



How Are Your Processes Behaving? Do You Know?

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The Brutal Facts

- During the mid 90's, District 15 had a negative correlation between student performance and cost-per-pupil
- Not much of anything was getting better
- We didn't have a clue about how to improve the organization



The Most Brutal Fact

- In 1997, we submitted a state “Baldrige” application. We received 200 points and 81 OFI’s
- We were given the “thanks for trying award”
- We were suffering from a bad case of organizational arrogance



What Needs To Happen If You Are Ever Going To Accomplish Your Mission

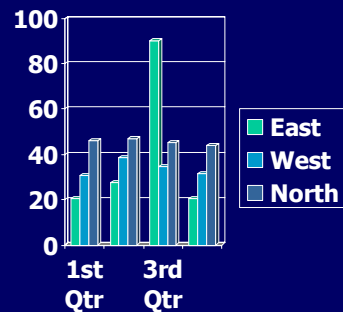
- You need everyone in your district to be on a never-ending quest of continual improvement—that means all employees start where they are and work to improve, gradually over time, the processes that they “own”

What Is A Process?

- "A series of actions or operations conducting to an end" (Webster)
- "Almost everything an organization does involves a process" (APQC)
- "A process is a systematic series of activities required to achieve a goal" (APQC)

Observations About Process Measurement (Harry and Schroeder)

- An organization values what it measures. If you don't measure it, you don't value it. Organizations that do not measure what they profess to value don't know much about what the value.



Observations About Process Measurement

(Harry and Schroeder)

- You cannot change the performance of an organization using results data. Results data can only tell you what is working and what needs improvement.
- If your organization cannot express how well a process is performing in the form of a measurement, you do not understand and cannot improve the process.

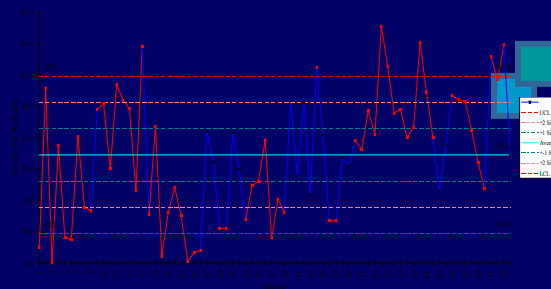
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Observations About Process Measurement

(Harry and Schroeder)

- Benchmark and process data can effectively 'unfreeze' the apathy or the status quo that keeps an organization static

Reading (Not Proficient on MSA in 2005) Grades 3, 4, 5, 6, 7, 8, 10

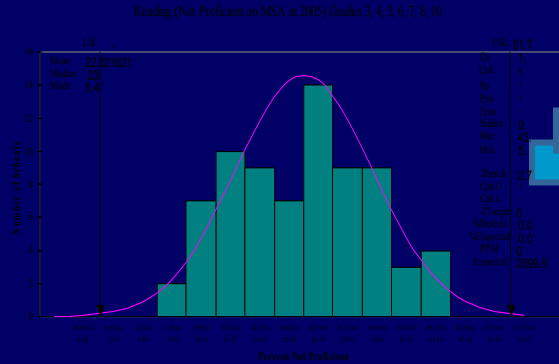


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Observations About Process Measurement

(Harry and Schroeder)

- Statistics allow us to measure, improve, and monitor the processes within our organizations. Statistics are the tool that separates common sense reasoning from extraordinary reasoning.



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Management by Fact

- MBF is an approach to managing people and processes that is predicted on making decisions that are *informed* by factual information
- MBF works when process owners listen the 'voice of the process'

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How Do We Continually Improve Processes?

- We need to understand if processes are behaving normally or abnormally
- We need to understand what the variation in the process is telling us
- We need to understand that there is an infinite amount of opportunities to improve any process

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What Is Meant By Process Behavior?

- Processes exhibit two types of behavior
 - The first is (**stable, routine, common, predictable**) or (**unstable, exceptional, special, unpredictable**) behavior or variation
 - The second is how **capable** the process is

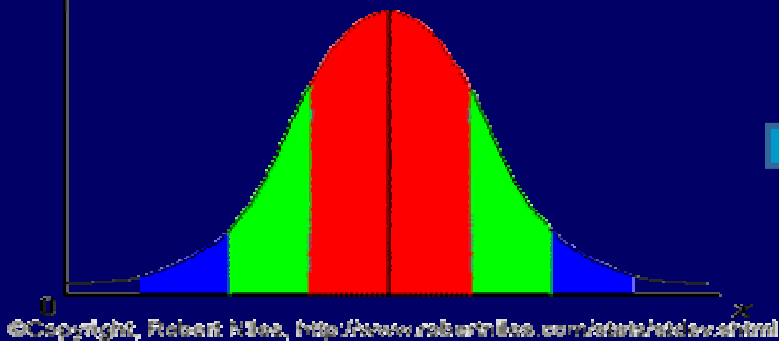
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What Does Predictable Mean?

- Predictable behavior is consistent over time. We can use past behavior to predict future behavior. (*This is great*)
- Unpredictable behavior is changing over time. We cannot use past behavior to predict future behavior. (*This is very bad*)

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The Bell Shaped Curve And Its Relationship To Process Behavior



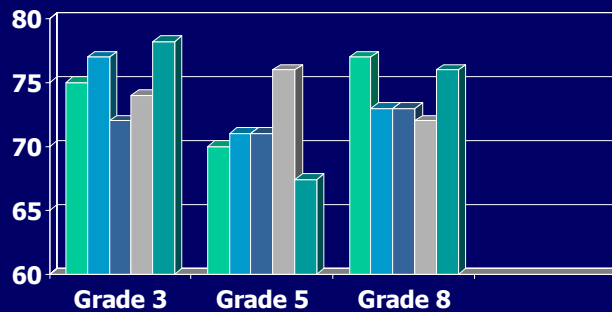
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What Do These Data Tell You About This Reading Process?

- Grade 3= 75,77,72,74,78.2
- Grade 5= 70,71,71,76,67.4
- Grade 8= 77,73,73,72,76

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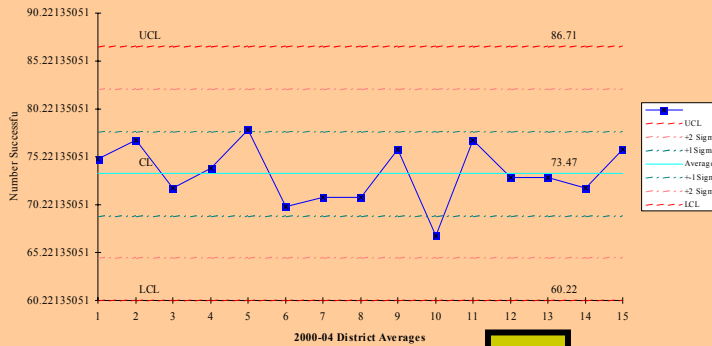
Same Reading Data in Bar Chart Form



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What Does A Predictable Process Look Like?

ISAT Reading Percent Meets/Exceeds in Grades 3-5-8



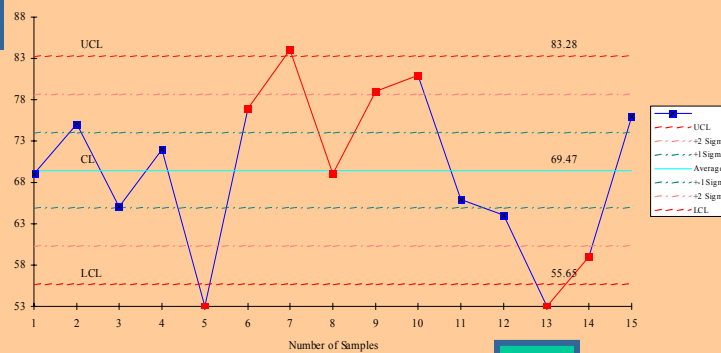
Statistical Process Control

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What Does An Unpredictable Process Look Like?

ISAT Writing Percent Meets/Exceeds in Grades 3-5-8



Statistical Process Control

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The Two Types of Process Behavior

- Predictable or stable
 - Many common causes
 - No assignable causes
 - Improvement requires fundamental change in the process
- Unpredictable or unstable
 - Many common causes
 - Some assignable causes
 - Improvement comes from removing the assignable causes

How Can I Use This Information?

- “The distinction between the two types of variation leads to two different routes to continually improve a process. When a process is unpredictable, you address the assignable causes. If the process is predictable, it is a waste of time to look for assignable causes.



What Else Will Help Me Understand Process Behavior?

- You will want to verify if the process can achieve your goals or targets. This information will tell you if the process is “capable.”
- You find that out by using a histogram

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What Does Capable Mean?

- When a process is capable, it means the process can achieve the desired result. It says that if the process is used as designed, then you can expect it to produce what you want or what your customer expects.

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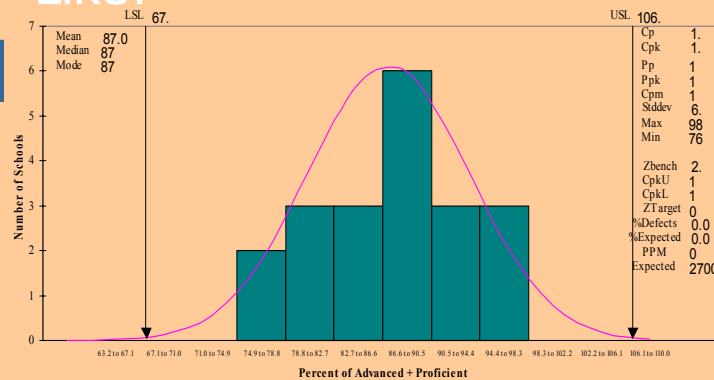
What Is A Histogram?

- It is another way of graphically displaying the variation of a process. It shows you how frequently numbers or events occur in the process and relates that frequency to a bell shaped curve to help you determine if the variation is normal and what the limits of the process are.

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What Does A Histogram Look Like?

Reading Histogram for 2003 and 2004

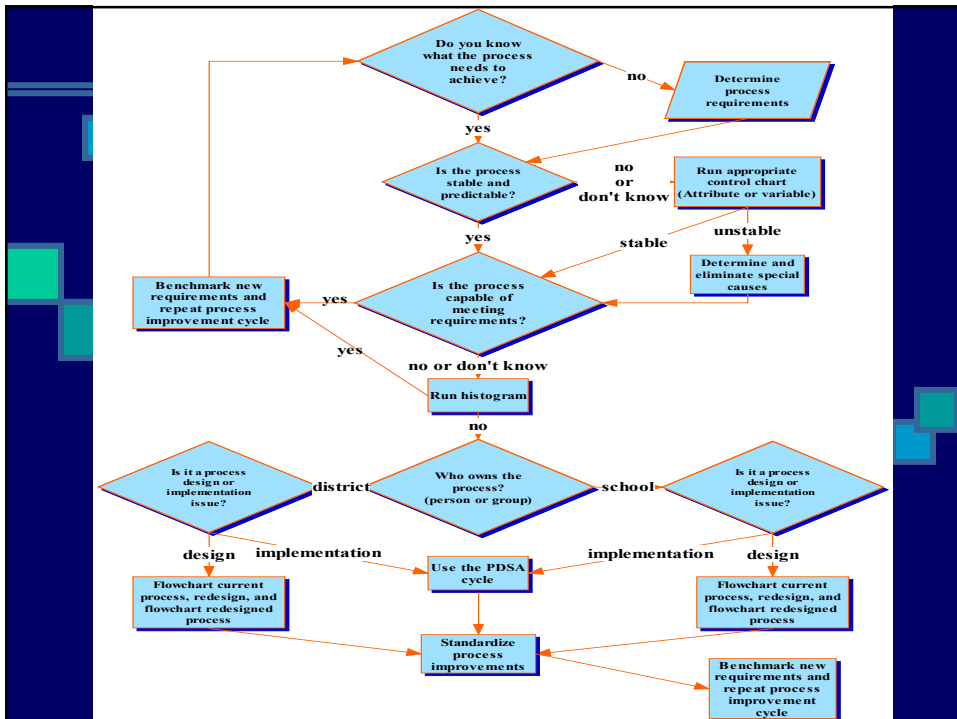


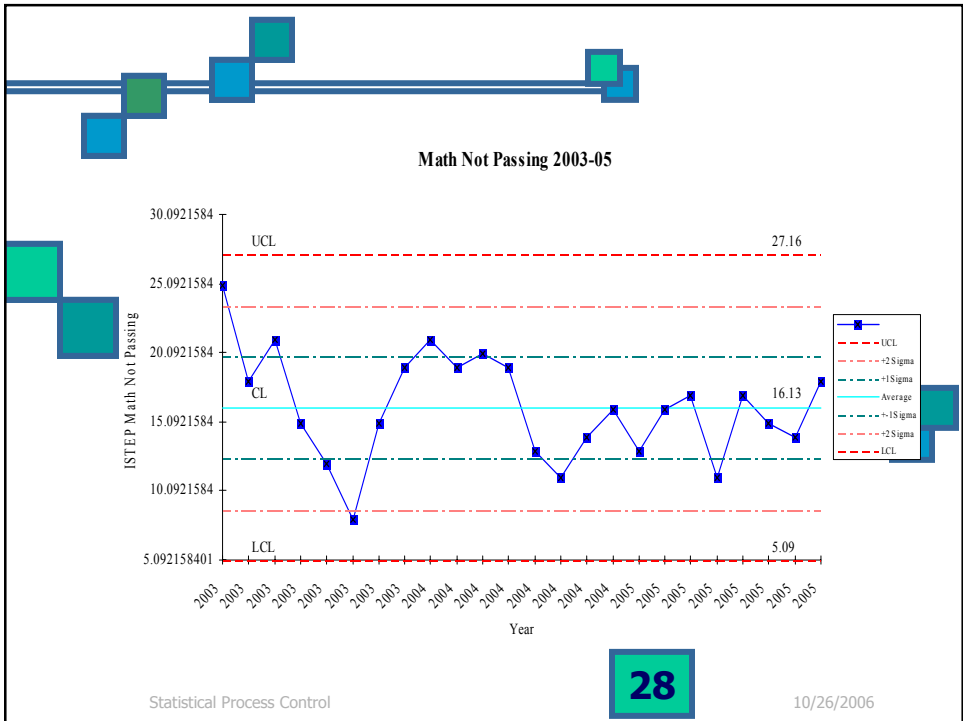
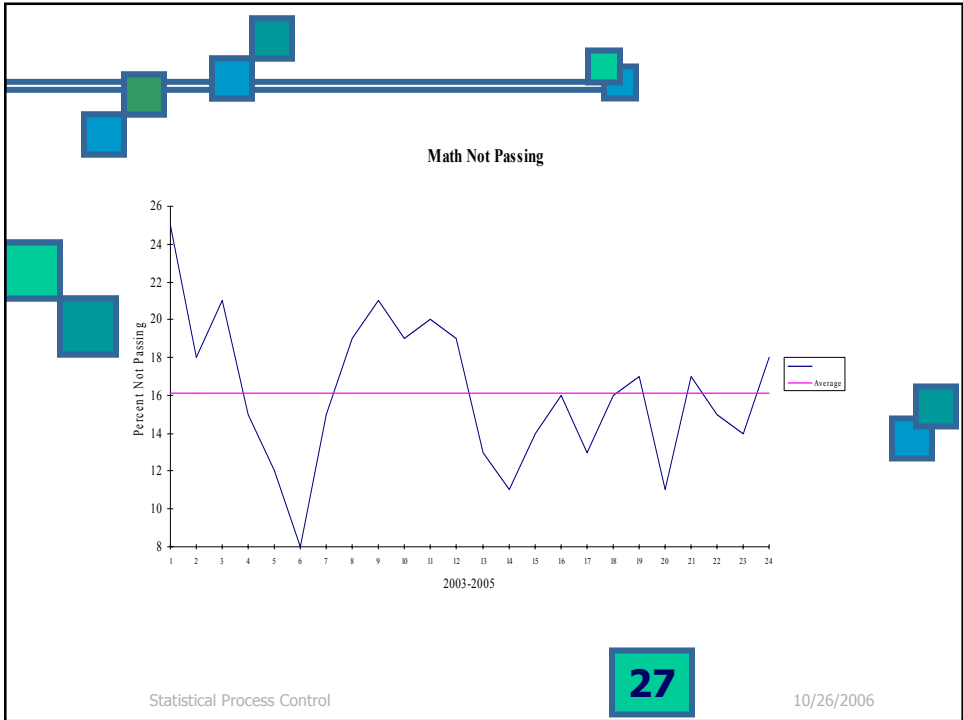
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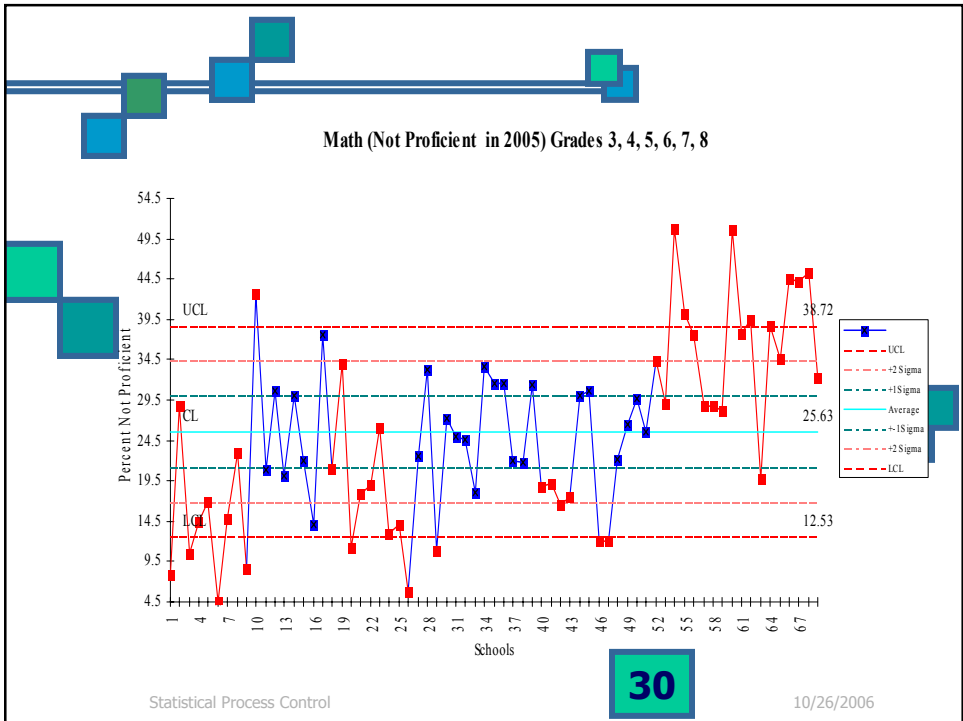
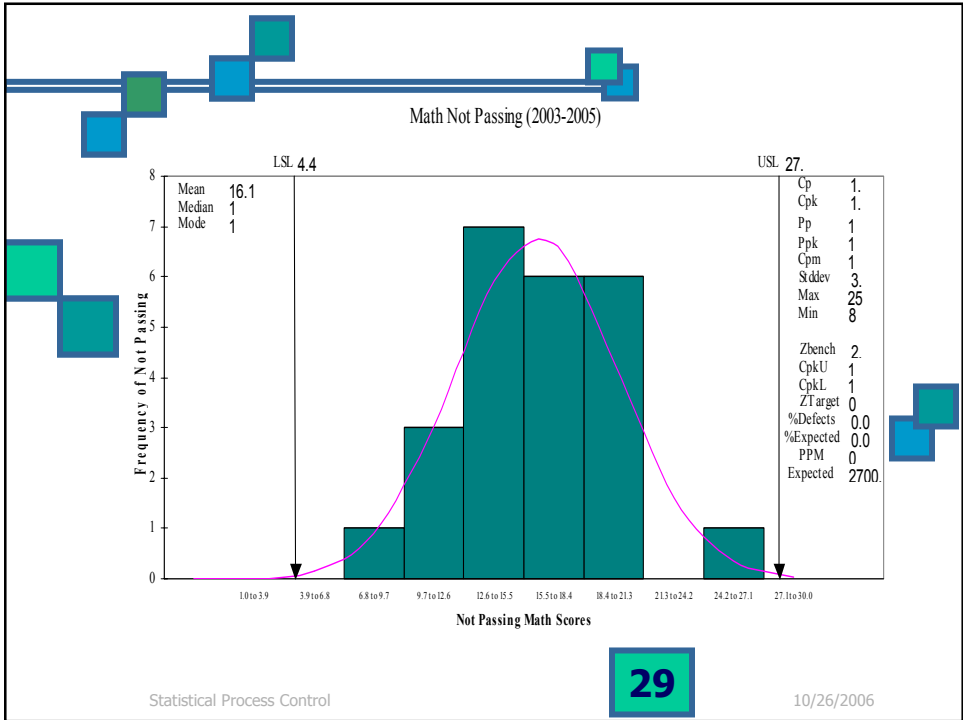
What Process Owners Need to Know

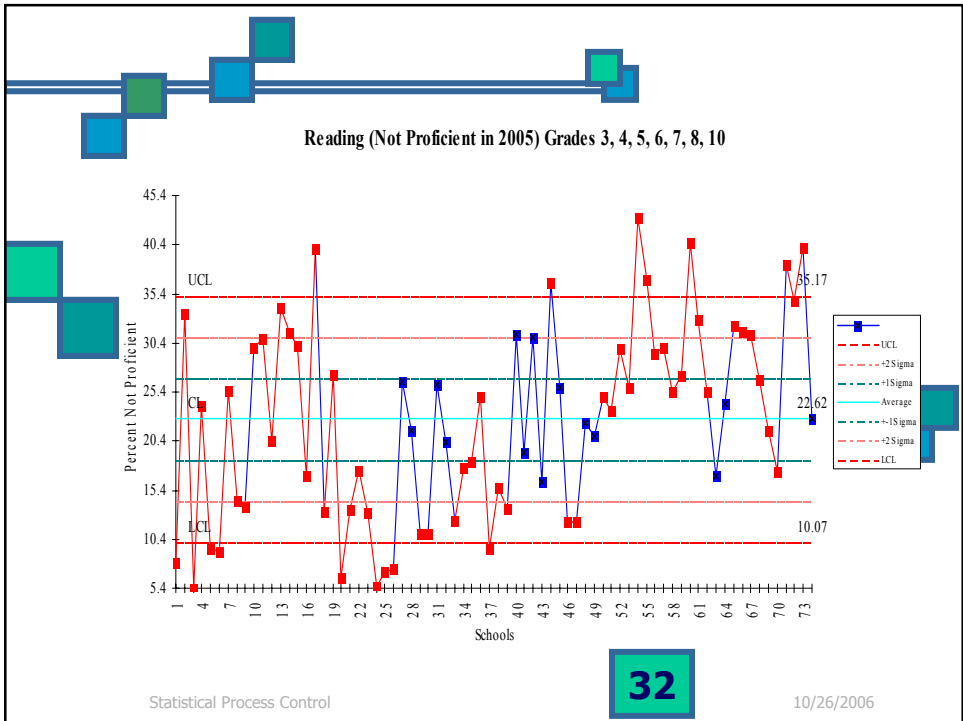
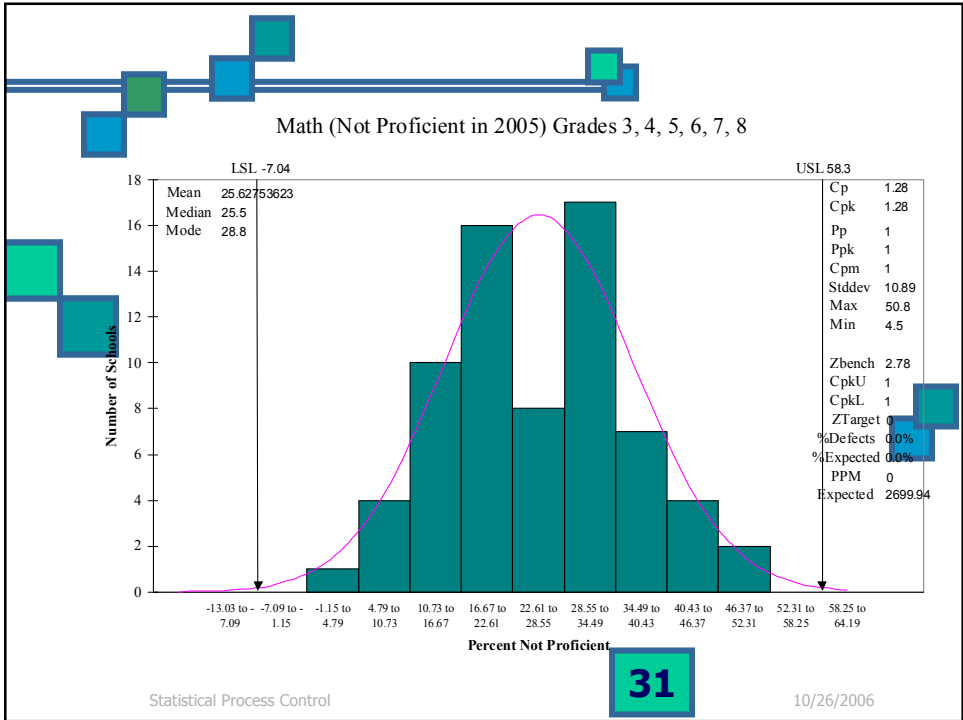
- Is the process I own predictable (stable) or unpredictable (unstable)?
- Is the process I own capable of meeting or exceeding expectations?
- How do my process results compare to best-in-class results

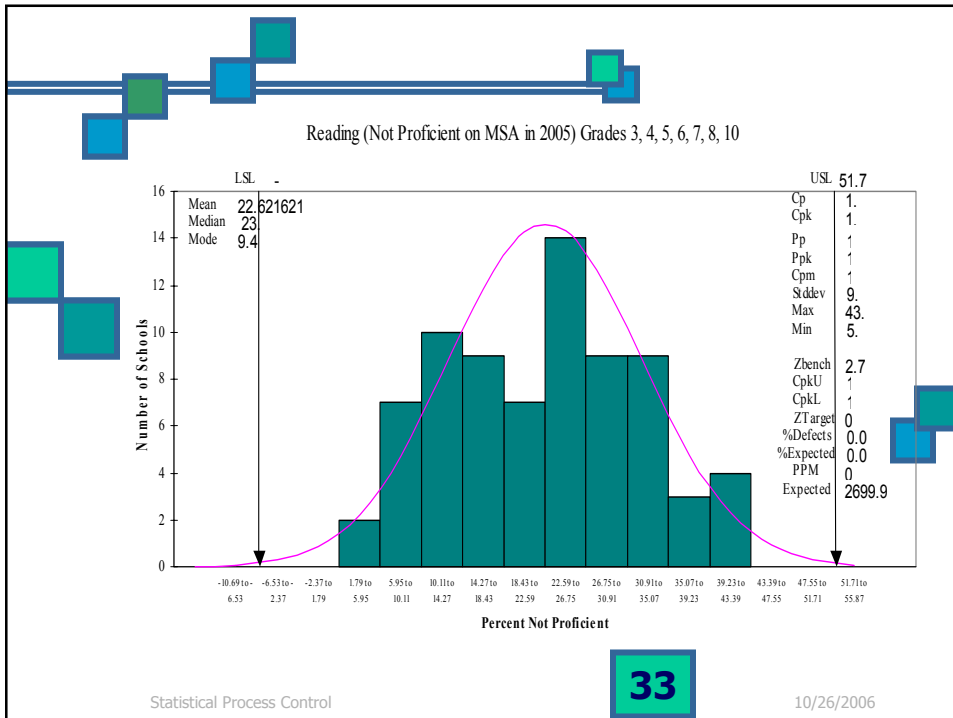
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Specifically, What Do We Do To Improve A Process?

- Visualize the process
 - Flowchart
 - Cause-and-effect diagram (fishbone)
- Monitor process behavior
 - Process Control Charts
 - Histograms
 - Comparisons (benchmarks)

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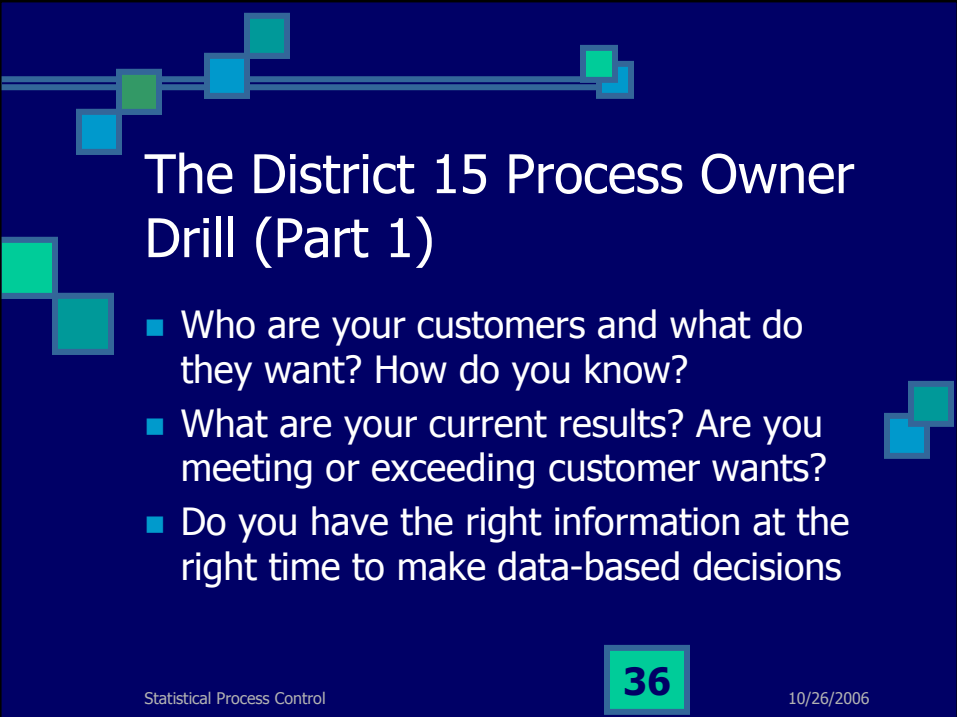
Statistical Process Control

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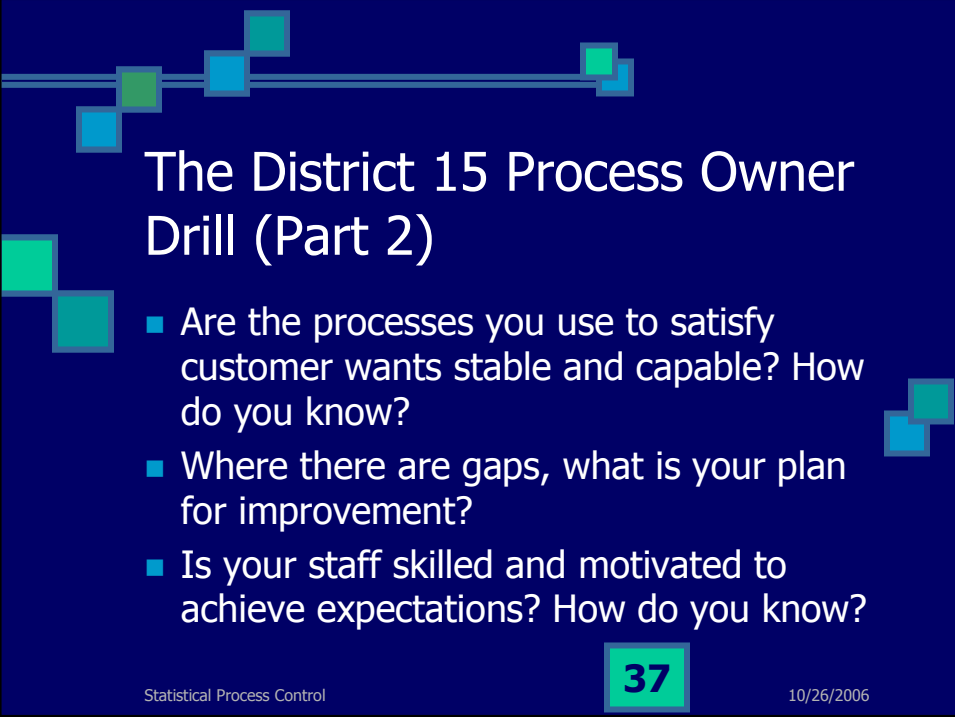
Making Sense of Processes

- If you want to continually improve processes, you have to first visualize them and then know how they behave. Flowcharts, cause and effect diagrams, control charts, and histograms are incredibly powerful ways of analyzing the behavior of processes. Using available data this way will always improve processes and save resources.



The District 15 Process Owner Drill (Part 1)

- Who are your customers and what do they want? How do you know?
- What are your current results? Are you meeting or exceeding customer wants?
- Do you have the right information at the right time to make data-based decisions



The District 15 Process Owner Drill (Part 2)

- Are the processes you use to satisfy customer wants stable and capable? How do you know?
- Where there are gaps, what is your plan for improvement?
- Is your staff skilled and motivated to achieve expectations? How do you know?

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Implications?

- District?
- School?
- Classroom?

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Important Resources for Understanding Processes

- *Making Sense of Data: SPC for the Service Sector* (Donald J. Wheeler, 2003)
- *The New Philosophy for K-12 Education: A Deming Framework for Transforming America's Schools* (James F. Leonard, 1996)
- *QI Macros for Excel* (Jay Arthur, 2003)