uses each component of the CSMHS as a potential factor contributing to the problem. This approach anchors teams in their commitment to fixing systems, not students, by focusing on changes to adult practices, programs, policies, and procedures that may act as barriers to student and staff well-being.

Connections

DPI's [Roadmap for School Mental Health Improvement](#) outlines five stages for increasing the quality of a CSMHS. In the assessment stage, teams gather and review information to better understand how their current school mental health system is functioning. During this process, root cause analysis can help teams clarify the aspects of the system that are leading to undesirable outcomes. A fishbone diagram can summarize the various sources of information the team uncovered during the assessment stage.

In the planning stage, teams use the fishbone Diagram to inform a theory of improvement articulated through a [driver diagram](#). The root causes identified in the fishbone diagram often become primary and secondary drivers in the driver



diagram and inform possible change ideas. As teams learn more about their system throughout the planning and implementation stages, the fishbone diagram should be updated to reflect new learning.

EQUITY CHECK ✓

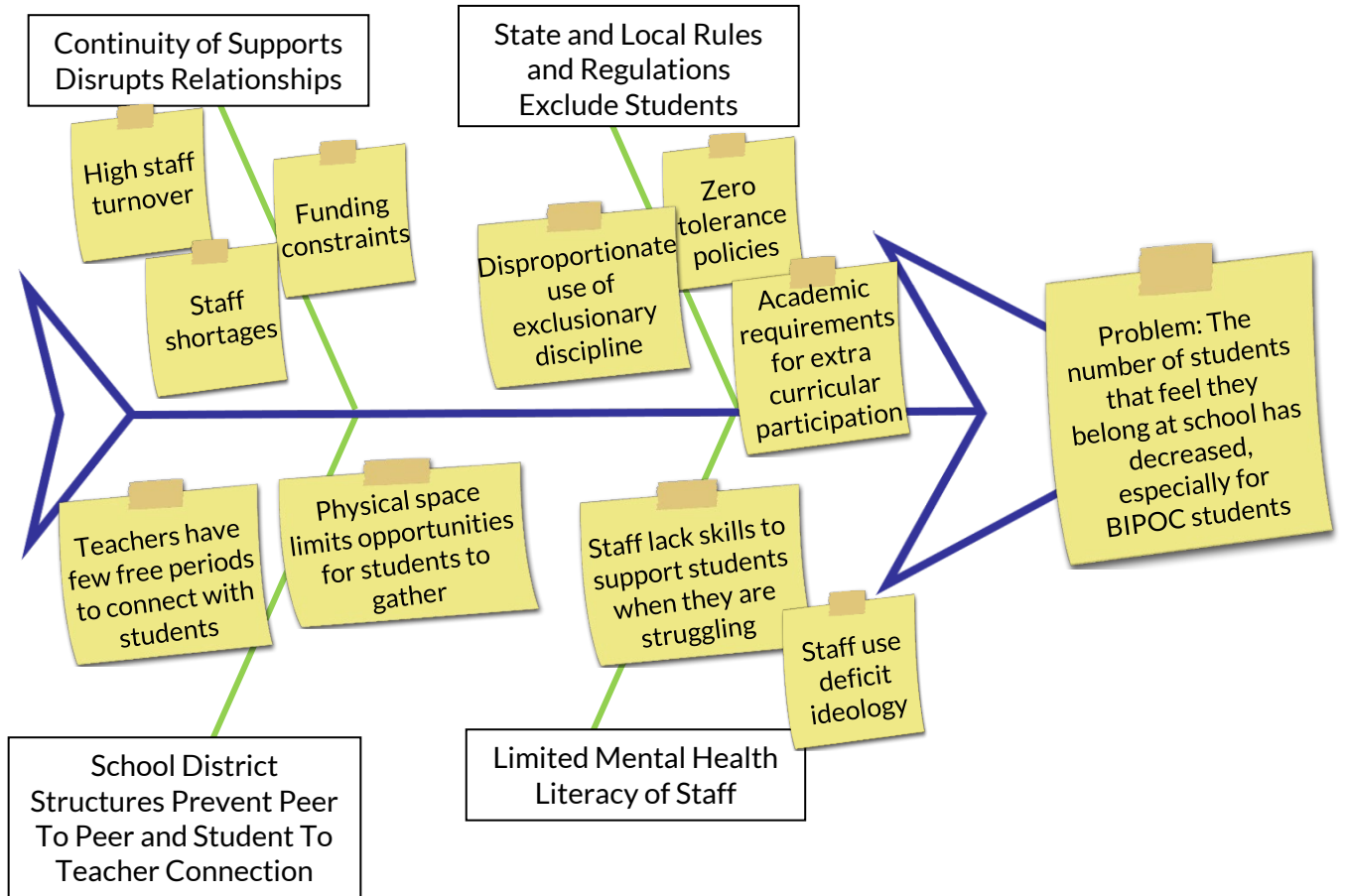
- Whose voices have we included as we defined our problem and identified potential root causes? Whose voices have we left out?
- Do the factors listed represent things in our control?
- Is the definition of the problem based on deficit understanding of the populations we serve?
- Do our root causes focus on systems components, such as policies and practices? (Hinnant-Crawford 2020)

Getting Started

1. **Draw a fishbone diagram.** On a shared workspace like a whiteboard, virtual whiteboard, or chartpaper, draw a circle on one end (the head) with a line extending horizontally out to the other end (the backbone), and five or six vertical lines extending off of the backbone towards the top and bottom of the diagram (ribs).
2. **Determine the problem the team wants to improve.** As a team, identify and define a problem of practice. Record the problem statement in the fish head. The problem statement should focus on a student or staff outcome.
3. **Identify the major factors causing it.** Individually brainstorm a list of major causal factors contributing to the problem. Common factors to consider when brainstorming include:
 - Structural: Larger societal systems such as poverty, racism, ageism, etc.
 - Organizational: Structures within the school or district such as schedules, communication protocols, pay schedules, etc.
 - Policy: Local, district, school, or departmental rules, regulations, etc.
 - Ideological: Ideas or beliefs held by the school-community such as deficit ideology, mental health stigma, etc.
 - Capacity: Ability of staff or a school or district's ability to fulfil it's role or mission.
 - Historical: Past events that may still be impacting the problem.
 - Resource: Availability of fiscal and human assets.

- Practice or Pedagogical Causes: Educator practices and behaviors that contribute to the problem (Hinnant-Crawford 202).
4. **Take turns sharing our each person’s hypothesis about what is causing the problem.** As a group, check all the hypotheses for clarity and detail, and ensure that they represent practices that are in the school’s control. Next, condense any hypotheses that the group agrees are similar until there are no more than five to six. Finally, record these on the end of each rib on the diagram.
 5. **Identify the detailed factors that may contribute to the broader factors.** For each rib in the diagram, individually brainstorm why that factor may be contributing to the broader factors and record hypothesis on sticky notes. It can be helpful to ask “why?” a number of times to drill down to the root causes. Share out these root causes for each factor, condense any repeats, and add them to the corresponding rib. The example fishbone diagram shows one layer of ribs with detailed factors, but a team may choose to drill down further into the problem with additional ribs coming from the detailed factors uncovered during discussion.
 6. **Use the what the team has learned to improve the problem.** Teams can use the fishbone diagram in several ways, including (Bennet et. al 2022):
 - a. To make connections to the CSMHS. Teams may wish to identify the component of a CSMHS that each major contributing factor would fall under. This can help teams make connections to other school mental health efforts. Teams wishing to familiarize themselves with each component can refer to the [Wisconsin School Mental Health Framework](#).
 - b. To inform future change efforts. As the discussion unfolds, potential solutions or change ideas may emerge. The facilitator should keep a list of these to refer back to when considering next steps. When prioritizing which causes are most important to address, the team should avoid voting, which is prone to several types of cognitive bias. The team may instead opt to use consensus building methods.
 - c. To guide further investigation into the problem. Teams may further explore root causes by collecting data on where, when, or how often that root cause is occurring. This can help teams clarify where and how to focus change efforts.

Example Fishbone Diagram



References

Bennet, Brandon, Gunrow, Alicia, Park, Sandra. 2022. *Improvement Science at Your Fingertips*. San Francisco, CA: Improvement Collective and ISC LLC.

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. 2015. *Learning to Improve: How America's Schools Can Get Better at Getting Better*. Cambridge, MA: Harvard Education Press.

Hinnant-Crawford, B. N. 2020. *Improvement Science in Education*. Myers Education Press.



Wisconsin Department of Public Instruction
Student Services/Prevention & Wellness Team
Liz Krubsack, School Mental Health Consultant
201 West Washington Avenue
Madison, WI 53703
(608) 264-6719
Elizabeth.krubsack@dpi.wi.gov
<https://dpi.wi.gov/sspw/mental-health>

July 2024

The Wisconsin Department of Public Instruction does not discriminate on the basis of sex, race, color, religion, creed, age, national origin, ancestry, pregnancy, marital status or parental status, sexual orientation, or ability and provides equal access to the Boy Scouts of America and other designated youth groups.