The Learning Imperative:
Quality Improvement as Organizational Learning

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Novartis Professor of Leadership and Management
Harvard Business School
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The Steinway Tale

Too late…

“Ouch! Let’s get serious”

“It’s ok, we’re a segmented market”

Volume

Quality
Focus on Rate of Improvement

At any point in time, benchmarks of absolute difference can be misleading for Company A.

Company A

Company B

Yamaha and Steinway pianos
Toyota and GM autos
Southwest and Traditional Airlines

How does Company B learn faster?
Core Proposition

In today’s dynamic environment, organizations produce and sustain success through constant learning.

The essential learning takes place in the context of real work -- distributed throughout the organization.

This requires (distributed) leadership.
1. Use the best knowledge obtainable (understood to be a moving target) to design work processes.
A System For Learning at Intermountain Health

System for creating clinical protocols

- Cross disciplinary teams
- Expert input
- Review available research
- Intelligence gathering
A System for Learning

1. Use the best knowledge obtainable (understood to be a moving target) to design work processes.
2. Enable employees to collaborate by making information available when and where it’s needed.
A System For Learning at Intermountain

- System for creating clinical protocols
- System for implementing clinical protocols
- Support for following clinical protocols
A System for Learning

1. Use the best knowledge obtainable (understood to be a moving target) to design work processes.
2. Enable employees to collaborate by making information available when and where it’s needed.
3. Capture process data routinely to discover how work is really being done.
System for creating clinical protocols

System for implementing clinical protocols

System for monitoring processes and outcomes

Support for following clinical protocols

A System For Learning at Intermountain
A System for Learning

1. Use the best knowledge obtainable (understood to be a moving target) to design work processes.
2. Enable employees to collaborate by making information available when and where it’s needed.
3. Capture process data routinely to discover how work is really being done.
4. Study these data in an effort to find ways to improve.
A System For Learning at Intermountain

- System for creating clinical protocols
- Support for following clinical protocols
- System for implementing clinical protocols
- System for monitoring processes and outcomes

Protocol over-ride and clinical research
Today’s central management challenge is to inspire and enable knowledge workers to bring, day in and day out, energy and ingenuity to bear on problems that can rarely be anticipated in advance.

What kind of culture is needed to make this work?

From A.C. Edmondson, *The competitive imperative of learning*, HBR, July/August 2008
## Drug Error Rate Data Collected in 8 Units in 2 Hospitals

<table>
<thead>
<tr>
<th>Work unit</th>
<th>Error rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memorial 1</td>
<td>23.68*</td>
</tr>
<tr>
<td>University 1</td>
<td>17.23</td>
</tr>
<tr>
<td>University 3</td>
<td>13.19</td>
</tr>
<tr>
<td>Memorial 2</td>
<td>11.02</td>
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<tr>
<td>Memorial 4</td>
<td>8.6</td>
</tr>
<tr>
<td>Memorial 5</td>
<td>10.31</td>
</tr>
<tr>
<td>University 2</td>
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</tr>
<tr>
<td>Memorial 3</td>
<td>2.34</td>
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</tbody>
</table>

* preventable & potential adverse drug events (ADEs) per 1000 patient-days.
### Units sorted by independent ratings of openness

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* preventable & potential adverse drug events (ADEs) per 1000 patient-days.

*Openness is local!*

*Coincidence?*
Imagine

An invitation to join an organization in which you will have the opportunity to look

Ignorant
Incompetent
Intrusive
Negative

This is the daily risk faced by those of us who work in the realm of ideas… (Or, for that matter, those of us who face any kind of uncertainty at work…)

HARVARD BUSINESS SCHOOL
Managing Interpersonal Risk

Facing the risk of appearing:
- Ignorant
- Incompetent
- Intrusive
- Negative

You can solve this easily by:
- Not asking questions
- Not admitting mistakes
- Not inquiring into others’ work
- Not criticizing others’ actions or questioning organizational systems or processes

Minimizing Risk: The Cognitive Calculus

Collective Benefits

• My ideas have benefits for the organization:
  • “[I had] certain proposed improvements…that would increase our results 50% or whatever percentage…”

BUT

Personal harm

If my ideas are unwelcome, I am the one who gets hurt:

• “My options, my pension, everything is at stake… why would I stir waters in this little area…”

• “[I need to have] money to pay my mortgage, to send my kids to school…”
Minimizing Risk: The Cognitive Calculus

Delayed and uncertain benefits

- When an idea is offered
  - Savings from ideas could be significant
  - Customer satisfaction might increase
  - Failure might be averted
- “...sometimes an idea that you have, usually I see it like three years later.”

BUT

Immediate and more certain harm

- Rejection or humiliation happens now
  - “I don’t want to speak out and get humiliated in front of everybody”
- People often assume bosses own or support the status quo
  - “[he] may have created those processes and therefore be offended or attached to them [if I speak up to change it]”
Silence is Over-Determined

<table>
<thead>
<tr>
<th></th>
<th>Voice</th>
<th>Silence</th>
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<tr>
<td>Who gains?</td>
<td>Organization</td>
<td>Self</td>
</tr>
<tr>
<td>When?</td>
<td>Delayed (&amp; uncertain)</td>
<td>Immediate (&amp; a near certainty)</td>
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What’s surprising is not that voice is rare, but that it occurs at all!

It is possible to create a climate in which interpersonal risk is minimized by a climate of trust and respect I call psychological safety.
Psychological safety is a belief that one will not be punished or humiliated for speaking up with ideas, questions, concerns, or mistakes.

A shared sense of psychological safety is a critical input to an effective learning system.

What gets in the way of experiencing psychological safety at work?
When Is Psychological Safety Essential?

1. In settings where knowledge keeps changing
2. When people need to collaborate to do the work
3. When employees must make good decisions real-time without management intervention

Psychological safety is needed because no one can perform perfectly in every situation when knowledge and best practice are moving targets...
EXCELLENT. THAT'S FOUR GOOD GUYS FOR IT AND TWO BAD GUYS AGAINST IT
Role-based Status explains differences in self-reported Psychological Safety

Status and Psychological Safety in the ICU

N=1100
Effects of status vary across organizations

• In some hospital units, status had no effect on psychological safety
• In others, the gaps were far larger than the average gaps
• Therefore, even though status had an effect on psychological safety that was easily discerned in the population, how status was handled varied widely
• …and that made all the difference

The difference lay in inclusive leadership.

Building Psychological Safety in the Workplace

It takes inclusive leaders who:

• Are accessible
• Acknowledge the limits of current knowledge
• “Go first” (particularly in displays of fallibility)
• Proactively invite input

*Inclusive leaders lower the psychological costs of voice and raise the psychological costs of silence*
"The perception that the surgeon has to know everything has to change. ...each person has an important job. For minimally invasive surgery you can’t ever stop talking. For [minimally invasive surgery], I have to be able to tell the surgeon to stop. This is very new. I would never had dared to say anything like that before, nothing was that important. So you have to develop a way to deal with communication in advance, such as anesthesia can be telling the surgeon what to do. It has got to be legitimate. This is really important. Everyone has access to key information and communication is essential. Anyone on the team can say something pertinent that will affect the operation. It is a different level of communication.”

(Anesthesiologist, Eastern Medical Center)
for some, it’s too much change

“If you see an [MIS case] on the list, it’s like, ‘oh, do we really have to do this... just give me a fresh blade and I’ll slash my wrists right now.” (OR Nurse, Chelsea Hospital)

for others, it’s a breath of fresh air

“I was so grateful I was picked [for the team]. Every time we are going to do an [MIS case] I’m excited. I feel like I’ve been enlightened.” (OR Nurse, Janus Hospital)
Many teams employed an execution frame by default and force of habit…

<table>
<thead>
<tr>
<th>Framing for execution</th>
<th>Project Purpose</th>
<th>Leader’s Role</th>
<th>Team’s Role</th>
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<td>“I can get it done”</td>
<td>Emphasis on role-based skills</td>
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Effective implementers, in contrast, framed the change as motivated by aspiration rather than by a defense against threat, as a team learning project rather than as individual skill acquisition, and as an organizational challenge rather than a technical challenge.

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<tr>
<td>Framing for learning</td>
<td>Aspirational: Purpose or Mission Driven</td>
<td>Interdependent team leader</td>
<td>Empowered team</td>
</tr>
<tr>
<td></td>
<td>e.g., helping patients recover faster</td>
<td>“I need your help”</td>
<td>“MICS is about what a group of people can do”</td>
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Ask Yourself

• Am I employing an execution frame or a learning frame?

• What are the implications of this for the nature of my/our work?
Spectrum of Uncertainty

Execution & Improvement

Factory

Routine Production

Improvement

Organizational Learning

Hospital

Complex Service Operation

Problem Solving

R&D

Projects/Initiatives

Innovation

DISCOVERY

UNCERTAINTY
Mapping the Failure Landscape

Process Deviations, System Breakdowns & Unsuccessful Trials as Sources of Improvement, Problem Solving & Innovation
Where Does Organizational Failure Come From?

<table>
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<th>Antecedents of failure</th>
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We are socialized (and sometimes rewarded by organizational incentives) to view all failure as bad. How valid are these beliefs? Let’s take a look…
“Dr. Ellington wrote an order for 0.8 milligrams (mg) per hour of morphine,” Nurse Ginny Swenson explained to Patrick O’Reilly, a newly hired nursing school graduate. Swenson had just wheeled Matthew, the patient, from the ICU to the medical/surgical floor unit. She described Matthew’s condition and instructed O’Reilly to program the electronic infusion pump so the child would receive his prescribed dosage of morphine. Swenson returned to her unit, leaving O’Reilly alone with Matthew. O’Reilly, unfamiliar with this type of electronic infusion pump, having only operated one during a training exercise, sought help from Nurse Molly Chen, who agreed to help him program the pump. None of the nurses on the floor were accustomed to using these pumps because patients in this unit rarely used continuously infused painkillers. To program the pump, Chen needed to enter both the morphine concentration and the rate of infusion. The nurses did not see a concentration listed on the medication label, because the label was folded over the edge of the cassette in a way that obscured some text. Chen utilized information visible on the label to calculate the concentration. She entered the rate of infusion at 0.8 mg per hour, as Swenson had instructed. Following hospital procedures that required a second person to double check intravenous medications, O’Reilly verified Chen’s calculations and the settings she’d programmed into the machine…”
## Causes of Failure in Organizations

<table>
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<tr>
<td><strong>Exploratory Experiment</strong></td>
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<tr>
<td><strong>Hypothesis-testing Experiment</strong></td>
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<tr>
<td><strong>Context/Process Uncertainty</strong></td>
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<td><strong>Process Complexity</strong></td>
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<td><strong>Task Challenge</strong></td>
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But, really…
Isn’t success better than failure?

Well, yes … but, actually, no.
You see, it depends.
What does success mean in each context?

- Factory
- Hospital
- R&D
- Laboratory

- Routine Production
- Complex Service Operation
- Development Projects
- Basic Science

- Improvement
- Problem Solving
- Innovation
- Discovery

UNCERTAINTY
## Failures Differ by Context in Frequency and Meaning

<table>
<thead>
<tr>
<th>Antecedents of failure</th>
<th>Context where most relevant</th>
</tr>
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<tbody>
<tr>
<td>Exploratory Experiment</td>
<td></td>
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<tr>
<td>Hypothesis-testing Experiment</td>
<td>R&amp;D</td>
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<td>Process Complexity</td>
<td></td>
</tr>
<tr>
<td>Task Challenge</td>
<td>Challenging/Complex Operations</td>
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*How well does fear work to prevent failure in each context?*
## More Precise Failure Terminology

<table>
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<th>Antecedents of failure</th>
<th>Type of Failure</th>
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<tr>
<td><strong>Exploratory Experiment</strong></td>
<td><strong>Unsuccessful Trial (R&amp;D)</strong></td>
</tr>
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<td><strong>Hypothesis-testing Experiment</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Context/Process Uncertainty</strong></td>
<td></td>
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<tr>
<td><strong>Process Complexity</strong></td>
<td><strong>System Breakdown (Hospital)</strong></td>
</tr>
<tr>
<td><strong>Task Challenge</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Process Inadequacy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Incompetence</strong></td>
<td><strong>Process Deviation (Factory)</strong></td>
</tr>
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# Learning Strategies in Each Context

<table>
<thead>
<tr>
<th>Context</th>
<th>Learning Strategy</th>
</tr>
</thead>
</table>
| R&D/Innovation (Unsuccessful Trials) | • Frequent, preferably intelligent, trials  
|                                      | • Share results quickly  
|                                      | • Use teams and/or field trips to generate design of new experiments and/or new ideas  
|                                      | • Psychological safety for experimenting  |
| Complex Operations (System Breakdowns)| • Heedful interrelating  
|                                      | • Interdisciplinary event reviews  
|                                      | • Form teams to search for vulnerabilities and teams to identify and process new knowledge  
|                                      | • Psychological safety for reporting and problem solving  |
| Routine Operations (Process Deviations)| • Train employees in problem solving  
|                                      | • Seek out and embrace deviations as signals for improvement  
|                                      | • Reward improvement suggestions  
|                                      | • Psychological safety for checking  |
Q: How do you become a learning organization

(a) You declare yourself a learning organization

(b) You humbly embark on a long journey of

building collective learning capabilities, identifying performance and opportunity gaps, and systematically tracking results…
The Leader’s job

Creating shared urgency about an opportunity or performance gap

A compelling aspiration that appeals to emotion, as well as to reason…

• A man on the moon in 10 years
• Achieving 100% patient safety
  • Zero Waste at Simmons
The Leader’s job

Creating shared urgency about an opportunity or performance gap

+ Creating a climate of psychological safety

+ Building and supporting a team-based infrastructure for experimentation and learning
A team-based learning infrastructure

*Organizations learn when their teams learn*

- From senior management teams to front-line production teams
- Cascading, loosely connected local learning activities

**From leaders:**
- Inspiration, direction, vision, urgency …
- Processes, resources and support

**From the front line:**
- Action, concrete changes, experiments
- Ideas and suggestions
Framing for Learning

Tell yourself that this [project/initiative/situation] is different from anything you've done before and presents an exciting and challenging opportunity to try out new approaches and learn from them…

See yourself as vitally important to a successful outcome and, yet, as unable to achieve it alone – without the willing participation of others…

Tell yourself that others (who are vitally important to a successful outcome) may bring key pieces of the puzzle that you don’t anticipate in advance…

*Communicate with others exactly as you would if the above three statements were in fact true*