Cause and Effect Diagram (Fishbone)

Description

A Cause and Effect Diagram is a tool that creates a visual representation of a problem or condition and the "causes" that contribute to that "effect". This tool identifies and sorts the root causes of the problem or condition as a first step in the improvement process.

Advantages

- Is simple to construct
- Provides visual information that is easily understood, even by those not involved in construction
- Gives the team a first step in defining which causes will be the focus of action

Essentials

- The issue or problem must be identified and agreed upon prior to using the tool
- Major category headings must broad enough for most causes
- A process that encourages a variety of responses must be agreed upon
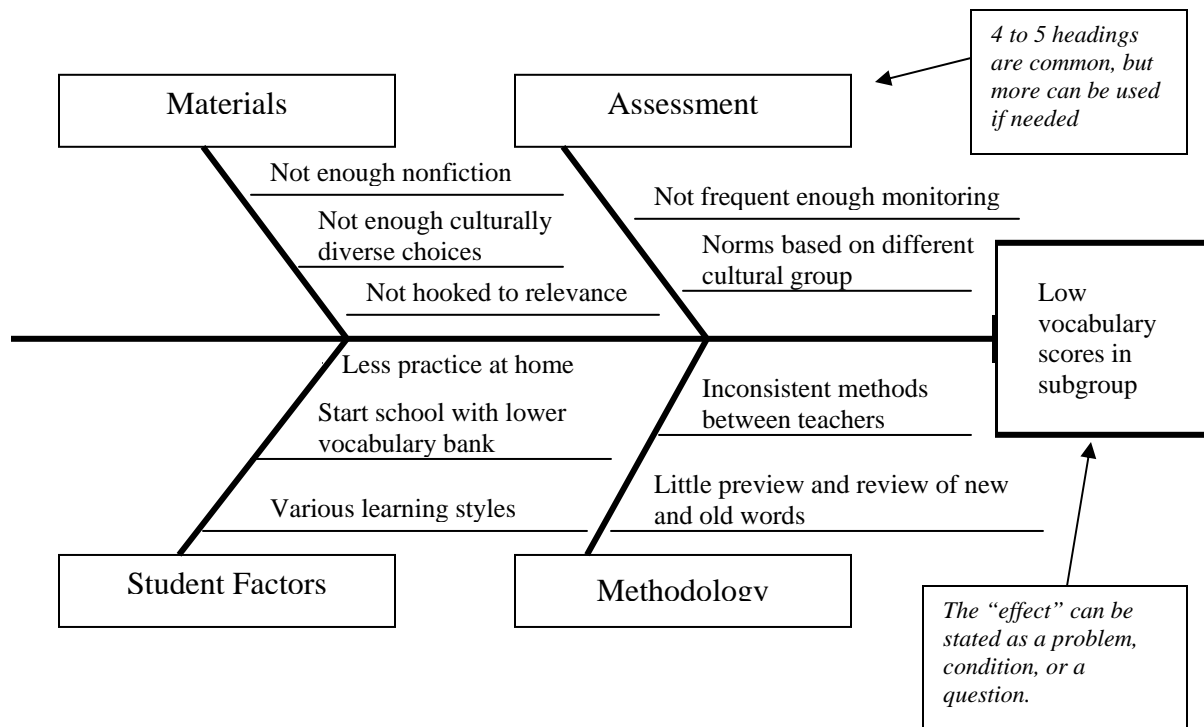
Constructing a Cause and Effect Diagram

1. **Come to consensus on the problem or condition you want to explore and place it in the box located in the "head" of the fish. This problem or condition statement is known as the "effect".**

2. **Decide on the major category headings (usually 4 - 5) and place them in the large boxes at the top of the "bones".**

3. **Brainstorm causes (using a method that best meets the needs of the team) under each category heading.**

4. **If the bones can be broken down into deeper root causes – create "splinters" of the bones.**

5. **When all the causes are listed, identify the one or two "root" causes that are most likely creating the problem or condition. Sometimes this will be a task that requires no additional data because the root causes clearly stand out. In other instances the team may need to consider:**
   a. **collecting data/evidence that a cause is accurate (beyond opinion)**
   b. **the impact or importance of the cause, or**
   c. **the potential ability of the team to influence the cause. (Note: Use the Root Causes Grid as an optional tool to help narrow down the potential root causes)**

Examples of a Cause and Effect Diagram

1. Examples of Issues or Problems
    a. **Identify the causes of low vocabulary scores in a particular subgroup.**
    b. **Study the causes of low morale.**
    c. **Identify the causes of why 30% of students are not completing homework on time.**
    d. **Identify the causes of absenteeism among staff.**
    e. **Study the causes of high job satisfaction in a particular group.**
    f. **Study the causes of World War II.**

Materials

Assessment

4 to 5 headings are common, but more can be used if needed

Not enough nonfiction

Not enough culturally diverse choices

Not hooked to relevance

Not frequent enough monitoring

Norms based on different cultural group

Low vocabulary scores in subgroup

Less practice at home

Start school with lower vocabulary bank

Various learning styles

Inconsistent methods between teachers

Little preview and review of new and old words

Student Factors

Methodology

The "effect" can be stated as a problem, condition, or a question.

Note: An interactive template of a Cause and Effect Diagram can be found on the CRCSD Action Research Website in the Tools section. An interactive template of the Root Causes Grid can also be found in this section of the website.