



Improving While Operating: The Paradox of Learning

By Carey Walker and Matthew Bonnot

“In the Board’s view, NASA’s organizational culture and structure had as much to do with this accident as the External Tank foam. Organizational culture refers to the values, norms, beliefs, and practices that govern how an institution functions. At the most basic level, organizational culture defines the assumptions that employees make as they carry out their work. It is a powerful force that can persist through reorganizations and the reassignment of key personnel.”

“The Board concludes that NASA’s current organization does not provide effective checks and balances, does not have an independent safety program, and has not demonstrated the characteristics of a learning organization.”

--Columbia Accident Investigation Board, Aug 03

Introduction

On February 1, 2003, the Space Shuttle Columbia disintegrated on reentry into the Earth’s atmosphere. The technical cause was extensive damage to the thermal tiles on the left wing caused by a piece of insulating foam, which broke off the shuttle’s main fuel tank and struck the wing during launch two weeks earlier. The result was a breach of the Thermal Protection System, allowing superheated air to melt the aluminum structure of the wing.¹

Do you remember where you were when this happened? Probably not. Why? Because it was not the first time a NASA shuttle blew up.

Seventeen years earlier the Space Shuttle Challenger exploded 73 seconds into its flight, killing all aboard, a stunning disaster seared into the memory of a generation of Americans. We knew space flight was inherently dangerous; test pilots and astronauts had died before as the U.S. competed with the Soviets to put the first man on the moon. However, this was a new generation of “kinder and gentler” space flight with shuttle astronauts conducting experiments while orbiting the Earth. The Challenger mission was the 25th shuttle launch in a program that appeared as safe as a transatlantic airline flight to the average American.

Yet they all died, including Christa McAuliffe, the first teacher in space. Our myth of invincibility in space was gone when our hearts broke at the news of this explosion.

How could this happen *twice* in an organization once worshipped by every small child in America who wanted to grow up to be a NASA astronaut? Where did they go wrong? How did NASA stop learning?

NASA faced a challenge all successful organizations must confront. It is called the “paradox of learning,” the conflict in organizations between the desire to maintain a predictable and stable environment, and the need to adapt, innovate, and improve to solve problems and achieve results.² Judging by the findings of the Columbia Accident Investigation Board, NASA never solved this puzzle.

The purpose of this paper is to help guide you on a path to overcome this paradox and create a learning organization without the prompt of crisis or catastrophic failure. The process begins with a fundamental concept: *creating a culture of learning is not the end state for an organization but the means for achieving the end state, which is to improve the organization while operating to accomplish the mission.*

Improving While Operating

One of the most daunting tasks of an organizational-level leader is to improve the organization while



simultaneously accomplishing day-to-day missions.³ Leaders achieve long-term development (*improving*) by implementing a vision, a picture of the future framed by a value-based purpose that creates a path to drive behavior, change, and motivation.⁴ It describes where the organization must go, what it will look like, and how it will get there. Additionally, units must accomplish day-to-day missions (*operating*) by adapting to the environment, solving problems, and getting results. These are not mutually exclusive tasks. As ADRP 6-22, *Army Leadership*, states, “Mission accomplishment co-exists with an extended perspective towards maintaining and building the organization’s capabilities.”⁵

Both *improving* and *operating* require a commitment to learning, the “act or process of gaining knowledge or skills.”⁶ Based on our experience, units cannot sustain day-to-day operations or achieve long-term improvement without learning. The learning could be as simple as mastering common soldier tasks or as complex as preparing for a new regional area of responsibility. Whatever the case, learning requires the gaining of new knowledge, skills, and processes to modify behavior and gain results.⁷ If the organization, like NASA, does not modify its behavior, it will fall back on old practices, which might reduce group anxiety but will serve little use when dealing with complex problems or a changing operational environment.

All units have the capability of gaining knowledge, skills, and processes to modify behavior and get results. The learning threads that tie *improving* and *operating* together within an organization are adaptability and innovation. *Adaptability* means responding effectively to changing situations with appropriate, flexible, and timely actions. While we often characterize it as being reactive, adaptability requires critical and creative thinking as well as a comfort with ambiguity, risk taking, and decentralized execution to solve problems and get results.⁸ *Innovation* is the ability to develop new and creative ideas. It combines intuitive and analytical thinking to probe the environment, experiment with fresh ideas, and envision a better future.⁹ Successful organizations learn to adapt and innovate to meet mission requirements and achieve long-term development.

Consequently, leaders that focus on learning value problem solving, experimentation and, above all, results. Their end state is an adaptive, innovative organization that continues to improve. To achieve this state, leaders must address impediments to learning, the most significant of which is the learning paradox.

Impediments to learning

The concept of the learning paradox is best explained by Edgar Schein in his book, *Organizational Culture and Leadership*: “[i]t is a paradox of evolution or development that the more we learn how to do things and to stabilize what we have learned, the more unwilling or unable we become to adapt, change, and grow into new patterns, even when our changing environment demands such new patterns.”¹⁰ Schein goes on to say, “[t]he inevitable dilemma for the group, then, is how to avoid becoming so stable in its approach to its environment that it loses its ability to adapt, innovate, and grow.”¹¹

This is a significant issue. Organizational culture is the shared beliefs of a group used to solve problems and manage internal anxiety. The culture reflects the organization’s shared learning or “what we do and why we do it.”¹² It thrives on stability, consistency, and continuity.¹³ Strong cultures seek the path of least resistance. As long as the organization feels it is achieving success in meeting external demands, it will not question existing behaviors and the shared beliefs that drive thinking, feeling, and behaving. The mantra of a strong culture? *If it ain’t broke, don’t fix it.*

While strong, stable cultures can provide effective performance and unit cohesion, they are only as stable as the environment in which they operate. If the external environment is framed by uncertainty, complexity, and unintended consequences, strong cultures are at risk. The default setting for an organization is to resist change, not adapt to it. Adapting creates uncertainty, doubt, and anxiety. Strong cultures are built on shared emotional experiences and associated behaviors collectively learned by the group as a way to solve problems and control



anxiety. When challenged, members of the group instinctively fall back onto what they learned and ritually repeat existing behaviors associated with collective norms to avoid creating anxiety. Adapting to change is not a preferred option.¹⁴ Instead, stable organizations typically become complacent and risk averse. They tend to interpret data and frame problems to confirm their thinking rather than challenge it. They create “blind spots” in their analysis that prevent them from seeing the dangers that confront the organization.¹⁵

Within the military, the learning paradox is exasperated by a number of factors. Lieutenant General Sir John Kiszely, British Army, described these issues in a 2007 *Military Review* article on counterinsurgency. The first factor is a tendency toward anti-intellectualism within the armed forces. The bravado that fuels teamwork, loyalty, and unit cohesion, especially in combat units, tends to stifle creativity and innovation. No one wants the reputation among colleagues of being the “egghead;” it is all about warfighting, not reading books. A second factor is the reluctance of leaders to accept criticism. Militaries are inherently proud organizations with rigid hierarchies. When a supportive command climate does not exist, commanders often view criticism as a personal attack and a threat to their leadership. Closely related to this mindset is the fear of change. Militaries are conservative organizations and change brings uncertainty and doubt. Insecure leaders do not want subordinates second-guessing them. Finally, there is the tendency in the armed services to confuse progress with activity. Keeping service members busy does not mean they are learning or solving the organization’s problems. It simply means they are busy.¹⁶

The learning paradox was deeply rooted within NASA’s culture at the time of the Columbia accident. Though the agency underwent many management reforms in the wake of the Challenger explosion, the organization’s “powerful human space flight culture remained intact, as did many institutional practices, even if in modified form.”¹⁷ NASA continued to rely on past successes as a substitute for sound engineering practices, effective communications, and the airing of professional differences.¹⁸ “By the eve of the Columbia accident, institutional practices that were in effect at the time of the Challenger accident – such as inadequate concern over deviations from expected performance, a silent safety program, and schedule pressure – had returned to NASA.”¹⁹ Many senior leaders viewed the loss of the Challenger as an aberration, a “normal” accident, which was the cost of doing business in high-risk, technologically complex environment.²⁰

Maybe the best way to view the learning paradox is as an organizational learning disability. It is a psychological barrier erected by members of the organization as a defense mechanism to protect the group’s culture against uncertainty, doubt, and anxiety. The problem, however, is it tips organizations from stability into complacency, rigidity, and stagnation. It is like an insidious illness that slowly drains the energy and vitality out of strong, vibrant cultures.

How do leaders overcome this “learning disability”? How can an organization combine a strong culture with the need for continuous improvement? Schein posed the question this way, “...is it possible to imagine a culture that, by its very nature, is learning oriented, adaptive, and flexible? Can we stabilize perpetual learning and change? What would a culture look like that favored perpetual learning and flexibility?”²¹ The answer is a learning organization.

Defining the learning organization

To define the learning organization, we must first return to the fundamental concept covered earlier: *creating a culture of learning is not the end state for an organization but the means for achieving the end state, which is to improve the organization while operating to accomplish the mission.* This means the learning organization is the engine for change, not the destination. It is a shared belief embedded within the psyche of the organization, not simply an espoused value for something we wish to achieve. It is a way of thinking and acting (i.e., what we do and why we do it), not a knowledge management system sitting in the S3’s office.



Given this paradigm of what a learning organization is, we need to discuss what it does, which is the key for overcoming the learning paradox:

A learning organization fosters a culture of learning that solves problems and improves the organization through a supportive command climate, valuing member involvement in the gaining of knowledge, skills, and processes to modify behavior and get results.

A learning organization is able to overcome the learning paradox and get results because of its organizational culture, climate, and member involvement.

Culture of Learning. All groups with a shared history of solving problems and managing internal anxiety form a culture. What is unique about the culture of a learning organization are the shared beliefs – the collective norms and values, which form the foundation for a culture of learning.²² The first is the belief that the leaders are committed to organizational learning; they value learning and understand it is the catalyst for solving problems and improving the organization. Second is the belief that all members of the organization have a voice in the learning process; innovations and solutions arise from all levels within the organization, not just from senior leadership.

Supportive Command Climate. The command climate within the organization consists of collective perceptions of the work environment formed by members of the organization based on actions, policies, and procedures of the leadership.²³ It reflects how people think and feel. It is the commander's gateway for shaping the culture of learning. If leaders set the tone with a supportive and positive command climate, others will respond in kind. Members of the organization will feel better about themselves, have stronger commitments, and produce better solutions.²⁴

Member Involvement. According to Peter Senge, author of *The Fifth Discipline: The Art & Practice of the Learning Organization*, "Organizations learn through individuals who learn. Individual learning does not guarantee organizational learning. But without it, no organizational learning occurs."²⁵ In other words, organizations achieve success through member involvement, which in the Army is foundational to the philosophy of mission command.²⁶ Soldiers develop tacit knowledge through the daily experience of operating within their specific environment and circumstances.²⁷ They assist in creating a shared understanding within the organization through collaboration and dialogue, which leads to adaptive approaches and innovative solutions to problems.

On paper, the framework for a learning organization looks straightforward and even simplistic — a culture of learning, a supportive command climate, and member involvement. Do not be deceived by the simplicity of this construct. Overcoming the learning paradox and creating a learning organization is difficult because it involves the human psyche and the ability to change how people think, feel, and behave.

Overcoming the Learning Paradox

Assessment. "Am I a member of a learning organization?" How would you answer this question? Based on your level of experience, you probably could answer it after a few weeks within a new organization by observing processes, practices, and behaviors to identify shared beliefs that drives thinking, feeling, and behaving.²⁸ For additional learning-specific assistance, Amy Edmondson, David Garvin, and Francesca Gino, the authors of, "Is Yours a Learning Organization?" from Harvard Business Review, provide a free on-line survey (available at los.hbs.edu).²⁹ It asks a series of questions about the learning environment, existing learning processes and practices, and the leadership within the organization.

Here are examples of assessment questions you can use when analyzing an organization:

How easy is it for members to speak up about what is on their minds?

How open is the organization to alternative ways of getting work done?



How often does the unit experiment with new ways of working?

What level of conflict and debate is allowed during discussions?

How open are leaders to input from others during discussion?

How regularly do leaders encourage multiple points of view?

How much time, resources, and opportunities do leaders allocate to identifying problems and organizational challenges?

How willing is the organization to modify existing policies, practices, and procedures to solve problems and achieve results?

Ultimately, your assessment must determine, from a learning organization perspective, the existence (or nonexistence) of two critical shared beliefs within the organization:

- 1) *The leaders are committed to organizational learning; they value learning and understand it is fundamental to unit success as the catalyst for solving problems and improving the organization.*
- 2) *All members of the organization have a voice in the learning process; innovations and solutions arise from all levels within the organization, not just from senior leadership.*

When we use the term “shared,” we mean the majority of the people in the organization embrace these beliefs. They are part of the collective consciousness (“*this is what we do and why we do it*”) and not merely the good ideas of a handful of key leaders. If you determine in your assessment that your organization has inculcated these beliefs, you have the framework for a learning organization. If the shared beliefs are not in place, you have to build the foundation of shared values and collective involvement for learning to occur.

Building the Foundation. How do you embed these two critical shared beliefs within the thinking of your organization? You do it by focusing on the problem, overcoming the learning paradox. The learning paradox is the conflict in organizations between the desire to maintain a predictable and stable environment, and the need to adapt, innovate, and improve to solve problems and achieve results. As discussed earlier, the default setting for many units is to resist change, limit innovation, and protect the group’s culture against uncertainty, doubt, and anxiety. To overcome the paradox of learning, leaders must embrace the importance of getting results through learning, problem solving, and experimentation. They do it by creating a supportive command climate that provides psychological safety within the organization.

The purpose for providing psychological safety is to counterbalance the anxiety created by the leader when challenging the existing values and norms in the organization. Schein calls this “learning anxiety,” the perceived risks associated with unlearning old habits and relearning new ones.³¹ Leaders reduce learning anxiety by creating an environment that fosters open communications, debate, multiple points of view, experimentation, and innovation. Most leaders conceptually understand this. The challenge is how to do it.

Embedding Mechanisms. In his research, Schein identified six primary embedding mechanisms for integrating the leader’s values and beliefs into the culture of an organization.³² When viewed collectively, these six tools focus on the use of power (position and personal) and influence techniques to establish priorities, set standards, communicate expectations, allocate rewards, and issue punishments within the organization.

What leaders pay attention to, measure, and control on a regular basis. This is the most powerful tool in the leader’s “learning” arsenal. It is how the boss establishes priorities and signals to the organization what is important. If the leader embraces the importance of learning in daily actions by asking questions, soliciting input, and listening to subordinates in solving problems, the organization will quickly get the message that this is the expected behavioral norm. If this behavior achieves results within the unit, members will soon share the belief that learning is fundamental to organizational success.



How leaders react to critical incidents and organizational crises. Many leaders talk a good game, but revert to old practices when under pressure. They say one thing and do another when confronting uncertainty or instability. How leaders react under stress is critical to the organization because the shared experience of a crisis has lasting effects on the psyche of subordinates. If the boss embraces disciplined initiative and adaptive behavior in demanding situations, it sends a clear and positive message to followers.

How leaders allocate resources. Resourcing and budgeting are clear indicators of the boss's priorities. If education and training are important, leaders align resources to meet developmental needs, both immediate and long term.

Deliberate role modeling, teaching, and coaching. If leaders truly believe that all members of the organization have a voice in the learning process, they have to be the chief advocate for encouraging experimentation and problem solving at the grassroots level. The primary way for doing this is not through published statements and speeches but personal behavior. What the leader does and does not do is never a secret; everyone watches and makes judgments on what the boss thinks and believes based on the leader's behavior. Successful leaders embrace the military maxim of "leadership by walking around." It is a powerful messaging tool and provides leaders the perfect opportunity to act as role model, teacher, coach, and chief advocate for the learning process.

How leaders allocate rewards and status. The use of rewards is a prime indicator of what leaders' value. It confirms to the entire organization what is important to the boss and sets the conditions for expected future behavior by members of the group. To put it simply, if leaders want innovation, experimentation, and adaptive behavior, then they recognize and reward it when it occurs.

How leaders recruit, select, promote, and excommunicate. Like rewards, excommunication or punishment sends a clear message to the organization. If leaders want to eliminate dysfunctional behavior that runs counter to the shared beliefs of the organization, they must discourage it through the practice of firing or removing subordinates. At the organizational level, this is a critical messaging tool, which leaders must use judiciously. Conversely, leaders also have the ability to promote those that demonstrate the desired behavior of the learning culture.

Embedding mechanisms are the primary tools leaders use to shape culture and impose their values and beliefs on organizations. Their use is critical to a leader's success in building a culture of learning. The six approaches for employing power and influence techniques focus on creating a supportive command climate that values member involvement and demonstrates leader commitment to learning. The tools allow leaders to build the foundation of a learning organization by shaping group norms and emphasizing valued outcomes that embrace problem solving (*adaptation*) and experimentation (*innovation*). When the norms and values lead to success (*getting results*), they become embedded in the culture of the organization as shared beliefs (*what we do and why we do it*). The result is a culture of learning.

Conclusion

Most experienced military leaders know conceptually that having a learning organization is a good thing. It is espoused in Army doctrine and trumpeted by the former Chairman of the Joint Chiefs of Staff, General Martin Dempsey.³³ It is akin to talking about Army Values, Warrior Ethos, and Military Professionalism. It is a great thing to have! The problem comes when you start scratching the surface. Most people do not really know what a learning organization is let alone how to develop one. When you strip away all the fancy buzzwords, a learning organization is nothing more than a way of thinking. It is a shared belief in an organization that learning is fundamental to success. Leaders and followers are mutually responsible for solving problems and achieving results by being adaptive and innovative in their thinking and behavior.

We need learning organizations because military units can be victims of their own success. More often than not, they fail to adapt, change, and grow with the environment because their organizational cultures thrive on



stability, consistency, and continuity. We call this the learning paradox because the solution to the problem is not intuitive. We want strong and stable cultures in our organizations because it builds unit cohesion, a prerequisite for successful warfighting. However, strong cultures tend to foster rigidity in thinking and action.

Leaders can have it both ways – a culture that is equally strong and adaptive – but they must be the catalyst for change by personally leading the process. They must embrace the goodness of their existing culture while augmenting it with a culture of learning through a supportive command climate and member involvement. The embedding mechanisms are proven tools of power and influence that can make this happen.

After reading this paper, some people will still scoff at the idea of a learning organization. “It is a ‘pie in the sky’ concept better suited for an MBA classroom than a government organization.” Our counterpoint is a final observation from NASA.

Following the Columbia disaster, the shuttle fleet was grounded for two and half years while NASA reviewed the findings of the Columbia Accident Investigation Board (CAIB) and initiated changes to the shuttle program. During this interval, NASA formed an independent team of experts called the Return to Flight Task Group (RTFTG), to assess how well the agency was implementing the CAIB recommendations. Here is one of their findings:

The CAIB noted an air of “arrogance” within NASA that led leaders and managers to be dismissive of the views of others, both within the organization and, especially, from outside the Agency. A less critical way to describe the phenomenon is one of “comfort” – comfort with existing beliefs, comfort with past experience, and comfort with information developed inside NASA. As an excuse for not listening, especially to criticism from outside the agency, NASA often proclaims itself to be unique. We readily admit that few organizations of any type – governmental, academic, or commercial – do the kind of work NASA does. Although the end product may be different, however, many of the processes are not different from those found in many large organizations. Whatever the source of this apparent insularity, it is inappropriate for an agency that routinely operates in a high-risk environment. The recurrence of apparently preventable accidents and the seeming unwillingness to learn should be sufficient to instill some humility to temper what often looks like arrogance. During the past two years, we have not witnessed very much of such humility.³⁴

Read the above passage again but this time replace “NASA” with the name of your organization. Take a moment to reflect. Do any of these comments hit home? Are you comfortable with saying your organization is achieving its full potential? Is it learning, adapting, and growing? Improving while operating is a continuous process that only moves in one direction – forward. If your organization is standing pat, wedded to best practices (a euphemism for past practices), it might be time to reassess and ask the question, “Does my unit have a culture of learning?”

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NOTES:

1. *Columbia Accident Investigation Board, Volume I* (Washington, DC: National Aeronautics and Space Administration and Government Printing Office, August 2003), 49-50.
2. Edgar H. Schein, *Organizational Culture and Leadership*, 4th ed. (San Francisco: Jossey-Bass, 2010), 218.
3. Carey W. Walker and Robert J. Rielly, "Crossing the Rubicon: An Introduction to Organizational-Level Leadership," Command and General Staff College (CGSC) (August 2013), 6.
4. Carey W. Walker and Matthew J. Bonnot, "The Vision Process: Seven Steps to a Better Organization," CGSC (August 2012), 2.
5. Army Doctrine Reference Publication (ADRP) 6-22, *Army leadership* (Washington, DC: Government Printing Office [GPO], August 2012), para. 8-1.
6. *American Heritage Dictionary*, 5th ed. (Boston: Houghton Mifflin Harcourt).
7. "What Makes an Authentic Learning Organization? An Interview with David Garvin," Harvard Management Update (June 1997), 4.
8. ADRP 6-22, 9-33.
9. *Ibid.*, 5-9.
10. Edgar H. Schein, *Organizational Culture and Leadership*, 3rd ed. (San Francisco: Jossey-Bass, 2004), 84.
11. Schein, *Organizational Culture and Leadership*, 4th ed., 218.
12. Carey W. Walker and Matthew J. Bonnot, "Understanding Organizational Climate and Culture," *Army Press Online Journal* (July 2016): accessed July 11, 2016, <http://armypress.dodlive.mil/understanding-organizational-climate-and-culture/>.
13. Schein, 18.
14. *Ibid.*, 243.
15. David A. Garvin, *Learning in Action: A Guide to Putting the Learning Organization to Work* (Boston: Harvard Business School Press, 2000), 29.
16. Lt. Gen. Sir John Kizely, "Learning About Counterinsurgency," *Military Review* (March-April 2007), 5.
17. *Columbia Accident Investigation Board, Volume I*, 101.
18. *Ibid.*, 9.
19. *Ibid.*, 101.
20. Normalization of deviance is a term coined by Diane Vaughan in her book, *The Challenger Launch Decision* (Chicago: University of Chicago Press, 1996), to explain the decisions by NASA engineers to accept greater and greater risk with the leaking joints on the space shuttle's solid rocket booster (SRB), which lead to the Challenger explosion. It is defined as: "The practice over time of accepting behavior or events that contradict existing norms or standards but have no apparent negative consequences, which gradually expands the boundaries of acceptable risk." Leaders accept this erosion of standards for a number of reasons. Modifying standards usually increases work effectiveness. It typically increases job efficiency, spurs initiative, and has no immediate negative consequences. Individuals and leaders justify the actions based on experience (the rules were made for new inexperienced persons) and mission necessity. The pitfall is a failure to consider the second and third order consequences of the decision. Examples of normalization of deviance can range from seemingly insignificant individual decisions (not wearing a seat belt or driving above the speed limit) to larger organizational calls (reducing the safety budget at NASA after declaring the shuttle program



“operational”). The leader challenge with normalization of deviance is twofold. First is the awareness that it is happening (and it happens on a recurring basis in most organizations). Second is the need to formally codify the decisions to modify standards. Without reflection and a deliberate assessment process, normalization of deviance becomes a dysfunctional form of adaptation.

21. Schein, 365.

22. Ibid., 24.

23. David V. Day, Mark A. Griffin, and Kim R. Louw, “The Climate and Culture of Leadership in Organizations.” In *The Oxford Handbook of Organizational Climate and Culture*, 1st ed., edited by Benjamin Schneider and Karen M. Barbera (Oxford: Oxford University Press, 2014), 104.

24. ADRP 6-22, 7-10.

25. Peter M. Senge, *The Fifth Discipline: The Art & Practice of the Learning Organization* (New York: Currency Doubleday, 2006), 129.

26. Army Doctrine Publication (ADP) 6-0, *Mission Command* (Washington, DC: GPO, May 2012), 2.

27. Department of the Army, Field Manual (FM) 6-01.1, *Knowledge Management Operations* (Washington, DC: Government Printing Office, July 2012), para. 1-47.

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30. Ibid, 112-113.

31. Schein, 303.

32. Schein, 236.

33. See General Martin E. Dempsey’s testimony before the House Armed Services Committee, October 13, 2011, and his remarks to the National Press Club, October 12, 2012.

34. *Final Report of the Return to Flight Task Group* (Washington, DC: National Aeronautics and Space Administration and Government Printing Office, July 2005), 195.