

# Lessons from Dr. Deming's Red Bead Experiment

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**Steven S Prevette**

Senior Statistician  
Savannah River Nuclear Solutions, LLC

**FLUOR**<sup>®</sup>

# Lessons of the Beads

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- You now have a common experience with thousands of individuals
- Did you have an “Aha” moment?
- Lessons
- Why do we need measurement data?

# Aha! Moments



# DOE's Integrated Safety Management System



# Lessons

- 1) It's the system, not the workers. If you want to improve performance, you must work on the system.
- 2) Quality is made at the top. Quality is an outcome of the system. Top management owns the system.
- 3) Numerical goals and production standards can be meaningless. The number of red beads produced is determined by the process, not by the standard.
- 4) Rewarding or punishing the Willing Workers had no effect on the outcome. Extrinsic motivation is not effective.

# Lessons

- 5) We can use statistics to create a quality control chart and look for problem areas and to predict future performance.
- 6) A faulty item is not a signal of "special" causes. A process can be stable, in-control and be producing 100 percent defective items. "Defects" are defined by specification, not by process.
- 7) Rigid and precise procedures are not sufficient to produce the desired quality.

# Lessons

- 8) Keeping the place open with only the "best" workers was acting on "superstitious" knowledge.
- 9) Management was "tampering" with the system by rewarding and punishing the Willing Workers.
- 10) People are not always the dominant source of variability.
- 11) Slogans, Exhortations and Posters Are At Best Useless To The Willing Worker.

*Ref: Dr. W Edwards Deming, [The New Economics](#)*

# Common Misconceptions about Numbers

- If you can't measure it you can't manage it
- What gets measured gets managed
- McNamara Whiz Kids (Vietnam War)
- All numbers need a goal, a target
- Given two numbers, they will be different

*Numerical Illiteracy*

*- Dr. Wheeler*



# Why Measure?

- A person armed with data is never at the mercy of a person armed only with an argument (Phil Monroe)
- Our corporations want to make informed decisions, to manage by fact
- To predict the future
- To build a better future

*In God We Trust, All Others Bring Data*