

# Deming's Profound Knowledge

## A Discussion Guide for School Leaders



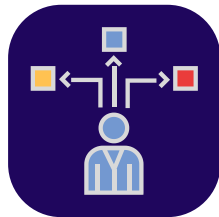
### Appreciation for A System

From a systems point of view, a school is a network of interdependent people, departments, and divisions that rely on effective leadership to prevent internal competition and ensure cooperation toward a common aim, much like an orchestra under a skilled conductor.



### Understanding Variation

There will always be variation between output, people, results, level of service, or product quality. Two common mistakes in leadership are reacting to common causes as if they were special causes and treating special causes as if they were common.



### Theory of Knowledge (Action)

Leadership is prediction guided by theory. Theory provides meaning to experience and drives organizational learning by comparing predictions with observations. Knowledge comes from testing theory, not information alone.



### Psychology

People have different abilities and inclinations. Good leadership recognizes these differences to nurture learning, innovation, and enjoyment of work. Effective leaders foster intrinsic motivation and confidence among faculty and staff, which leads to meaningful and lasting improvement across the school.

## Appreciation for A System



### Deming:

- A system is a network of interdependent components that work together to try to accomplish the aim of the system. Without an aim, there is no system.
- The greater the independence between components the greater will be the the need for communication and cooperation between them. Also, the greater need for overall leadership.
- The efforts of various divisions or departments are not additive. One division or department to achieve its goals, left to itself, will kill off another division or department.
- An example of a well optimized system is a good orchestra.

Deming, W. Edwards. *The New Economics for Industry, Government, Education*. 3rd ed., Cambridge, Massachusetts MIT Press, 2018.

### Essential Questions:

- How do future trends and competitor schools influence the dynamics of our system?
- How do value judgments about the nature of education shape the aim and direction of our system?
- Why must a system be actively managed or led, and what happens if it is not?
- How can leaders prevent divisions and departments from becoming competitive in ways that damage the overall system?
- Why is managing larger systems more challenging, and how can leaders navigate this complexity?
- What are the boundaries of our system, and how do we define them to guide effective leadership?
- Why is it difficult for a system to fully understand itself, and how can outside perspectives support its improvement?
- How can leadership effectively manage the interdependence between various components to align with the system's overall aim?

#### Adapated From:

Moen , Ronald D. , and Clifford L. Norman . "Always Applicable - Deming's System of Profound Knowledge Remains Relevant for Management and Quality Professionals Today." *Quality Progress* , June 2016, pp. 47–53, [www.qualityprogress.com](http://www.qualityprogress.com). Accessed 10 Dec. 2023.

### Leadership Disposition:

- **Understands interdependence:** Recognizes that components of the school system (staff, departments, students) must work together toward a common aim, rather than in isolation.
- **Focuses on process:** Prioritizes understanding and improving the processes within the school rather than just focusing on outcomes like test scores or graduation rates.
- **Views the system holistically:** Considers the entire school ecosystem, including external factors like community needs and expectations, rather than focusing on isolated issues.
- **Fosters collaboration:** Encourages cooperation across departments and avoids fostering a competitive environment that could harm the overall system.
- **Aligns team efforts with school goals:** Ensures that each group within the school understands how their work supports the school's overall aims and vision.
- **Leverages feedback effectively:** Values feedback from stakeholders (students, staff, community), understanding that while surveys are useful, they may not provide the full picture.
- **Optimizes for the whole:** Recognizes that optimizing parts of the system (e.g., certain programs or departments) doesn't necessarily improve the entire school's effectiveness.

#### Adapted From:

Carder, Ph.D., Brooks , and Marilyn Monda, MA. "Deming's Profound Knowledge and Leadership "We Are Still Not out of the Crisis" ." ASQ Human Development and Leadership Division, 2013.

## Understanding of Variation



### Deming:

- There will always be variation between output, people, results, level of service, or product quality
- There are two mistakes frequently made in attempts to improve results:
  - To react to an outcome as if it came from a special cause when it actually came from common causes of variation.
  - To treat an outcome as if it came from common causes of variation when it actually came from a special cause.
- A process may be in statistical control or it may not be. In the state of statistical control, the variation to expect in the future is predictable.

Deming, W. Edwards. *The New Economics for Industry, Government, Education*. 3rd ed., Cambridge, Massachusetts MIT Press, 2018.

### Essential Questions:

- How can we develop awareness of the inevitable variation within our school system, and how should this influence our decision-making?
- What is the importance of having a stable system, and how do we assess the capability of our school to achieve consistent results (that are intentional)?
- How can we distinguish between special causes (individual, unique events) and common causes (systemic issues) of variation in our school's performance?
- What are the risks and costs of tampering with systems that are experiencing normal variation, and how can we avoid this costly mistake?
- How can school leaders use data effectively while accounting for different sources of uncertainty and variation?
- What is the difference between using data for enumerative studies (to understand the current system) versus using it for analytic problems (to make predictions about future performance)?
- How can we ensure that our data-driven decisions are informed by a deep understanding of the system's variation and not based on incomplete or misleading data?
- What strategies can we employ to predict future outcomes more effectively based on the data we collect and analyze today?

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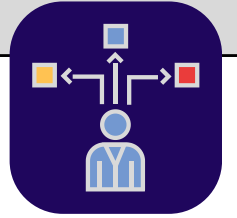
### Leadership Disposition:

- **Interprets data with an understanding of variation:** Recognizes that random fluctuations occur in performance and avoids making decisions based on normal variation.
- **Avoids overreacting to short-term changes:** Resists the temptation to take immediate action based on single data points or small shifts, understanding the natural ebb and flow of system performance.
- **Focuses on improving systems, not individuals:** Prioritizes systemic improvements rather than blaming or over-praising individuals for results driven by normal variation.
- **Recognizes the limits of intervention:** Understands that frequent interventions based on short-term results can be counterproductive and may hinder progress.
- **Emphasizes long-term process improvement:** Concentrates efforts on enhancing the overall system and processes rather than reacting to short-term performance spikes or dips.
- **Supports team productivity through system improvements:** Rather than micromanaging, focuses on actions that make it easier for staff to succeed, such as improving tools, resources, and processes.
- **Exhibits calm leadership during fluctuations:** Maintains composure during performance changes, knowing that the most important work happens in long-term preparation, not in momentary corrections.

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## Theory of Knowledge (Action)



### Deming:

- Management (Leadership) is prediction. Theory of Knowledge (Action) helps us understand that management (leadership) in any form is prediction.
- Rational prediction requires theory and builds knowledge through systemic revision and extension of theory based on comparison of prediction with observation.
- Without theory, experience has no meaning. Without theory one has no questions to ask, Hence, without theory there is no learning.
- No number of (positive) examples establishes a theory, yet a single unexplained failure of a theory requires modification or even abandonment of the the theory.
- Information is not knowledge. Knowledge comes from theory. Without theory, there is no way to use information that comes to us in the instant.

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### Essential Questions:

- How can school leaders use prediction as a tool to guide decision-making and improve outcomes?
- In what ways does theory shape our understanding and application of knowledge in school leadership?
- How do we distinguish between information and true knowledge in our educational practice?
- Why is a strong theoretical foundation necessary for making rational predictions in a school setting?
- How does interpreting data from tests and experiments inform our ability to make accurate predictions for our schools?
- Why are clear operational definitions critical for ensuring shared understanding and consistency in school processes?
- What are the limitations of expanding committees or teams in the pursuit of knowledge, and what alternative approaches might be more effective?

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### Leadership Disposition:

- **Commitment to Continuous Learning:** Leaders foster an environment where both they and their teams are constantly learning and improving. They understand that organizational growth depends on the learning of individuals.
- **Disciplined Decision-Making:** Leaders rely on tested theories and data-driven insights rather than intuition or past experiences alone. They recognize the limits of intuition and make informed decisions based on evidence.
- **Critical Analysis of Cause and Effect:** Leaders challenge assumptions and avoid jumping to conclusions about cause and effect. They critically assess whether observed relationships are valid before acting on them.
- **Long-Term Thinking Over Quick Fixes:** Leaders resist the temptation to apply quick fixes to problems. Instead, they use structured, scientific methods like the PDSA cycle to ensure lasting, sustainable improvements.
- **Predictive Leadership:** Leaders approach their work as a process of prediction. They test their theories, learn from outcomes, and adapt their strategies accordingly.
- **Clarity in Communication and Expectations:** Leaders provide clear operational definitions to ensure that everyone shares the same understanding of goals and measures. They eliminate ambiguity to align their team's efforts..
- **Courage to Lead with Evidence:** Leaders make bold, evidence-based decisions, even in the face of resistance. They challenge assumptions and base their actions on data and evidence, striving for equity and progress in their schools.

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## Psychology



### Deming:

- People are different from one another. A manager (leader) of people must be aware of these differences and use them for the optimization of everybody's abilities and inclinations. This is not ranking people.
- One is born with a natural inclination to learn. Learning is a source of innovation. One inherits a right to enjoy his work. Good management (leadership) helps us to nurture and preserve these positive innate attributes of people.
- No one, child or grown up, can enjoy learning if he must be constantly concerned about grading and gold stars for his performance. Our educational system would be improved immeasurably by abolishment of grading. No one can enjoy his work if he will be ranked by others.
- Children feel good about themselves when they learn how to master a new activity. They become more intrinsically motivated. They develop self esteem and confidence. They develop self efficacy. Their work is meaningful and they will make improvements in what they do.

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### Essential Questions:

- How can an understanding of psychology enhance school leaders' ability to manage relationships and interactions within their school community?
- In what ways should school leaders account for the differences between individuals when fostering a positive and inclusive school culture?
- How can we nurture the natural inclination to learn in both students and staff, recognizing their individual learning styles and paces?
- How can school leaders create environments that honor the diverse ways people form relationships and seek love and esteem from others?
- What role do both intrinsic and extrinsic motivations play in shaping the behavior and performance of students and staff?
- How can school leaders strike a balance between using extrinsic motivation and fostering intrinsic motivation to prevent burnout or disengagement?
- In what ways can school leaders recognize and respond to the different levels of intrinsic and extrinsic motivation in their school community?

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### Leadership Disposition:

- **Understanding People:** A leader makes a continuous effort to understand how people function within the school's systems, recognizing that different individuals are motivated in different ways.
- **Leveraging Intrinsic Motivation:** A leader recognizes the importance of intrinsic motivation, such as the pride in doing a job well, rather than relying solely on external incentives or rewards.
- **Coaching, Not Judging:** A leader acts as a coach and counselor, helping staff improve their performance, rather than simply setting targets and holding people accountable through judgment or punitive measures.
- **Removing Obstacles to Success:** A leader actively removes barriers that hinder staff and students from finding joy and success in their work, creating an environment that promotes engagement and quality performance.
- **Prioritizing Important Work:** A leader distinguishes between urgent tasks and important ones, ensuring that critical initiatives are not overshadowed by immediate but less significant demands.
- **Understanding Motivation:** A leader takes the time to learn what motivates each team member, ensuring that rewards and recognition are meaningful and aligned with individual needs.

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