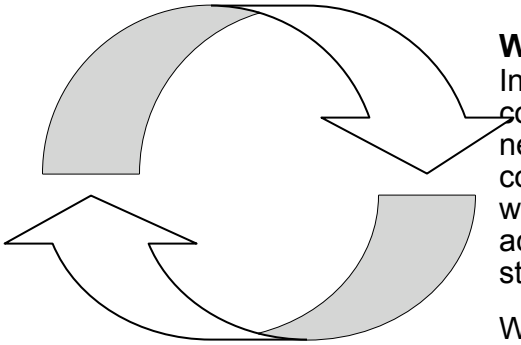
A GUIDE TO DATA BASED INQUIRY:
Using the Cycle of Inquiry to Drive Learning and Change

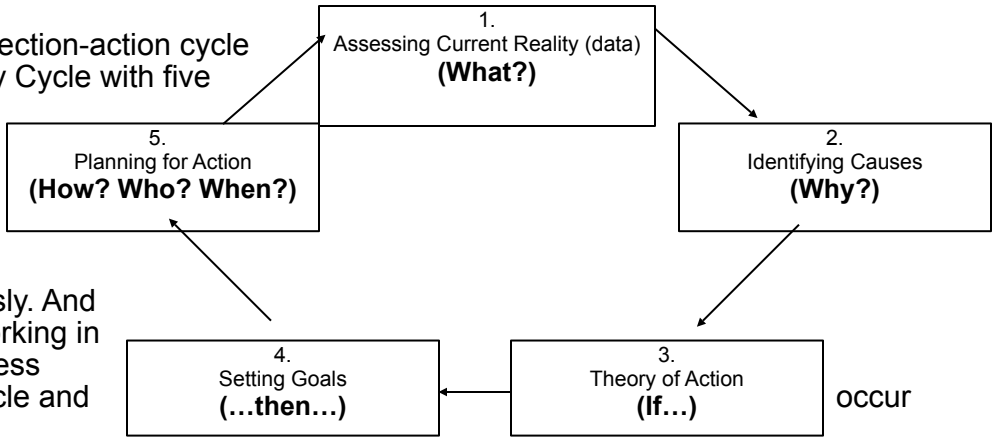


What is inquiry?
In it's most basic form, inquiry is simply the conscious process of combining action and reflection: reflecting on one's actions, taking new actions based on those reflections, again reflecting and thus continuing the cycle. Often we act without reflecting – and/or reflect without acting. Linking them makes for more powerful reflection *and* action towards the CES Common Principles and greater levels of student achievement.

We believe that inquiry is essential for achieving success and equity. When practiced consciously and deeply, inquiry:

- Keeps people focused over time on key challenges and generates deeper learning about how to address these challenges;
- Helps educators make informed changes in practices and policies;
- Provokes changes in relationships between teachers, teachers and students, and between the school and larger community;
- Helps get concrete and more equitable results for students by stating clear goals and checking progress toward these goals.

What is the inquiry cycle?
We have turned the basic reflection-action cycle into a more elaborated Inquiry Cycle with five parts (see diagram). This document describes the cycle and how to use it. Although the five parts of the cycle are described separately, often they occur simultaneously. And while we present them as working in sequential order, inquiry process can start anywhere on the cycle and in any sequence.



occur

At its heart, inquiry is not a technical process. Rather, its purpose is to create space for critical reflection, questions, dialogue, meaning-making and action. This is called "taking an inquiry stance" – being open to what you don't (yet) know, experimenting intentionally and reflecting on what happens. Inquiry also helps focus your work and builds-in authentic accountability to your school community for the work. Eventually, inquiry becomes a habit, such that all members of the school community are:

- Asking probing questions about student learning, teacher practice and school policy;
- Using various kinds of data to check assumptions, generate dialogue, and gauge progress;
- Taking new actions with an intentional purpose and reflecting on results.

Inquiry does have technical aspects, though, some of which we've outlined in the suggested processes below. Knowledge of these can help make your inquiry work more powerful. However, be careful not to get overly technical. Remember to maintain an inquiry stance and keep focused on the purposes and spirit of each part of the process. As you become familiar with the inquiry cycle, you can adjust your process to fit your needs, time and style.

Setting Up You Inquiry Work

Preparation and set-up are crucial to making inquiry work well. The better you can plan, the deeper the work can go, especially if participants are inexperienced or reluctant about looking at data.

Pre-work

- Make time on your calendar, clarify your purposes, determine who will be involved and who will lead the work.
- Review all of the tools and resources you plan to use throughout your Inquiry Cycle.
- Complete the ***Data Based Inquiry Prep Sheet*** (see Appendix A) to have basic demographic statistics available for comparing statistics related to the chosen data that your school team will be examining.
- Access the data you want to examine (e.g. from EssentialAnalysis.org, district, and/or state data) and make copies for all participants
- Go over the data, get an initial sense of it, determine what's most important to focus on and select the data that will best serve your purposes. Too much data is likely to overwhelm participants.
- Format the data so it's clear to read (e.g. charts & graphs from EssentialAnalysis.com)

Set-up with your team: introducing the data and process

- Review what data you're looking at – *and why*. What's here? What might it tell us? What's not here? What questions do we have?
- Review ***Norms for Looking at Data*** (Appendix B) and ***Avoiding Common Data Pitfalls*** (Appendix C)
- Review the Cycle of Inquiry and the process for Inquiry # 1
- Orient people to the actual data if they aren't familiar with it (e.g. What do the various CES surveys measure? How do you read state data? What was the context/assignment for this student work?)
- Decide on a process for reviewing the data: how much time, who looks at what data, how to record data statements.

The Five Parts of the Inquiry Cycle

1.
Assessing Current Reality
What does the data tell us?

Core purpose & spirit of this inquiry
Inquiry #1 focuses on building a deeper

RF tools and resources

understanding of student achievement, equity, school culture, or whatever the data you are choosing to look at might tell you. You may be doing an initial analysis, or you may be assessing the results of something you have already implemented. You will never have all of the data you need, but much powerful analysis is possible with just a few good data sources.

The point of this inquiry is to really slow down and pay attention to the results you're getting. This requires getting specific: we tend to operate from general notions of, and many assumptions about how our students are doing. This also requires some discipline. Resist the temptation to interpret and find solutions; try to stay with just describing what you see. Attempt to learn as much as you can about *what is happening* **before** moving on to *why* you are getting these results and *what you might do* to address these challenges.

Suggested process

- ***Brainstorm questions*** you have about this data – what do you want to find out?
- ***Read through the data***. Do further calculations if needed. Consider breaking into smaller groups or pairs if your group is large or you have too much data for everyone to read.
- At this point, consider making space for people's ***emotional response*** to this data through a pair share, dyad or whole group reflections. (e.g. What feelings do you have seeing this data?)
- Generate ***statements and evidence*** about the data. Use ***Statements and Evidence T-Chart*** (Appendix D). Note both achievement and equity patterns.
- Capture ***questions*** and ***further data needs*** that come up as you go.
- Identify ***patterns to celebrate*** – add comment on what might have caused that. It's important to celebrate progress – and to understand why it happened.
- Identify patterns that represent ***key challenges*** – i.e. patterns that are "not OK". A challenge is a pattern you want to change.
- Have the group decide on a ***priority challenge*** – a challenge that, if addressed effectively, would likely make a significant difference in these results. A priority challenge represents a serious issue, something that really needs to change.
- Consider ***urgency***, your ***capacity*** to address this challenge, and ***which students*** would be affected by dressing this challenge.
- Articulate your ***priority challenge in writing***. Be specific and cite data.

Sample Priority Challenge:
In our first year of implementing project based learning, almost 70% of our students report that the statement *"My classes have helped me to learn how to collect, organize, and analyze information"* is Almost Never or Occasionally True. In particular, the rate is disproportionately highest for our African American (84%) and Latino (77%) students.

2.
Understanding Root Causes
Why are we getting these results?

Core purpose and spirit of this inquiry

The purpose of Inquiry #2 is to take time to investigate why results are happening. Oftentimes, we jump straight to solutions without pausing to really consider causes. This requires reflection, dialogue, consulting outside expertise and research, and gathering further data that can better inform us (e.g. student work samples, student and parent voice data, etc.). Getting closer to the root causes generally requires digging down several levels beneath your initial assumptions about why these results are happening. The process of understanding why challenges exist is *ongoing*; you will come up with your best hypothesis at that time based on the data and understanding you have – and know that you'll be revising it as you go.

The key to inquiry is in identifying causes that we can have some influence over – and acknowledging that it is our responsibility to take action. A common response to patterns of inequity (e.g. low engagement or achievement of African American and Latino students) is to point to factors that affect students' lives like poverty, family circumstances, and historical discrimination. While very real, we cannot by ourselves change these. What we can change, however, is *how we support students in succeeding in spite of the challenges they face*. It is possible to change the statistical odds for students, but we must begin by looking at ourselves: What is not working about what I'm doing? Where can we improve our approaches or program? This can be hard and bring up emotions and conflict. But if we avoid getting defensive – and instead get curious – we can construct deeper understandings and better solutions.

Suggested process

- Take the priority challenge from Inquiry #1 and begin discussing what possible causes of this might be. Ask people what is the ***high-leverage problem(s)*** that they believe is causing the priority challenge to exist. You are trying to come up with your best educated guess – a *hypothesis*.
- Engage in ***activities*** to deepen your understanding of the challenge (see below for more on these).
- Work to ***define and articulate*** your high-leverage problem. The high-leverage problem should be stated in a negative phrasing. It is the thing you want to change. (e.g. "We have not been…")
- Discuss what ***related problems*** contribute to this high leverage problem. (e.g. Students are not engaged in their school work"; "Pressure about testing is hindering our project based learning efforts"; or "Many of our students start year way below grade level").
- Consider ***different sources or levels of the problem***:
    - Classroom/instructional
    - School/structure/policy
    - Community connections

How we define the problem will shape the solutions we develop

For instance, defining the problem as about *coherence* (e.g. teachers not teaching project based learning in ways that are consistent across grades or classes) would likely lead to solutions focused on alignment and consistency. Whereas defining the problem as *too little use of project-based learning* because of *lack of teachers' knowledge of project-based learning* would tend to lead to solutions involving teacher professional development in project-based learning.

Ways to deepen your understanding of the causes of the challenge:
Use as many of these approaches as time permits. Include additional ones in your action plan.

- **Dialogue**. Possible activities to generate dialogue and deeper insight:
  - Do the ***Five Why's*** (Appendix E) activity for brainstorming causes (good for uncovering more deeply rooted causes/problems).
  - Do a ***Chalk Talk*** (Appendix F).
  - A simple activity: first do a "whip" where each person has a turn to offer their thinking about root causes; then turn this into a discussion/dialogue that builds on what people have said. Work to identify what you think are the 1-2 most significant causes.

- **Further data**. Possible types of data that can further inform your understanding of the challenge:
  - Student voice and experience Data (*Interviews, Focus Groups, Surveys, Shadowing, Quick-Writes*)
  - Parent Voice and Experience Data
  - Student Work (assignments, tests, projects, portfolios, etc.)
  - Teacher Voice and Experience Data (observations, reflections, teacher experience and expertise)
  - Video data of classroom teaching and learning

- **Outside (and inside) research and expertise**.
  - Readings: articles, books, research
  - Videos
  - Experts: people with established expertise and experience; schools or teachers who are getting better results

Sample high-leverage problem:
Our current approaches and interventions to support our Project Based Learning curriculum are not supporting students to sufficiently *learn how to collect, organize, and analyze information*. In particular, we are not making connections for our African American and Latino students.
Related Problems: (1) We are seeing reduced college going-rates as a result; (2) students are not testing well; and (3) students are not engaged in class work.

Core purpose and spirit of this inquiry

3.
Developing a Theory of Action
How will we get improved results?

Inquiry #3 focuses on developing a clear and focused overall strategy to address your identified problem. Too often, we come up with a list of strategies and responses to a problem but we lack a core approach that holds these together. It is more important to do a limited number of important things, than to scatter your efforts across numerous actions. Developing a theory of action helps you prioritize *depth over breadth* in your strategy. Remember the CES Common Principal #2, *Less is More*.

Articulating a theory of action also keeps you conscious and intentional about what you try. People can articulate *why* we're taking these key actions – and what we hope and expect to see happen. Theory of action work forces a group to play out their strategy: what is the chain of actions and subsequent changes that will eventually lead to improved student achievement?

Creating a theory of action allows everyone to get on the same page about your strategy as well. All who are involved should know and be able to articulate the theory of action. At the end of the school year, everyone should be able to say, "these are the actions we took… these are the reasons we took them… here's what we wanted to happen… now we are reflecting on how it worked and what results we got."

Suggested Process

- Discuss what ***key actions*** would address the high leverage problem – and play out how these actions would actually bring about different results.
- ***Focus in on one*** (or several) key strategies that the group is committed to implementing and really follow through on effectively. If you attempt to many strategies, they will not get fully implemented – and you won't know which actions led to the eventual results.
- A powerful theory of action often will ***address several domains***:
  - Classroom practice (and related professional development)
  - School organization/design
  - Community partnerships
- State your theory of action in ***"If… then…"*** terms:
  - "If we do "U", then teachers will do "W", and that will result in "X" changes in the classroom, and ultimately our students will then be able to do "Y", and we will see "Z" results in achievement and equity."
- It can also help to ***draw a diagram*** that shows how you see your key strategies leading changes that will ultimately lead to your intended results.

Sample Theory of Action:
If we (1) strengthen school-wide professional development on best-practices in project-based learning; (2) develop school-wide habits of mind; and (3) create assignments or projects with input from students… Then we will be able to ask students to do more critical thinking and providing more support… Which will enable our students to take advantage of opportunities for *learning to collect, organize and analyze information*… Then we will see improved student engagement in their class work, greater college going, and improved test scores.

4.
Goal Setting
What results do we want to see?

Core purpose and spirit of this inquiry
When planning changes we want to make in our classrooms or schools, oftentimes we set goals around our strategies (i.e. "*implement the*

rubric"), but we do not specify what kinds of changes we think we'll see in results for our students. We have a general aim, for instance, that scores will go up or we'll see fewer referrals and suspensions. But we don't take it to the next level of "*how much do we believe students critical thinking skills will improve if we do this well?*" Is a little gain "enough"? If so, why? If not, how much bigger a gain do we want to see?

Goals hold us accountable. If we don't set goals, we aren't accountable for the results we get. If we do set goals, we can see what kind of progress we made.

Goals are particularly crucial in working towards equity. Consider CES Common Principle #3, *Goals Apply to All Students*. We can develop all the well-intentioned strategies we want, but ultimately the proof is in the results we see. Is what we're doing actually making a difference for our students, especially our students who have been least successful? So, does an inquiry need to lead to more equitable results for students in order for it to be a "successful" inquiry? On the one hand as in science, a "failed" inquiry – one that doesn't produce the results we hoped for – is still successful if the inquirer learns from it and valuable knowledge is produced. On the other hand, if a school's or teacher's inquiry learning never leads to more equitable student learning, something is still missing.

"Goals, rightly defined and pursued, are the most crucial element in any school system that helps to get better results… In the great majority of schools, explicit, measurable learning goals are still rare… Even fewer schools have developed a means for regularly assessing student progress towards learning goals. Without this measurable aspect, goals exert very little influence on classroom practice."

– Mike Schmoker

WHAT GETS MEASURED GETS DONE!

Characteristics of "**SMART Goals**":

- **Specific**: states exactly what is to be measured
- **Measurable**: states the expectation quantitatively (#'s and/or %'s)
- **Attainable**: can reasonably expect to accomplish this goal
- **Relevant**: connected to the identified challenge and theory of action
- **Timely**: states by when and how often

Types of Goals:

- ***Student Achievement Goals*** – An achievement goal identifies what indicators are to be targeted by strategies for improving overall student achievement.
- ***Student Equity Goals*** – An equity goal identifies what indicators and which group of students are to be targeted by different strategies for eliminating the achievement gap.

- ***Teacher Practice Goals*** – A teacher practice goal identifies a key practice (or practices that teachers will be implementing as part of the theory of action – and indicators to assess this implementation.
- ***Organizational Goals*** – An organizational goal identifies what school and staff practices will be changed to support progress toward your student achievement and equity goals.

Suggested Process

- Discuss the importance of goal-setting to accountability, motivation, focus and efficacy.
- Go back to your student data and priority challenge and develop a set of SMART achievement and equity goals.
- Discuss and decide upon 1 to 2 key instructional practice and organizational goals that would support achievement and equity goals.
- Check to be sure that your goals are directly connected to the problems you are trying to solve and challenge you have identified.

Sample SMART Goals:

- Achievement Goal: 85% of our students will report that the statement *"My classes have helped me to learn how to collect, organize, and analyze information"* is *Frequently* or *Almost Always True* (up from 30%). As result, other related measures of achievement such as test scores, college going rates and student engagement will also show significant increases.
- Equity Goal: The rate for both African American and Latino students responding *Frequently* or *Almost Always True* will increase by 20% this year in addition to increased….
- Instructional Practice Goal: All of our teachers will be able to effectively teach and support students through at least 4 units of project-based learning per year.
- Organizational Goal: By the end of the current school year, we will have developed the organizational capacity and professional development schedule and supports necessary to support teachers and students in project-based learning that enables students to *learn how to collect, organize, and analyze information effectively.*

5.
Action Planning
How will we take action together?

Core purpose and spirit of this inquiry

Inquiry #5 is about making all this work actually happen. Until your ideas and intentions are translated into actual plans, they will not become real for the school community. The reproduction of inequity in schools is often perpetuated by us not following through on what we've stated we want to do.

Creating an action plan – with specific responsibilities, resources and timelines – also helps build collaborative commitment to the theory of action and goals you've developed.

Suggested Process

- Take each piece of your theory of action and ***list what needs to be done*** in order to accomplish that strategy.
- Go back to your data needs and questions from Inquiry #1 and decide which of these you want to follow up on and make them action items in your plan.
- ***Identify leadership*** to take on the key pieces of the action plan.
- ***Discuss the challenges*** you will face (capacity, budget, knowledge, buy-in, etc.) in attempting to implement this plan.
- ***Create both Team and Individual Action Plans***. It helps to know what "our" work is and what part of that is "my" work.

Team Action Planning Tool

Steps we will take			Resources we will need			Challenges we will face	
What?	Who?	When?	Budget	Knowledge & Skills	Other Support	Personal	Systemic

Individual Action Planning Tool

Steps I will take			Resources I will need			Challenges I will face	
What?	Who?	When?	Budget	Knowledge & Skills	Other Support	Personal	Systemic

APPENDIX A

Data Based Inquiry Prep Sheet

This tool is to be used to gather basic demographic statistics for the purpose of comparing statistics related to chosen data that your school team will be examining. (Other statistics to consider may include that which is related to Parent Education, Attrition and Retention, etc.).

SINGLE VARIABLE STATISTICS:

I. TOTAL STUDENTS =					
II. GRADE LEVEL					
Grade	**Number**	**Percent**	**Grade**	**Number**	**Percent**
9			11		
10			12		
III. GENDER					
Gender	**Number**	**Percent**	**Gender**	**Number**	**Percent**
Female			Male		
IV. ETHNICITY					
Ethnicity	**Number**	**Percent**	**Ethnicity**	**Number**	**Percent**
African American			Hispanic/Latino		
American Indian			Middle Eastern		
Asian			Pacific Islander		
Caucasian (white)			Other		
Filipino			Not Provided		
V. SOCIO-ECONOMIC STATUS					
SES	**Number**	**Percent**	**SES**	**Number**	**Percent**
Free Lunch			Does Not Qualify		
Reduced Lunch			No Data		
VI. SPECIAL EDUCATION					
SPED	**Number**	**Percent**	**SPED**	**Number**	**Percent**
Qualifies			Does Not Qualify		

MULTIPLE VARIABLE STATISTICS:

VII. GRADE LEVEL vs. GENDER				
	9	10	11	12
	# / %	# / %	# / %	# / %
Female				
Male				
Total	/ 100%	/ 100%	/ 100%	/ 100%

VIII. ETHNICITY vs. GENDER									
	Female		Male			Female		Male	
	#	%	#	%		#	%	#	%
African American					Hispanic/Latino				
American Indian					Middle Eastern				
Asian					Pacific Islander				
Caucasian (white)					Other				
Filipino					Not Provided				

IX. GRADE LEVEL vs. ETHNICITY									
	9	10	11	12		9	10	11	12
	# / %	# / %	# / %	# / %		# / %	# / %	# / %	# / %
African American					Hispanic/Latino				
American Indian					Middle Eastern				
Asian					Pacific Islander				
Caucasian (white)					Other				
Filipino					Not Provided				

X. SOCIO-ECONOMIC STATUS vs. ETHNICITY									
	F	R	No	?		F	R	No	?
	# / %	# / %	# / %	# / %		# / %	# / %	# / %	# / %
African American					Hispanic/Latino				
American Indian					Middle Eastern				
Asian					Pacific Islander				
Caucasian (white)					Other				
Filipino					Not Provided				

XI. ETHNICITY vs. SPECIAL EDUCATION

	Qualifies		Does Not			Qualifies		Does Not	
	#	%	#	%		#	%	#	%
African American					Hispanic/Latino				
American Indian					Middle Eastern				
Asian					Pacific Islander				
Caucasian (white)					Other				
Filipino					Not Provided				

APPENDIX B

Proposed Norms for Looking at Data

- **Describe only what you see.** Do not leap to conclusions or interpretations. Describe just the data in front of you. Do not try to describe what you don't see; express what you don't see in the form of questions (to be charted).

- **Resist the urge to work on "solutions"** until you are comfortable with what the data says and doesn't say.

- **Surface the "lenses" and experiences** you bring to the data. Effective teams use these as strengths.

- **Seek to understand differences** of perception before trying to resolve them. Early consensus can inhibit depth and breadth of analysis.

- **Ask questions** when you don't understand. Find the answers together.

- **Surface assumptions** and use the data to challenge them. Look actively for both challenges AND supports to what you believe is true.

APPENDIX C

How to Avoid Common Data Pitfalls?

The process of looking at data often elicits certain habits or behaviors. We have identified several of the most common patterns that arise in looking at data along with suggestions for how to respond.

Common Pattern	What to Do
Issues come up that the data does not necessarily raise.	• Chart data questions for later investigation
Individuals and/or the group jumps quickly from looking at as display of data into designing and planning interventions.	• Build in a way to keep track of the intervention suggestions, thereby capturing the ideas without getting side-tracked
The discussion feels abstract and isolated from concrete next steps.	• Remind participants of the purpose of looking at the data–to address student achievement challenges–throughout the process
Statements about the data blame young people and/or are based on an assumption that there's nothing they can do (i.e. "those kids just don't try, they don't want to learn".	• Pose strategic word questions that seek understanding and clarification (e.g. What do you mean by "those kids"? "Which students?"). • Ask for evidence (e.g. How do you know? What makes you say that?"). • Find the part if what is said that you can emphasize with or validate, and then propose another interpretation.
The discussion keeps coming back to data we need instead of the data we are looking at together.	• Chart data questions that arise. • Continue to focus the group on what "is there" in the data. People will always find more if you are persistent.
The data is not disaggregated in ways that help is see how students are doing.	• Again, chart the data needs. Often there is a resource in the school or district that can help you disaggregate data if you ask.
People want to see longitudinal data, but the school has used different tests each year.	• Chart data questions. Again, you never know what you can get if you don't ask…
The group is confused about the use of qualitative data.	• Qualitative data is useful for understanding some of the "why" questions that may arise. • Try to focus the group on asking effective questions about student achievement as a starting place for looking at all data.
The group is hesitant to say things that might be taken as blame. This is preventing honest dialogue and examination of the data.	• Re-connect to the norms you established with the group about being open and not blaming. • Emphasize that the purpose of looking at data is to help students. This is important work
The group feels depressed by the emerging patterns.	• Find positive patterns and recognize successes. • Remember that you are part of the solution.

APPENDIX D

Statements and Evidence T-Chart

Which Data: _____ Date: _____

Who's doing the analysis: _____

For what purposes: _____

QUESTIONS: ***What do you want to fin out from this data? What are you curious about?***

- What patterns do you see? By race? By gender? By language background? By grade level? By subject?
- What kind of progress was/wasn't made?
- How is overall student achievement?
- Which students have the lowest achievement?

Data Statements: Patterns, Observations (Description, not interpretive)	**Evidence** (What data supports this?)	**Comments** (Questions, data needs…)

REFLECTIONS ON YOUR INITIAL ANALYSIS

What **CONFIRMS** your expectations? Why did you have these expectations?	What **SURPRISES** you?
What should we **CELEBRATE**? What do you think led to these successes	***What key **CHALLENGES** do you notice? Can you identify one central challenge to focus on?

NEXT STEPS

What **NEW QUESTIONS** does this data raise for you?	What **FURTHER DATA** do you want to see? Why?	Potential **IMPLICATIONS?**

APPENDIX E

The Five Whys: Determine the Root Cause

Asking "Why?" may be a favorite technique of your three year old child in driving you crazy, but it can also help move your school towards better understanding the root causes of your priority challenges. The Five Whys is a technique that can be used in the “Understanding Root Causes” phase of your school’s cycle of inquiry.

By repeatedly asking the question "Why" (five is a good rule of thumb), you can peel away the layers of symptoms which can lead to the root cause of a problem. Very often the perceived reason for a problem will lead you to another question. Although this technique is called "5 Whys," you may find that you will need to ask the question fewer or more times than five before you find the issue related to a problem.

Benefits Of The 5 Whys

- Help identify the root cause of a problem.
- Determine the relationship between different root causes of a problem.
- One of the simplest tools; easy to complete without statistical analysis.

When Is 5 Whys Most Useful?

- When problems involve human factors or interactions.
- In day-to-day school life; can be used within or without a cycle of inquiry.

How to Complete The 5 Whys

1. **Write the Problem (3 minutes):** The presenter writes down the specific problem. Writing the issue will help you formalize the problem and describe it completely. It also helps a team focus on the same problem.
2. **Presentation (3 minutes):** The presenter describes the context for their question. This might include why they chose the question, why the question is important to them, or how it relates specifically to their work.
3. **Clarifying Questions (3 minutes):** The group asks clarifying questions of each other. These are questions, which clarify the context of the presenter’s remarks. They should be specific questions, which can be answered with brief statements. For example, “How long has the school been involved in project based learning?” Or, “Are community members involved with planning this project?”.
4. **Decision (3 minutes):** The group discusses the best line of inquiry to get at the heart of the question and decides upon the initial “why question”. The presenter is silent.
5. **The “Why Questioning” (10 minutes):** The “why question” decided upon is asked and the presenter responds. Ask *Why* the problem happens and write the answer down below the problem. If the answer you just provided doesn't identify the root cause of the problem that you wrote down, ask *Why* again and write that answer down. Keep asking *Why* until the team is in agreement that the problem's root cause is identified. This may take fewer or more times than five *Whys*.
6. **Debrief (3 minutes):** The group debriefs the experience.

APPENDIX F

Chalk Talk

Chalk Talk is a silent way to do reflection, generate ideas, check on learning, develop projects or solve problems. It can be used productively with any group—students, faculty, workshop participants, committees. Because is it done completely in silence, it gives groups a change of pace and encourages thoughtful contemplation. It can be an unforgettable experience. Middle Level students absolutely love it—it's the quietest they'll ever be!

Format

- Time: Varies according to need; can be from 5 minutes to an hour.
- Materials: Chalk board and chalk or paper roll on the wall and markers.

Process

1. The facilitator explains VERY BRIEFLY that chalk talk is a silent activity. No one may talk at all and anyone may add to the chalk talk as they please. You can comment on other people's ideas simply by drawing a connecting line to the comment. It can also be very effective to say nothing at all except to put finger to lips in a gesture of silence and simply begin with #2.
2. The facilitator writes a relevant question in a circle on the board. Sample questions: *What did you learn today? So What?* or *Now What? What do you think about social responsibility and schooling? How can we involve the community in the school, and the school in community? What do you want to tell the scheduling committee?* Etc.
3. The facilitator either hands a piece of chalk to everyone, or places many pieces of chalk at the board and hands several pieces to people at random.
4. People write as they feel moved. There are likely to be long silences—that is natural, so allow plenty of wait time before deciding it is over.
5. How the facilitator chooses to interact with the Chalk Talk influences its outcome. The facilitator can stand back and let it unfold or expand thinking by:
    - circling other interesting ideas, thereby inviting comments to broaden
    - writing questions about a participant comment
    - adding his/her own reflections or ideas
    - connecting two interesting ideas/comments together with a line and adding a question mark.

    Actively interacting invites participants to do the same kinds of expansions. A Chalk Talk can be an uncomplicated silent reflection or a spirited, but silent, exchange of ideas. It has been known to solve vexing problems, surprise everyone with how much is collectively known about something, get an entire project planned, or give a committee everything it needs to know without any verbal sparring.
6. When it's done, it's done.