RESEARCH Brief

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Root Cause Analysis

Root cause analysis is an analytical problem solving technique that helps organizations solve complex problems. Originally developed in the medical field, root cause analysis helps problem solvers go beyond attacking symptoms to focus on deeper causes that may be the source of many issues.

CYCLE OF INQUIRY

Root cause analysis is not a standalone process. In the ideal scenario, it is part of the larger cycle of inquiry (shown below). The cycle of inquiry provides a framework for organizations to systematically attack problems and create meaningful change. Within the cycle of inquiry, root cause analysis is the tool that narrows the focus – allowing action to be directed at the heart of the problematic issues and not at the various symptoms surrounding them.
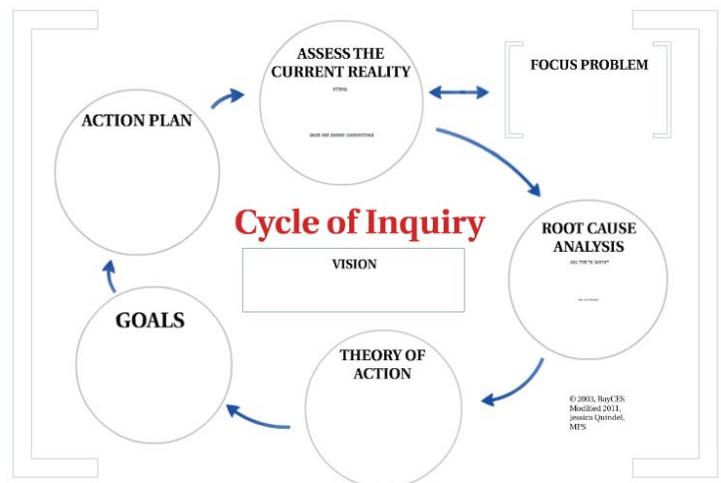
THE "5 WHYS"

Root cause analysis can take many forms. One technique for root cause analysis that many schools find effective and easy to use is called the "5 Whys". The "5 Whys" asks problem solvers to repeatedly answer the question: "What is the reason for the problem I have identified?" Each time a reason is identified, the identified reason is then analyzed as if it were its own, new problem. In that manner, problem solvers keep getting closer and closer to the potential roots of the problem. This process is repeated five times and each time problem solvers get one level closer to root of the problem. Repeating this five times may be overkill or may be not enough, but usually after five passes people are past problem symptoms and nearer to the root causes.

To illustrate the "5 whys" process, a non-educational example is provided below. While the example is purposefully simplistic, it is intended to illustrate the technique of turning a reason for one problem into a new problem and using that new problem to probe further toward a potential root cause.

NOTE ON ROOT CAUSES

Root cause analysis techniques are not designed to uncover the one, ultimate root cause for every problem. Often, complex problems have many interconnected root causes. The goal is simply to uncover one _potential_ root cause. What is most important is that the root cause needs to be highly actionable – meaning the course of action required to address the root cause is obvious.

Problem: You are on your way home from work and your car stops in the middle of the road

(1) **Why** did your car stop?
    Because it ran out of gas

(2) **Why** did it run out of gas?
    Because I didn't buy any gas on my way to work

(3) **Why** didn't you buy any gas this morning?
    Because I didn't have any money

(4) **Why** didn't you have any money?
    Because I spent my last $30 on dinner yesterday

(5) **Why** did you spend your last $30 on dinner?
    Because I don't have a monthly budget

Potential Root Cause: Not having a monthly budget to ensure you have enough gas money

"5 WHYS" PROCESS – STEP BY STEP

Step 1: <u>Choose a Focus Problem</u>
> In this step, the goal is to use data to make observations and identify a focus problem. While it is hard, it is important to keep these observations non-judgmental and totally fact based. For example, you might note that your 8th grade attendance is below 90% in September and October. Logistically, the brainstorming of these observations is best done in small groups. Ultimately you will need to review all observations and use a group decision making process to pick one of these observations as the focus problem.

Step 2: <u>Choose a "Because" for the Focus Problem</u>
> In this step, the problem solving team will brainstorm all the reasons why the focus problem exists and pick the reason that best meets the following criteria: (1) It is within the group's control; (2) Addressing the reason could produce meaningful change. Again, you will brainstorm all the potential reasons and review them as a group. It is important that all reasons are heard and not judged immediately, as this builds group buy-in. After all reasons are heard, the group must use their decision making process to identify their top choice.

Step 3: <u>Turn the "Because" into a "Why" Problem Statement</u>
> Whatever reason was identified in step two, this reason now becomes the basis for the next level of analysis. If you said that attendance was below 90% because everyone skips 6th and 7th periods, you would phrase your next problem statement as "Why does everyone skip 6th and 7th period?"

Step 4: <u>Repeat Steps #2 and #3 Four Times or Until a Potential Root Cause is Identified</u>
> Whatever reason was identified in step two, this reason now becomes the basis for the next level of analysis. This cycle should be repeated a total of five times, or until the group feels a potential root cause has been identified.