



The Fishbone Process for Categorizing Hypotheses of Root Cause

"We cannot solve our problems with the same thinking we used when we created them."

-Albert Einstein, Physicist

Purpose:

The fishbone diagram guides teams to categorize potential hypotheses of practices during the data inquiry process. Used most often to keep teams from jumping to conclusions, the fishbone diagram helps them focus on actionable causes for the student outcomes identified as high priority for improvement planning. While there are many versions of fishbone diagrams used for education, this resource is based on the key system features of the Equitable Multi-Level System of Support (MLSS), which offers multiple lenses for considering potential root causes.

Description:

This fishbone diagram is a template structured with MLSS features creating the "ribs" along the fishbone, while the student outcome priority is listed at the head of the fish. The eleven MLSS features of the fishbone include:

- Equity
- Evidence-Based Practices
- Positive Culture
- Strong Shared Leadership
- Systemic Implementation
- Continuum of Supports
- Strong Universal Level
- Collaboration
- High Quality Instruction
- Strategic Use of Data
- Family and Community Engagement

Guiding Questions:

- What are the potential root causes of a student outcome problem?
- Do the root causes listed represent practices that can be controlled by educators (alterable vs. unalterable factors)?
- Have all members of the team participated in suggesting potential root causes?
- What patterns in our hypotheses do we observe among the MLSS categories?
- Which features of the MLSS framework represent the greatest source of possible root causes?

Suggested Uses:

- To categorize potential root causes or hypotheses of practice
- To establish possible cause and effect relationships
- To visualize patterns among hypotheses
- To guide root cause analysis
- To encourage multiple lenses of consideration when identifying potential root causes
- To preface a root cause prioritization activity such as the influencer circle

Suggested Time:

- Allow 30 to 60 minutes to complete the process, allowing ample time for discussion and revision

How to Use this Resource:

- Use this template when a list of potential hypotheses of practice have been identified through brainstorming; these are most often written on sticky notes by individual team members and align closely to the priority statement.
- Rewrite any hypotheses of practice that are unclear, too brief or reflect unalterable factors.
- Make a large version of the template (printed or drawn on poster-sized paper) to facilitate group work.
- Add the student outcome priority statement (problem statement) to the head of the fish.
- Combine and condense similar hypotheses as they are added to the Fishbone diagram. Caution: only condense and combine hypotheses when there is consensus they are the same potential cause.
- Place each hypothesis on a rib of the fishbone under the agreed-upon category of practice and discuss findings.

References

Langford, David P. 2015. *Tool Time for Education: Choosing and Implementing Quality Improvement Tools*. Molt, MT: Langford International. Pp. 46-47.

Key Words: hypothesize, fishbone, root cause

[Brief Feedback](#)

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Fishbone Diagram: MLSS Improvement Categories

