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W. Edwards Deming

1900 - 1993
Deming in Japan
“Quality is everyone's responsibility.”
Dr. W. Edwards Deming

http://100qualityquotes.wordpress.com/
Sponsored by Intrans and E.I.D

“You can have quality without lean, but you cannot achieve lean without quality.”

Jim Manley,
July 2014 CQI Learning Lunch
“It is not enough to do your best; you must know what to do, and then do your best”
- W. Edwards Deming
APPRECIATION FOR A SYSTEM

PSYCHOLOGY

UNDERSTANDING VARIATION

THEORY OF KNOWLEDGE
Deming’s System of Profound Knowledge

“The various segments of the system . . . cannot be separated. They interact with each other. For example knowledge about psychology is incomplete without knowledge of variation.”
Deming’s System of Profound Knowledge

- Theory of Knowledge
- Understanding Variation
- Psychology
- Appreciation for a System

The diagram illustrates how these elements interconnect to form a comprehensive understanding of systems and knowledge.
A system is a network of interdependent components that work together to accomplish the aim of the system.
Production Viewed as a System with Three Types of Processes Identified

"Driver" Processes:
- Receipt and test of materials
- Design and Redesign
- Consumer Research

"Mainstay" Processes:
- Suppliers A, B, C, D
- Production, assembly, and inspection
- Distribution
- Consumers

"Support" Processes:
- Tests of processes, machines, methods, and costs

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Deming’s System of Profound Knowledge

APPRECIATION FOR A SYSTEM

PSYCHOLOGY

UNDERSTANDING VARIATION

THEORY OF KNOWLEDGE
“If I had to reduce my message for management to just a few words, I’d say it all had to do with reducing variation.”

W. Edwards Deming
The Shewhart Control Chart

- Upper Natural Process Limits
- Lower Natural Process Limits

Process Data

Time Series or Sequence
Sources of Common Cause Variation in Loan Boarding Operations
Number of items requiring interpretation
Level of standardization in work received
Clarity of language used to specify terms
Helpfulness of leader
Cooperation from internal customers
Skill level of trainer
Number of errors in work received
Complexity of work to be done
Percent of work to be performed manually
Clarity of process steps
Percent of work to do that is automated
Volume of work assigned in a day
Number of items requiring re-work, corrections
Amount of work in each unit
Percent of work that is error-free
Deming’s System of Profound Knowledge

- Appreciation for a System
- Understanding Variation
- Theory of Knowledge

- Psychology

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NEW CUYAMA

Population 562
Ft. above sea level 2150
Established 1951

TOTAL 4663
Enlargement of a committee does not necessarily improve results.
Deming’s System of Profound Knowledge

- APPRECIATION FOR A SYSTEM
- UNDERSTANDING VARIATION
- THEORY OF KNOWLEDGE

PSYCHOLOGY
“Sir, I’d like to speak to you about your new incentive program.”
People are different in every way and should not be treated as if they are identical.
People are born with a natural inclination to learn and experience joy in work
People need to be in relationships with others and be loved, respected and esteemed by others.
There are many types of interactions between individuals and any system of management
A Lens Through Which to See With An Outside View—The System of Profound Knowledge

Components of The Whole

- **Appreciation for a System**
  A system is a network of interdependent components that work together to accomplish the aim of the system

- **Understanding Variation**
  There will always be variation.....

- **Theory of Knowledge**
  Knowledge is built on theory

- **Psychology**
  Individuals, Groups, Society, Change

“A system cannot understand itself.”

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The Red Bead Experiment
# The Red Beads

## 10 Vacancies

*(educational requirements minimal)*

<table>
<thead>
<tr>
<th>Role</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Recorder</td>
<td>Able to record figures in a spreadsheet. Must be sharp.</td>
</tr>
<tr>
<td>1 Chief Inspector</td>
<td>Able to compare figures and speak in a loud, clear voice</td>
</tr>
<tr>
<td>2 Junior Inspectors</td>
<td>Able to count (perhaps up to 20) and write clearly</td>
</tr>
<tr>
<td>6 Willing Workers</td>
<td>No education needed; training will be provided. Willing and able to obey orders without question or argument.</td>
</tr>
</tbody>
</table>
What did we learn here? [Red Beads]

1. What was the source of low performance by the workers?

1. The cause of the low yield was red beads in the incoming material. Get the red beads out of the system.

2. What influence are the willing workers able to exert to improve quality?

2. The willing workers are totally helpless to improve quality. They will continue to make red beads so long as there are red beads in the raw material. The experiment is stupidly simple, but it makes the point. Once people have seen it, they find red beads (sources of trouble) all over their organizations.
What did we learn here? [Red Beads]

3. What is the source of the variation between lots and between workers?

The variation between lots and between workers arose from the system itself, not from the workers.

4. What can be said about predicting future performance based upon past performance?

The performance of anybody on any one day is useless as a basis for prediction of his performance on any other day.
A psychologist that possesses even a crude understanding of variation as will be learned in the experiment with the Red Beads (Ch. 7) could no longer participate in refinement of a plan for ranking people.
Review

With a partner:
Discuss the top lessons you are taking away from the Red Bead Experiment.

Share where you have witnessed Red Beads in your work? How are Red Beads addressed, discussed, improved?
**Why?**

Our aim is to teach participants the fundamentals of quality systems, including quality management, continuous improvement, innovation and leadership exemplified in the System of Profound Knowledge®.

We help participants apply these principles, practices and tools to make a significant, positive difference in their professional lives and their organizations.

**Who is it for?**

For any person or organization that desires to be a leader in quality and innovation.

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to the System of Profound Knowledge® and Theory of Knowledge</td>
</tr>
<tr>
<td>2</td>
<td>Voice of the Customer</td>
</tr>
<tr>
<td>3</td>
<td>Appreciation for a System</td>
</tr>
<tr>
<td>4</td>
<td>Understanding Variation, Measurement</td>
</tr>
<tr>
<td>5</td>
<td>Psychology</td>
</tr>
<tr>
<td>6</td>
<td>Transformation and Capstone Project Presentation</td>
</tr>
</tbody>
</table>

Now Enrolling [cqiacademy.com](http://cqiacademy.com) for Academy for Quality Management Fundamentals
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