

**Introduction to Root Cause Analysis**

**PACTA**

Pennsylvania Inspired Leadership Program  
*Improving PSSA Performance*  
October 6, 2008

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**Root Cause Basics**

ROOT CAUSE ANALYSIS – An effective tool used both *reactively*, to investigate an adverse event that has already occurred, and *proactively*, to analyze and improve processes and systems before they breakdown.

Root Cause in Health Care: Tools & Techniques  
The Joint Commission on Accreditation of Healthcare Organizations

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**Why Root Cause Analysis?**

- Helps dissolve problem, not just the symptom
- Eliminates patching & wasted effort
- Conserves scarce resources
- Induces discussion & reflection
- Provides a rationale for strategy
  - Can't fix until you know what is wrong
  - Fundamental causes
  - Strategies targeted on the cause, not the symptom

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## Our Definition

Root Cause – the deepest underlying cause, or causes, of positive or negative symptoms within any process that, if dissolved, would result in elimination or substantial reduction, of the symptom

*School Leader's Guide to Root Cause Analysis*  
By Paul Preuss

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## Root Cause or Causes?

- Schools are complex social systems
- Often impossible to isolate a single root cause
- May identify several causes creating a symptom
- Dissolving one or more causes reduces the symptom
- Medical diagnostics & treatment
- Fire

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## The Symptom – Low Levels of Student Achievement on PSSA

- Surface level problem
- Red flag that draws attention to the issue
- Symptom can be a noticeable gap between expectations & reality
- Understand that schools are composed of hundreds of processes
- Dissolving the root vs. patching the symptom

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### Modes of Root Cause Analysis

- Negative *Reactive*
  - Identify & dissolve roots for existing problems
  - Why did this happen?
  - What is holding us back?
- Negative *Proactive*
  - Identify & dissolve potential roots for future problems
  - What root processes, beliefs, attitudes, skills, and knowledge must we change to bring what we want to fruition?

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### Modes of Root Cause Analysis

- Positive *Reactive*
  - Identify & replicate roots for existing success
  - Why was this program a success?
  - What elements contributed to its success?
- Positive *Proactive*
  - Identify & implant roots needed for future problems
  - What root processes, beliefs, attitudes, skills, and knowledge must we install to bring what we want to fruition?

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### *Positive Reactive – Reviewing possible roots of a program’s successful implementation or What made it work?*

- Staff involvement in decision from the beginning
- Staff ownership over program implementation
- Staff were thoroughly trained
- Administrative support & resources
- Benchmarked with a successful school
- Parents were informed
- Program was aligned with philosophy & beliefs

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*Positive Proactive* – What do we have going for us that will enable success in this process?

- Administrative leadership
- Staff desire for improved student achievement
- Needs to meet accountability expectations
- Knowing what the key problem issues are
- Technical capacity to analyze data

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*Negative Proactive* – What forces will hold us back from being successful in RCA?

- Lack of extensive data
- Severe time constraints
- Lack of clerical support
- Lack of analysis capacities
- Training needs
- Team facilitation needs

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*Negative Reactive* – Problem solving mode of immediate issues

- High failure rate in math
- Potentially failing students can be identified early – but given no extra help
- Remedies might include
  - More help for students identified as at risk for failing
  - Improved preparatory programs
  - Back to back periods or three semester course

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### Levels of Root Causes

- Incident or procedural level
  - A fight in the cafeteria fifth period Wednesday
- Programmatic or process level
  - There are always fights in the cafeteria every day at every period
- Systemic level
  - There are fights everywhere in the school
- External level
  - The whole community is fighting

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### Elements @ Each Root Cause Level

<ul style="list-style-type: none"> <li>■ <u>Incident or Procedural Level</u> <ul style="list-style-type: none"> <li>■ The student</li> <li>■ The test</li> <li>■ The teacher</li> <li>■ The incident</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ <u>Program Level</u> <ul style="list-style-type: none"> <li>■ Instructional process</li> <li>■ Materials</li> <li>■ Setting</li> <li>■ Time</li> <li>■ Alignment</li> <li>■ Scheduling</li> <li>■ Training/Staff Dev.</li> <li>■ Adm. Procedures</li> <li>■ Curriculum assessment</li> </ul> </li> </ul>
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### Elements @ Each Root Cause Level

<ul style="list-style-type: none"> <li>■ <u>Systemic Level</u> <ul style="list-style-type: none"> <li>■ Leadership</li> <li>■ Mission</li> <li>■ Vision</li> <li>■ Priorities</li> <li>■ Morale</li> <li>■ Planning</li> <li>■ Budget</li> <li>■ Culture</li> <li>■ Facilities</li> <li>■ Values/Beliefs</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ <u>External Level</u> <ul style="list-style-type: none"> <li>■ Family</li> <li>■ Community</li> <li>■ Wealth/Poverty</li> <li>■ Health</li> <li>■ Media</li> <li>■ Youth Culture</li> </ul> </li> </ul>
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### Determining if a Cause is Root or Contributing

- ☞ Would the problem have occurred if the cause had not been present
  - No/Root – Yes/ Contributing
- ☞ Will the problem reoccur if the cause is dissolved
  - No/Root – Yes/ Contributing
- ☞ Will the correction of the cause lead to similar events
  - No/Root – Yes/ Contributing

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### Indicators of a Root Cause

- Dead end asking what caused the proposed root cause
- Agreement among all that it is a root cause
- Logical, makes sense, provides clarity
- Cause is something you can influence & control
- If cause is dissolved, realistic hope that the problem can be reduced or prevented

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### The Five “Whys” – Getting to the Root Cause

- *Team* – Why do we have so many class tardies?
  - *Students*: Because we do not have enough time to get from one class to another.
- *Team* – Why don't you have enough time?
  - *Students*: We only have four minutes
- *Team* – Why is the passing time four minutes?
  - *Principal*: We wanted to reduce the amount of student hallway time.
- *Team* – Why did we want to reduce it?
  - *Principal* – Wanted to reduce discipline problems
- *Team* – Why did we want to reduce disciplinary problems?
  - *Principal* – Improve safety and climate

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### Key Indicators of Student Success

- A student-focused measurable outcome that the CTC has the ability, desire, or need to influence and for which it is willing, or required, to be held accountable
- PSSA Math Achievement
- PSSA Reading Achievement
- NOCTI

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### Is your CTC focused on these areas with an unrelenting sense of urgency?

Do all decisions & are all actions based on these Key Indicators of Student Success?

Reflective Root Cause Analysis

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### Foundation/Guiding Questions from Focus on Results in CTE - W/S 8

- *(1) Is there strong, observable evidence that the standards-aligned curriculum and instructional practices are consistently implemented across all academic and technical areas?*
- Math, Reading, & NOCTI
- Yes/No – If no, Root Causes exist
- Five “Why’s” or other strategies

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (2) *Is there strong, observable evidence that CTC staff regularly use standards-aligned benchmark assessments to monitor & adjust instructional practices?*
- Yes/ No
- Supporting Evidence
- No – Root Causes exist

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (3) *Is there strong, observable evidence that struggling students are identified early and are supported by an intervention infrastructure with a system for monitoring effectiveness?*
- Yes / No
- Evidence
- Root Causes

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (4) *Is there strong, observable evidence that all students (ELL students, Disabilities) have access to challenging, on-standard curriculum and rigorous assignments*
- Yes/No
- Evidence
- Root Causes

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (5) *Is there strong, observable evidence that the effectiveness & experience of the teacher are matched to the needs of students as equitably as possible?*
- Yes/No
- Evidence
- Root Causes

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (6) *Is there strong, observable evidence that professional development is linked to the CTC's instructional priorities; is standards-based; and is differentiated to meet the continuous learning needs of the staff?*
- Yes/No
- Evidence
- Root Causes

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (7) *Is there strong observable evidence that staff & administrators meet regularly to reflect on prof. practice and on the progress of student learning with an ongoing review/analysis of data & sharing best practices?*
- Yes/No
- Evidence
- Root Cause

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (8) Is there strong, observable evidence that new and/or “struggling” teachers, staff, and administrators receive timely, effective support & intervention?
- Yes/No
- Evidence
- Root Causes

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (9) *Is there strong, observable evidence that a significant proportion of the CTC’s resources is directed toward strategies that enhance professional practice & the core instructional program?*
- Yes/No
- Evidence
- Root Cause

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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**Foundation/Guiding Questions from  
Focus on Results in CTE - W/S 8**

- (10) *Is there strong, observable evidence that the principal is proactively involved in aligning the components of a standards-aligned system?*
- Yes/No
- Evidence
- Root Cause

Key Indicators of Student Success  
PSSA Achievement  
NOCTI Achievement

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## References

- Preuss, P. (2003) School leaders guide to Root Cause Analysis: Using data to dissolve problems. Eye on Education, Larchmont, NY
- Pennsylvania Department of Education (2004) Getting Results, Harrisburg, PA

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