# 2B Identify Root Cause of Gap between Goal and Current State

## SUMMARY

### Prerequisite Best Practices:

- Best Practice in School Budgeting, 2A – Develop Goals

### Key Points

- To determine gaps between a school district's current level of performance and its desired level of performance (as identified in the goal-setting process), a district should perform a root cause analysis to find the underlying cause of the problem or deficiency. Two of the easiest tools for conducting a root cause analysis are the 5 whys and a cause-and-effect diagram.
- Root cause analyses should focus on issues with the greatest impact and ones that the district's actions are the most able to influence. This best practice suggests primary categories of root causes that districts should consider: instructional guidance, professional capacity, and school learning environment. Secondary categories include school's parent-community ties, school leadership and management, 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. The root cause analysis must clearly relate to one or more of the applicant's goals submitted with the supplementary materials. The applicant must then explain how it conducted root cause analysis, more generally, and what it learned in the award application.

## Introduction

After a school district uses goal setting to identify its desired level of student achievement and/or other desired future condition), it will very often find that there is a gap between its current level of performance and its desired level of performance. A district should further investigate this gap to discover its root cause.[1] 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 district can identify and budget for the most effective, long-lasting solutions to the problem.

This best practice document describes:

I. The rationale for root cause analysis

II. Categories of potential root causes related to underperformance

## I. The Rationale for Root Cause Analysis

**Background.** Root cause analysis seeks to go beyond symptom-level solutions to problems to find the underlying cause of the problem or deficiency being observed. With an understanding of the root cause of the problem, a district can identify and budget for the most effective and long-lasting solutions. Further, going through a structured root cause analytical method often leads to surprising findings — findings that differ from the participants' initial assumptions.[2] Finally, the process of root cause analysis requires those with varying perspectives on the problem to work together to perform the analysis. This collaboration is the starting point for establishing a broad base of support for the solutions that will later be developed.

**Recommendation**. Districts should 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 Related to Underperformance

**Background.** A root cause analysis can start with a "blank slate" where participants openly consider possible causes, but it is often helpful to have standard categories of potential causes of underperformance to ensure that a broad range of potential causes is considered.

**Recommendation.** This best practice presents primary and secondary categories of root causes.[3] Districts should focus their efforts on these categories, with particular emphasis on the primary categories. Not only are the primary categories considered more important, but are strategies that can be enacted through the budget and planning process. Not every category will prove useful for every problem analyzed, so districts should not necessarily devote equal attention to all the categories.

### Primary Categories

**Instructional guidance.** The curriculum content that students are exposed to, the organization of that content, and the tools to which teachers have access (e.g., instructional materials, pedagogies, and assessment methods) all fall into this category. In short, this is the "what" and "how" of instruction. In particular, districts might examine:

- **The organization of the curriculum.** This includes the subject matter information students are exposed to and how it builds over time. Districts might consider issues such as lack of standards or a common curriculum, especially in core subject areas (reading, math, and science), intervention strategies for struggling students that aren't cost effective,[4] or weaknesses in the pedagogies or assessment systems used.

- **How instruction is delivered.** Districts might examine, for example, how teachers' work is organized and the amount of collaboration and the level of student engagement in lessons.

**Professional capacity.** This category addresses the district's ability to recruit and retain quality staff, the quality of performance feedback and professional development systems, a constructive organizational culture, and teamwork standards. In particular, districts might examine:

- **Quality of human resources.** This covers how new teachers are recruited, where they are recruited from, and how they are oriented. It also includes how teachers are given feedback and how instances of underperformance are addressed.
- **Quality of professional development.** Teachers' continued professional development should relate directly to the district's or school's strategies to improve student achievement.[5] Lack of instructional coaches may also impede effective professional development.
- **Constructive organizational culture.** A high-performing school is characterized by a culture that emphasizes continuous improvement, exhibits willingness to reexamine ineffective practices, and sets high expectations for students regardless of socioeconomic background. The absence of these same features may contribute to underperformance in a school.
- **Professional community.** Three features of a high-performing professional community include teachers' willingness to make their work available for examination by colleagues; collaborative critical examination of learning methods, processes, and outcomes; and regular collaborative teaming between teachers to strengthen the curriculum.

**School learning climate.** This category addresses the beliefs, values, and behaviors among staff, students, and parents. In particular, districts might examine:

- **Order and safety.** As a prerequisite to effective learning, schools must be orderly and students must feel safe.
- **Teachers' academic expectations of students and support.** The district's faculty should hold all students to high standards. However, these standards must be accompanied by support mechanisms to help struggling or disadvantaged students meet these standards.
- **Peer academic norms.** When students comply with accepted behavioral and academic norms, it reduces disruption to instruction and promotes learning.

### Secondary Categories

**School's parent-community ties.** Schools will be more effective in reaching student-achievement goals when they engage parents directly to support learning; when teachers make an effort to become knowledgeable about the local community and student culture and draw on this awareness in their lessons; and when an effective support network is formed with community organizations.

**School leadership and management.** District- and school-level leadership is a critical lever for making positive change. Effective leadership includes a managerial dimension (handling schedules, logistics, equipment, facilities, and finances); an instructional dimension (providing feedback to teachers and directing the implementation of effective instructional techniques); and a leadership dimension in which change is guided and implemented.

**Physical plant.** The condition, location, and layout of physical facilities could impact student learning, as could the functionality of equipment and technology, or the adequacy of other learning aids (e.g., textbooks).

**Measurement systems.** The measurement system itself, if faulty, can be a root cause. For example, perhaps the measurement system does not provide an accurate gauge (e.g., a test is not aligned to curriculum) or influences the subject of the measurement to behave differently than it would otherwise (e.g., teachers are "teaching to the test")

## Endnotes

[1] The use of root cause analysis in PK12 settings can be traced back to the involvement of W. Edwards Deming in the "total quality education" (TQE) movement of the 1980s. Though the TQE movement has faded, some of its tools live on, including root cause analysis. For example, school performance researcher Shannon Flumerfelt advocates for the use of root cause analysis and related techniques (see Shannon Flumerfelt and Paul Soma, *Transforming the Way We Do Business: Lean Essentials for Schools* (Destin, FL: Charactership Lean Publishing, 2012).

[2] Flumerfelt and Soma describe the use of root cause analysis in school districts, including a case where slow uptake of e-learning technology by school sites turned out to be caused by the district's budget allocation formulas, which institutionalized traditional "seat-based" education and actually penalized school sites for moving students out of seats and into e-learning and other less conventional credit-earning opportunities.

[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 draw the distinction between "primary" and "secondary" causes in their "5 essential supports" of student learning that the root cause categories were largely drawn from. Further, 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] For example, a response-to-intervention (RTI) model provides a structured approach to intervention for struggling students.

[5] Bryk, et al reference Linda Darling-Hammond and Deborah Ball, "Teaching for High Standards: What Policy-Makers Need to Know and Be Able to Do" (New York: Consortium for Policy Research in Education, 1998).