

BEST PRACTICES IN COMMUNITY COLLEGE BUDGETING

DEFINE GOALS & IDENTIFY GAPS

2B – Determine the Gaps between the Goals and Current State, and Identify the Root Causes of the Gaps

SUMMARY

Key Points:

- To determine gaps between its current level of performance and its desired future level of performance, as identified in the goal-setting process, a college should perform a root cause analysis to find the underlying cause of the gap between its actual and desired level of performance. Two of the easiest tools for conducting a root cause analysis are “the 5 whys” and a “cause-and-effect diagram.”
- A root cause analysis should focus on issues that have the greatest impact and that are most able to be influenced by the college’s actions. This Best Practice suggests “potential categories” of root causes that colleges should consider: organizational capacity, integrated support for students, adequate support for remedial students, instructional program coherence, choice architecture, physical plant, and measurement systems.

Related Award Program Criteria:

- Criterion 2.B.1: Root Cause Analysis (Mandatory). The Applicant has conducted root cause analysis on the gaps between its goal state and current state as evidenced by an example of the root cause analysis that is clearly related to one or more of the Applicant’s goals submitted with the Supplementary Materials. The Applicant explains how it conducted its analysis and what it learned generally in the Award Application.

INTRODUCTION

After a community college identifies, through goal setting,¹ its desired level of student achievement and/or other desired future condition (e.g., a condition related to a critical support of student achievement, such as professional capacity or integrated support for students) it will very often find that there is a gap between its current level of performance and its desired level of performance. A college should further investigate this gap to discover the *root cause* of the gap.² Root cause analysis is a method of problem solving that looks beyond symptoms to find the underlying cause of a problem. By finding root causes, a college can develop the most effective, long-lasting solutions.

This Best Practice describes:

- I. The rationale for root cause analysis.
- II. Categories of potential root causes of underperformance.
- III. Examples of tools for conducting root cause analysis and their use (see Appendix 1).

Prevention vs. Remediation

Root cause analysis has the advantage of focusing the organization on preventative, rather than remedial, solutions. Prevention is often cheaper and is almost always better for the constituent.

I. THE RATIONALE FOR ROOT CAUSE ANALYSIS

Background. Root cause analysis seeks to go beyond the symptom-level solutions to problems and to find the underlying true cause of the problem or deficiency being observed. With an understanding of the root cause of the problem, a college can develop the most effective and longest lasting solutions. Further, going through a structured root cause analysis often leads to surprising findings – findings that differ from

the participants' initial assumptions. Finally, the process of root cause analysis requires those with differing perspectives on the problem to come together to perform the analysis. This collaboration is the starting point for developing a broad base of support for the solutions to be developed.

Recommendation. The GFOA recommends that colleges systematically identify the root causes of the gaps between their current level of performance and desired future levels of performance.

II. CATEGORIES OF POTENTIAL ROOT CAUSES OF UNDERPERFORMANCE

Background. A root cause analysis can start with a “blank slate” where participants simply begin an open consideration of possible causes, but it is often helpful to consult standard categories of potential causes of underperformance in order to ensure that all potential causes are considered.

Recommendation. This Best Practice presents standard categories of root causes of underperformance for community colleges.³ Not every category will prove useful for every problem analyzed, so colleges need not devote equal attention to each category.

- **Organizational capacity.**⁴ Includes supports for professional development to improve teaching and job skills, levels of faculty and staff engagement, and talent acquisition practices.
- **Integrated support for students.**⁵ Addresses the structure of programs of study, such as clearly defined core elements, sequencing requirements, and where applicable, corresponding electives. Also includes non-academic supports such as advising and academic goal-setting, orientation, and development of college success skills.
- **Adequate support for remedial students.**⁶ Addresses the structure of the remediation program, methods to accelerate remedial learners through basic skills and into college-level coursework, and contextualization of basic skills in order to increase learning.
- **Instructional program coherence.** Addresses the extent to which a set of interrelated programs for students and staff that are guided by a common framework for curriculum, instruction, assessment, and learning climate, and that are pursued over a sustained period of time exist. All aspects of a college's programs and services—including orientation and intake, placement testing, remediation, curriculum, instruction, assessment, academic support, and so on—should be well-integrated and aligned to achieve program-level learning goals.
- **Choice architecture.** A large body of research indicates that too many complex choices can lead to indecision, procrastination, self-doubt, and paralysis.⁷ Choice architecture addresses the extent to which the college has simplified bureaucratic procedures (such as registering for classes and applying for financial aid) and offered students a more limited set of program options in order to mitigate these self-sabotaging behaviors.
- **Physical plant.** Addresses the condition, location, and layout of physical facilities, the functionality of equipment and technology, and the adequacy of other learning aids (e.g., textbooks).
- **Measurement systems.** Addresses the measurement systems used to gauge the state of the problem. For example, the measurement system might not provide an accurate gauge or it influences the subject of the measurement to behave differently than it would otherwise.

See Appendix 1 for examples of tools for conducting root cause analysis.

Endnotes

¹ See Best Practice in Community College Budgeting, 2A – Set Goals to Guide to Budget and Planning Process.

² The Achieving the Dream program recommends the use of root cause analysis as a key part of a college's efforts to improve student achievement. See the Achieving the Dream Field Guide available at the Achieving the Dream website.

³ The categories are derived primarily from Anthony S. Bryk, Penny Bender Sebring, Elaine Allensworth, Stuart Luppescu, and John Q. Easton, *Organizing Schools for Improvement: Lessons from Chicago* (Chicago: University of Chicago Press, 2010). However, it should be noted that Bryk, et al do not distinguish between "primary" and "secondary" causes in their "5 essential supports" of student learning that the root cause categories were largely drawn from. Further, the GFOA added to this the categories of "physical plant" and "measurement systems" to account for root cause categories that the inventor of cause-and-effect diagrams, Kaoru Ishikawa, believed are generally applicable to all applications of root cause analysis.

⁴ See Best Practice in Community College Budgeting, 3B – Develop Strategies.

⁵ Ibid.

⁶ Ibid.

⁷ See for example Sheena Iyengar, *The Art of Choosing* (New York: Twelve, 2001).

APPENDIX 1

EXAMPLES OF TOOLS FOR ROOT CAUSE ANALYSIS

There are many different techniques available to conduct root cause analysis. Two of the easiest to use are “the 5 whys” and a “cause-and-effect diagram.”

The 5 Whys

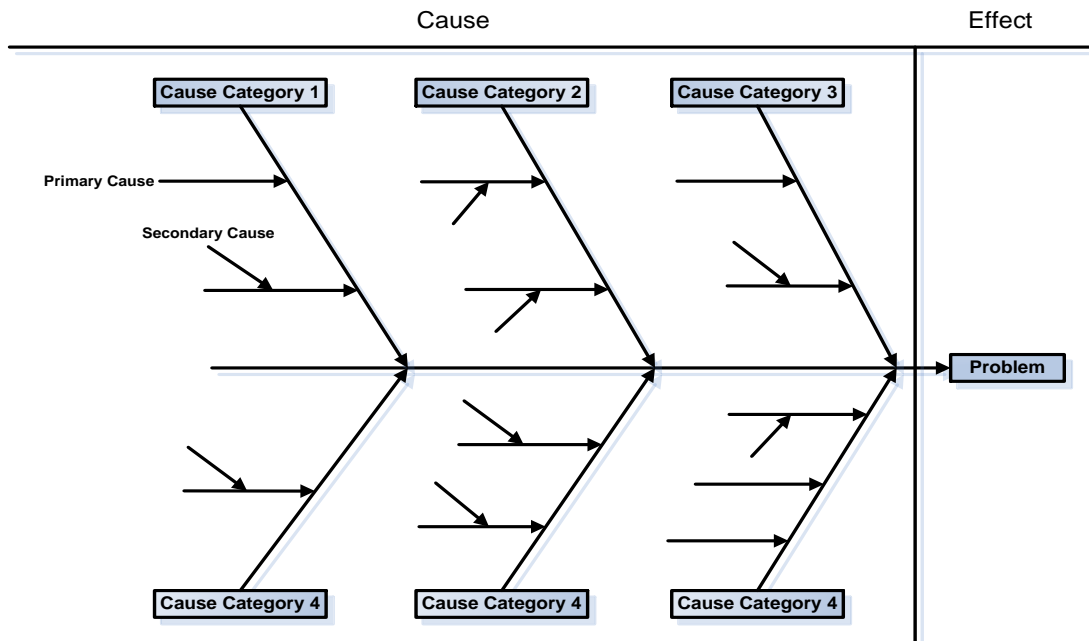
The 5 whys technique simply asks the user to question why a certain condition occurs and to continue to question why each underlying condition given as an answer to the preceding “why?” occurs until the questioning reaches a point where there is no other underlying condition left – this is where the root cause lies. The technique is called the “5 whys” because, according to the rule of thumb, it generally takes five iterations of asking “why?” until a root cause is reached. Below is a hypothetical application of the technique for a community college setting.

Problem: Students are not completing required classes in time to graduate on schedule.
1. Why? Students can't get into classes.
2. Why? There are not enough sections offered at accessible times.
3. Why? Faculty are not available to teach on weekends, evenings, and early mornings.
4. Why? Faculty already have full loads and other commitments.
5. Why? There are not enough faculty to teach the required classes.
Solutions: Explore using adjunct faculty to teach additional sections of required courses or teach other courses to free up full-time faculty to teach courses. Evaluate all course offerings to see which courses don't have sufficient enrollment and re-assign those faculty to teach additional sections of the required courses.

The 5 whys technique has the advantage of being easy to use, but may lead the user to overlook different possible branches of inquiry into root causes in favor of a single branch of inquiry. The next technique, cause-and-effect diagrams, overcomes this weakness.

Cause-and-effect diagrams. A cause-and-effect diagram is also known as an “Ishikawa diagram” (after its inventor) or a “fish-bone diagram” (after its appearance). A cause-and-effect diagram places the problem to be analyzed on the right of the diagram and then draws multiple branches of potential causes from the initial problem. The major branches of inquiry coming off of the immediate problem usually represent major categories of potential causes that the user of the diagram investigates. Sub-branches may be added to the major branches to show deeper underlying causes. Exhibit 1 illustrates.

Exhibit 1 – Cause-and-Effect Diagram



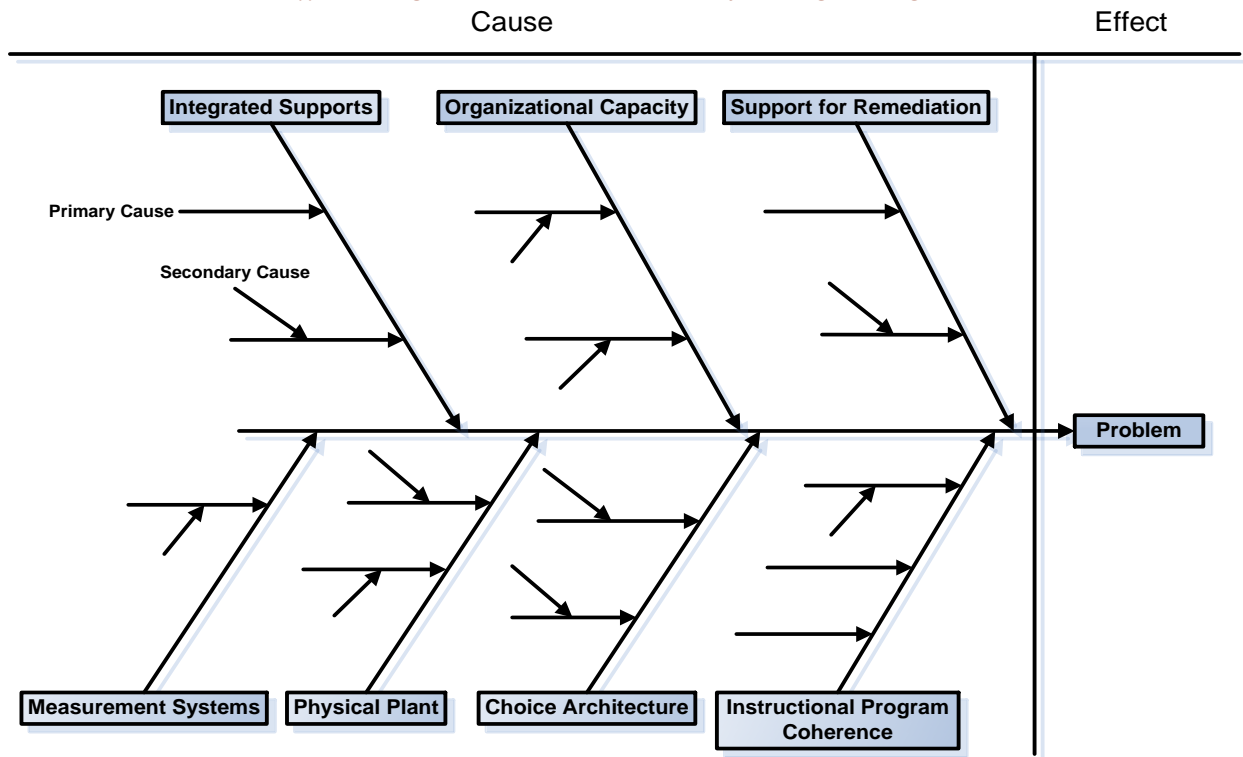
To perform a root cause analysis, start with the problem and then identify potential causes and sub-causes. Standard categories of causes are often employed in order to provide the user with guidance on where to look. The standard categories used in manufacturing and service industries may not be optimized for community colleges, so the standard categories of root causes for community colleges that were described earlier in this document could be integrated into a cause-and-effect diagram to create a template (see Exhibit 2).

Lack of Training is Not a Root Cause

A lack of training is a solution masquerading as a cause. The true cause is lack of awareness, knowledge, skills, or abilities. Training is simply one of several ways to close a knowledge gap.

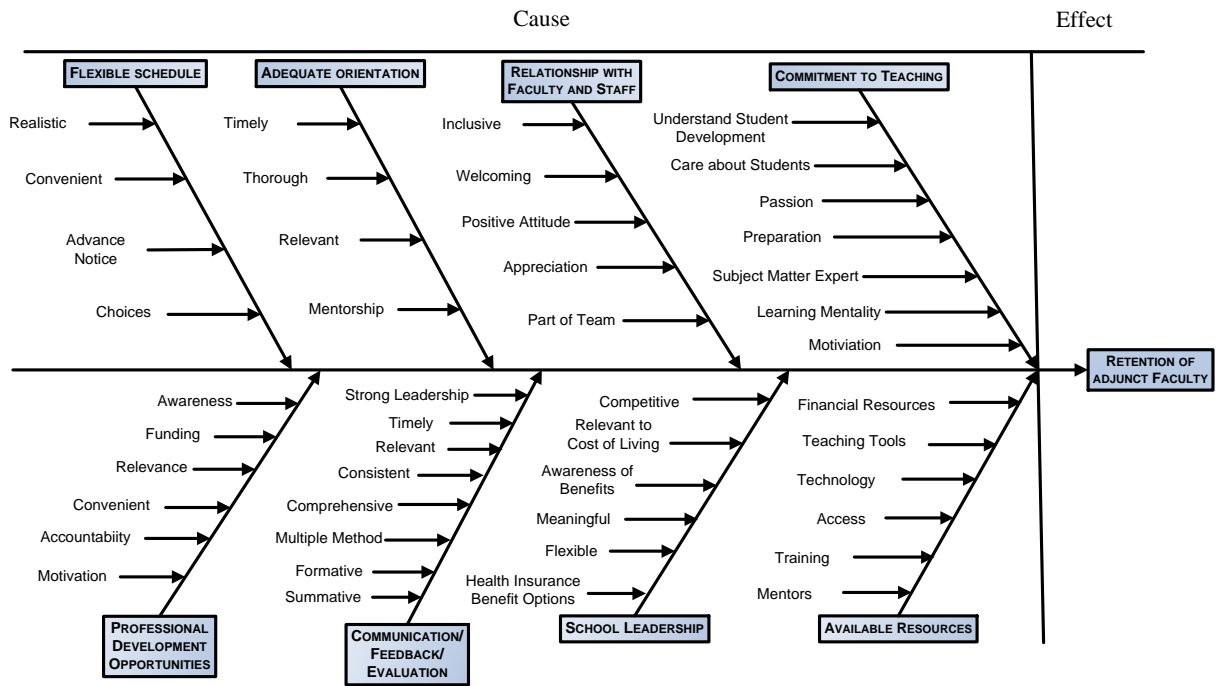
Whether using the standard categories or not, a root cause analysis should be guided by data and investigation. Sources of information to guide the search for root causes include test data and other student performance assessments, surveys of stakeholders, and interviews with people who work closely with the issue under review.

Exhibit 2 – Cause and Effect Diagram with the Community College Categories



The example below is from Colorado Mountain College (CMC)¹ in its effort to identify solutions to increase adjunct faculty retention. The diagram shows how CMC investigated a variety of causes behind the problem. CMC surveyed adjunct faculty and instructional staff and reviewed literature on how to engage adjunct faculty to aid its analysis. In its survey, CMC asked its faculty members what would cause them to stop teaching at CMC and to identify what areas of support would help adjunct retention.

2B – Determine the Gaps between the Goals and Current State, and Identify the Root Causes of the Gaps



Endnote

¹ Colorado Mountain College, *Adjunct Faculty Retention* (2008). Retrieved from https://mycmc.coloradomtn.edu/File/aqip/Adjunct_Faculty_Retention.pdf.