



Georgia Army National Guard Sgt. 1st Class Pete Gibson, a combat engineer with the Statesboro-based 177th Brigade Engineer Battalion, 48th Infantry Brigade Combat Team, conducts an after action review 16 June 2022 during the Exportable Combat Training Capability (XCTC) Exercise at Fort Stewart, Georgia. XCTC is the U.S. Army National Guard's program of record that enables brigade combat teams to achieve the trained platoon readiness necessary to deploy, fight, and win battles throughout the world. (Photo by Spc. Alex Higgins, U.S. Army)

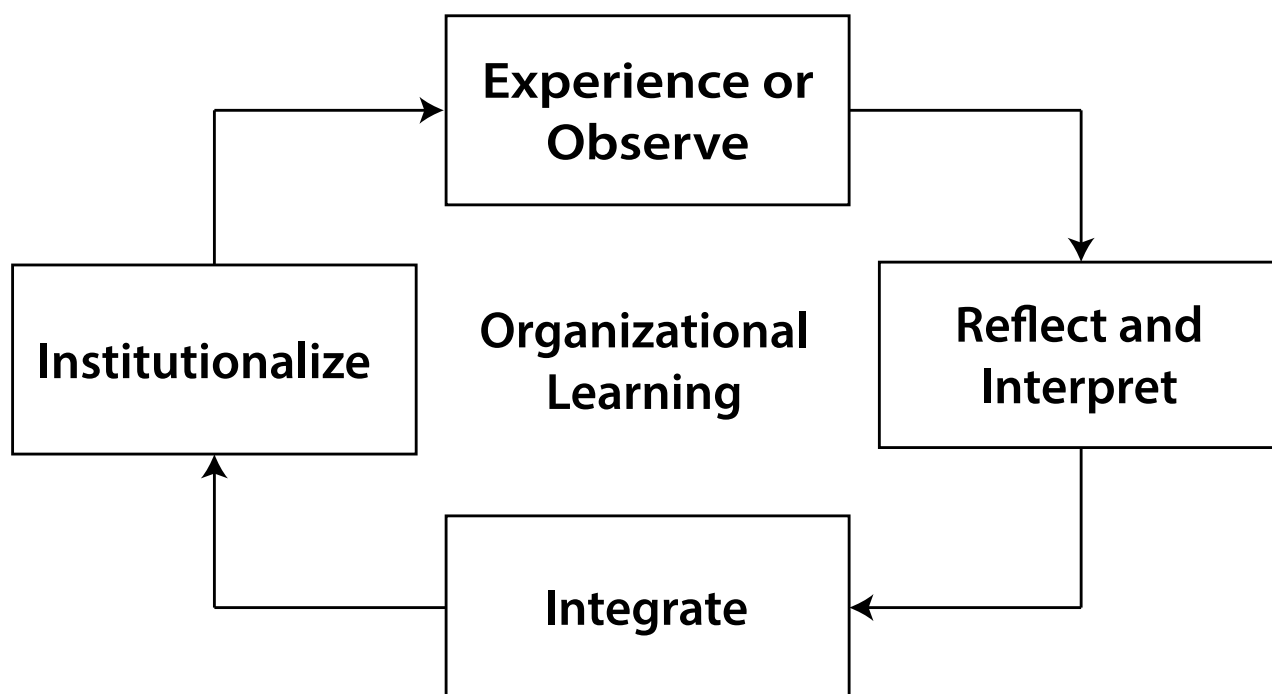
# Future Proof

## How to Build a Learning Organization

Trent J. Lythgoe, PhD

**T**he U.S. Army is wrong about the next war. It will not fight where it expects to fight.<sup>1</sup> Its plans do not describe the battles and campaigns

it will execute. Its doctrine is inadequate to achieve its future goals.<sup>2</sup> Its soldiers will not be fully trained and ready for the missions awaiting them.



(Adapted by author; original from Colin M. Beard and John Peter Wilson, *Experiential Learning* [2006])

**Figure 1. The Organizational Learning Process**

Fortunately, this problem is neither new nor unique to the U.S. Army.<sup>3</sup> Predicting the future is always hard—often impossible.<sup>4</sup> The Army (and its future adversaries) will plan and prepare for a murky future, knowing they will be wrong but trying not to be too far wrong. Nevertheless, both will go to war with unforeseen gaps in weapons, doctrine, and tactics—gaps that will become clear only after the fighting starts. To close its gaps, the Army will have to learn and adapt.<sup>5</sup> To win the next war, the Army needs *learning organizations*.

Learning organizations are “skilled at creating, acquiring, and transferring knowledge, and at modifying [their] behavior to reflect new knowledge and insights.”<sup>6</sup> In other words, learning organizations find new ideas and use them to improve.<sup>7</sup> The competitive advantages of effective organizational learning are well-known in both business and war.<sup>8</sup> Both are changing, competitive domains where learning organizations survive and thrive, while those that fail to learn stagnate and die. But in war, the stakes are much higher. Failed businesses go bankrupt; failed armies waste lives and lose wars.<sup>9</sup>

## How Organizations Learn

To build a learning organization, leaders must first understand how organizations learn. Although they appear similar, the terms *organizational learning* and *learning organization* have distinct meanings. Organizational learning, which this section discusses, is the naturally occurring *activity* of learning. In contrast, a learning organization, discussed in later sections, is a *type* of organization that excels at learning and improving. In short, all organizations learn, but few are learning organizations.<sup>10</sup>

Organizational learning is the process of gaining collective knowledge.<sup>11</sup> It follows a four-step process (figure 1).<sup>12</sup> Learning begins when people experience or observe new

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events. Next, they reflect on the events, make meaning, and gain insights. After reflecting, individual learning becomes group learning during the integration stage as people discuss and debate their insights, create shared understanding, and agree to change practice (how they do their work). Finally, group learning becomes organizational learning (institutionalization) as new ways of working move from isolated groups to the larger organization, and leaders embed new insights into structures, policies, and procedures. The process begins anew as people observe and experience new events, including the results of previous learning.

Importantly, the learning cycle can be impaired or disrupted in myriad ways. In fact, the only certainty is that people will experience new events. Moving beyond experience requires effort, beginning with observing others' experiences. Army units, for example, can learn about large-scale combat through their training experiences but also by observing others, including analyzing other units' training, studying history, and monitoring ongoing conflicts. Organizations that limit their learning to their own experiences miss out on learning from others, and worse, may not notice changes in the competitive environment.

The learning cycle might stall at the other steps as well. Poor reflection, or lack of it, will impede gaining useful insights. If people reflect but do not share or discuss their insights, individual learning will not become group learning. And the organization may not institutionalize group insights, due to fear of change, rigid bureaucracies, inflexible culture, resistant leaders, or complacency.

Importantly, organizational learning is value-neutral, meaning that although organizations naturally learn, what they learn will not necessarily improve them.<sup>13</sup> For example, an Army unit I will call 1st Battalion was training at the National Training Center (NTC).<sup>14</sup> The unit's key leaders gathered with their NTC observer coach/trainers (OC/T) for an after action review (AAR) of their first mission. During the AAR, the operations officer, Maj. Weaver, discussed several mistakes the staff had made during the mission. Afterward, Lt. Col. Lewis, who had taken command of 1st Battalion a few months earlier, pulled Maj. Weaver into a nearby tent. "You embarrassed me and the unit in front of the OC/Ts! Don't ever do that again!" Several soldiers overheard the scolding, and the story spread.

After 1st Battalion's next mission, Maj. Weaver and the battalion executive officer (XO) gathered the staff for an "AAR prebrief." They reviewed the staff's observations and censored those that might anger Lt. Col. Lewis. The AAR that followed pleased the commander but sidestepped critical mistakes. Having avoided Lt. Col. Lewis's wrath, the staff conducted AAR prebriefs for the rest of the NTC rotation, and every training event afterward.

This example demonstrates the four-step learning process. After experiencing Lt. Col. Lewis's anger, the soldiers gained a new insight: the boss hates bad news. The S-3 and XO integrated this insight into the unit's work using the AAR prebrief, then institutionalized it by making AAR prebriefs a standard procedure.

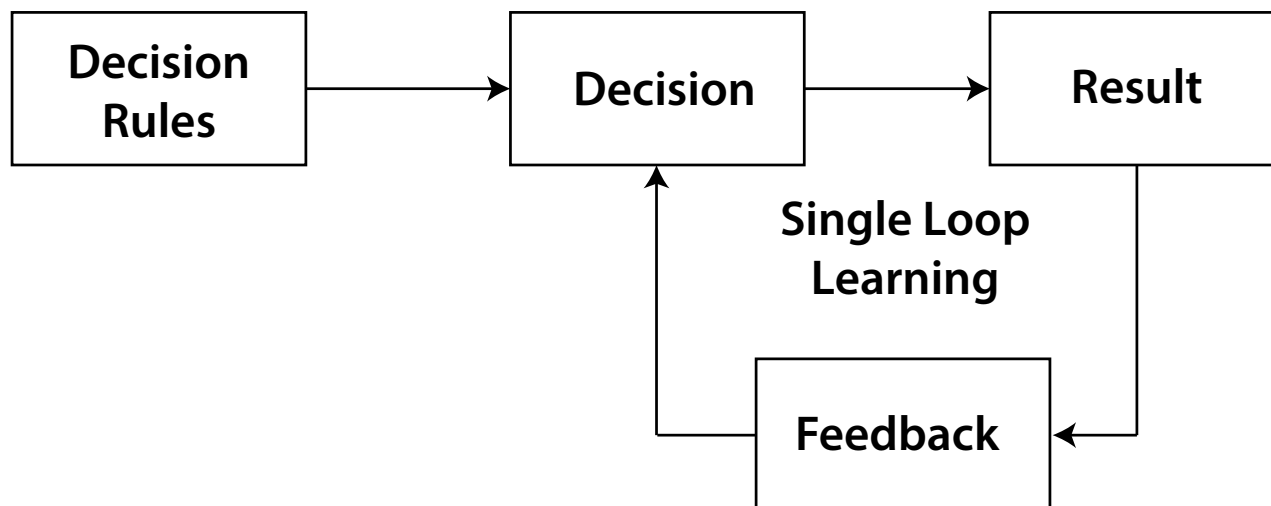
The organization completed the four-step learning process; it learned to hide errors. Its new way of doing things will protect Lt. Col. Lewis's ego from bruising and the unit's soldiers from scoldings. Unfortunately, it will also erode organizational effectiveness. By ignoring mistakes, the unit will struggle to find and fix errors—the most basic type of learning and improvement.

## Three Types of Learning

The learning process can produce three types of learning: single-loop, double-loop, and unlearning. Single-loop learning involves using data to find and fix errors—deviations from known decision rules or standards (figure 2).<sup>15</sup> A simple thermostat, for example, is a single-loop learning system. It compares the current temperature (data) to the set temperature (standard). If they match, it does nothing. If they don't, it corrects the error by triggering heating or cooling.

Although single-loop learning is simple, organizations may still struggle to do it well. Frequently, the problem is leaders who fear failure and pressure their people to hide errors.<sup>16</sup> In the earlier example, Lt. Col. Lewis pressured the organization to hide errors when he scolded Maj. Weaver for discussing them. But hidden errors are still errors. Hiding them creates a short-term illusion of success. But over time, uncorrected errors lead to more errors, then crisis, and eventually, failure.<sup>17</sup>

Another problem that impedes single-loop learning is *normalization of deviance*—when organizations learn to view errors as a normal part of its work. The term was coined by Diane Vaughan in her study of the space shuttle *Challenger* disaster.<sup>18</sup> Normalization



(Figure by author; based on Chris Argyris, "Double Loop Learning in Organizations" [1977]; and Pornkasem Kantamara and Vichita Ractham, "Single-Loop vs. Double-Loop Learning" [2014])

## Figure 2. Single-Loop Learning

of deviance occurs when people become so desensitized to errors that they stop seeing them as wrong. At NASA, leaders chose to repeatedly launch the space shuttle despite evidence of a design flaw that allowed hot gas to escape through its booster rocket joints. Although NASA knew about the problem, it had occurred so often that people came to accept the problem as normal. Sadly, the flaw eventually destroyed *Challenger* and killed the crew.

A second type of learning is double-loop learning. While single-loop learning detects deviations from standards, double-loop learning questions the standards themselves.<sup>19</sup> Opening the second loop means examining the organization's assumptions, norms, policies, and goals (figure 3). Going back to the thermostat example, single-loop learning asks if the temperature matches the setting, while double-loop learning questions why we chose that setting to begin with. Is the setting the right one? Is the goal to stay comfortable or to reduce energy costs? Different goals require different decision rules.

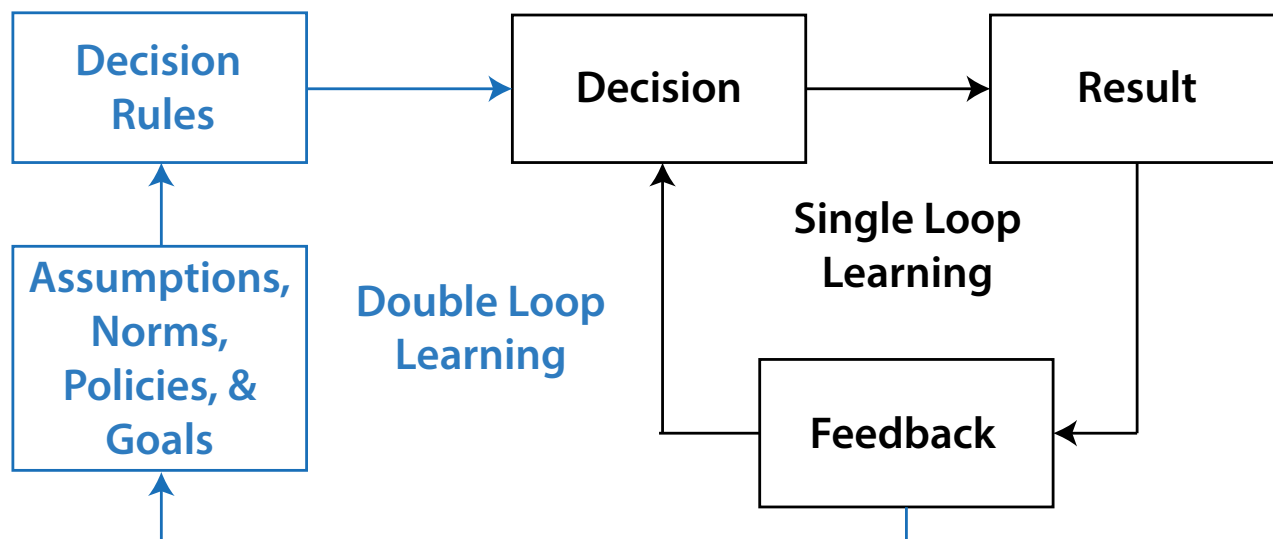
The third type of learning, unlearning, is intentionally abandoning outdated knowledge, behaviors, and ways of thinking.<sup>20</sup> Unlearning is different from forgetting, which is unintentional.<sup>21</sup> Organizations often forget through neglect. For example, without practice, a unit will gradually forget how to do a task as skills atrophy and people come and go.

Unlearning, in contrast, means deliberately abandoning current knowledge so that new ways of thinking and doing things can take hold.<sup>22</sup> Without unlearning, what the organization currently "knows" will slow or short-circuit the learning process. People will ignore new approaches if they believe the old ways are better. As a result, the organization will not integrate or institutionalize learning.

German and French military thinking after the First World War shows how single-loop, double-loop, and unlearning can affect battlefield success.<sup>23</sup> Germany studied the lessons of positional warfare, but it also opened a second learning loop by questioning if fighting positional warfare was still the right goal. Double-loop learning led to a new goal of avoiding a positional stalemate by using combined arms maneuver. To achieve this goal, the Germans had to unlearn ingrained beliefs and practices, such as maintaining a continuous linear front, so that combined arms maneuver thinking could take hold.

The French, in contrast, struggled with double-loop learning and unlearning.<sup>24</sup> Like the Germans, the French studied the lessons of World War I. However, they did not question if improving their positional warfare capabilities was the right goal, and they struggled to unlearn ingrained beliefs and behaviors.

The consequences of each side's learning became apparent in 1940 when the Germans took only



(Figure by author; based on Chris Argyris, "Double Loop Learning in Organizations" [1977]; and Pornkasem Kantamara and Vichita Ractham, "Single-Loop vs. Double-Loop Learning" [2014])

**Figure 3. Double-Loop Learning**

six weeks to win the Battle of France.<sup>25</sup> Of course, Germany's swift success resulted from many factors, not just interwar learning patterns.<sup>26</sup> Still, the German and French experiences show that militaries can gain or lose meaningful advantages based on how well their organizational learning keeps up with changes in the character of warfare.

## Learning Organizations

All organizations learn. But as the examples above show, learning doesn't always improve the organization. To make learning useful, leaders must intervene in the learning process. They must build *learning organizations*—organizations in which leaders take charge of learning to drive improvement.<sup>27</sup>

But how do leaders build learning organizations? Early research offered muddled answers. Although scholars have studied organizational learning for decades, their research mixed descriptive theories (how organizations learn) with normative theories (how they should learn and improve). Leaders wanting to put the research into practice had to sort through the differences.<sup>28</sup>

The dividing line between descriptive and normative theory became clearer in 1990 when Peter Senge coined the term "learning organization" in his bestselling book, *The Fifth Discipline*. Senge framed a learning organization

is a *type of organization* where leaders drive useful learning.<sup>29</sup> After Senge, "learning organization" became an umbrella term for normative theory, leaving "organizational learning" to cover descriptive theory (see table).

*The Fifth Discipline* vaulted learning organization theory into mainstream leadership practice.<sup>30</sup> Senge's book argues that becoming a learning organization requires practicing five disciplines: personal mastery, mental models, team learning, shared vision, and systems thinking.<sup>31</sup> Personal mastery involves growing spiritually and seeing things holistically. Managing mental models means challenging ingrained assumptions. Shared vision fosters a mutual sense of purpose and direction. Team learning encourages dialogue and knowledge sharing. Finally, the eponymous fifth discipline, systems thinking, emphasizes feedback structures and understanding entire systems, not just their parts.

*The Fifth Discipline* excited practitioners. Still, skeptical academics argued that Senge's theory lacked concrete methods to drive change.<sup>32</sup> They criticized *The Fifth Discipline* and similar ideas as reverential, idealistic, and even utopian.<sup>33</sup>

Three years after *The Fifth Discipline*, one of Senge's critics, Daniel Garvin, offered a pragmatic framework as an alternative to "idyllic" theories.<sup>34</sup> Garvin's approach emphasized *new ideas* and *changed behavior*. Learning begins with new ideas from within or outside

**Table. Organizational Learning versus Learning Organization**

	Organizational learning	Learning organization
<b>Theory</b>	Descriptive (what happens)	Normative (what should happen)
<b>Definition</b>	The process of gaining organizational knowledge	A type of organization in which leaders drive learning to improve the organization
<b>Cause</b>	Happens naturally	Leader-driven
<b>Value</b>	Neutral	Preferred
<b>Results</b>	May improve or degrade performance	Improves performance

(Table by author)

the organization. Critically, however, ideas must lead to changing “the way the work gets done.”<sup>35</sup> Without concrete change, there is no learning organization. Garvin also argued that learning organizations do five things well: systematic problem-solving, experimenting, learning from experience, learning from others, and transferring knowledge.<sup>36</sup>

Through the 1990s and into the 2000s, authors further refined learning organization theory into practical guides.<sup>37</sup> One example is Anthony DiBella and Edwin Nevis, who unite descriptive elements (“learning orientations”) with normative elements (“facilitating factors”) into a unified but complex model.<sup>38</sup> Another, more influential framework emerged in 2008 when Garvin, collaborating with Amy Edmonson and Francesca Gino, proposed the three building blocks model.<sup>39</sup>

### Three Building Blocks

Garvin, Edmondson, and Gino assert that learning organizations require three building blocks: leadership, climate, and processes (see figure 4).<sup>40</sup> This leader-centric model complements U.S. Army leadership doctrine. The model emphasizes the leader’s role in promoting learning through their behavior and organizational climate. These ideas parallel the behaviors the Army expects of its leaders: leading by example, communicating, and setting a positive climate.<sup>41</sup> Moreover, using concrete learning processes—the third building block—is something the Army already does routinely. Familiar examples include AARs and the Center for Army Lessons Learned.

**Leadership.** The first building block is *leadership that promotes learning*.<sup>42</sup> Leaders promote learning by questioning people, listening to their responses, and

encouraging diverse perspectives. These behaviors drive learning by fostering debate and discussion which lead to collective sensemaking and knowledge sharing.

**Climate.** As leaders promote learning through their behavior, they establish the second building block: a *positive learning climate*.<sup>43</sup> This block includes three elements: psychological safety, openness to alternative views and new ideas, and time for reflection.

*Psychological safety* describes a climate in which people are willing to speak up, take risks, disagree, and voice concerns.<sup>44</sup> Psychological safety encourages knowledge transfer across the organization and makes people more likely to offer creative and innovative ideas.<sup>45</sup> It also improves individual, team, and organizational performance, makes work more enjoyable, and empowers leadership.<sup>46</sup> One study of teams in a Silicon Valley firm found that psychological safety is the strongest predictor of team success.<sup>47</sup>

The second element of a learning climate is *increasing openness to alternative views and new ideas*. It involves helping people recognize the value of diverse and opposing worldviews. It also means helping people open their minds to new ideas by encouraging them to create new approaches, experiment, and take risks.

The final piece of a learning climate is *creating time for reflection*.<sup>48</sup> Organizations cannot succeed unless their people reflect on their experiences.<sup>49</sup> Reflection helps us learn from mistakes, plan the future, regulate our emotions, solve problems, innovate, and create. Yet, many leaders prevent their people from reflecting. Instead, they measure success by hours worked and tasks accomplished, increasing stress and hindering thinking.<sup>50</sup> To encourage learning, leaders must create time to reflect for themselves and their people.



(Figure by author; based on David A. Garvin, Amy C. Edmondson, and Francesca Gino, "Is Yours a Learning Organization?" [2008])

**Figure 4. Three Building Blocks of a Learning Organization**

**Processes.** The third building block of learning organizations is *formal learning processes*. Organizations need systems and practices that generate, collect, interpret, and share knowledge.<sup>51</sup> The Army's AAR is a familiar example. After each training event or mission, unit members discuss what worked well or poorly. Good units institutionalize what they learn in AARs by updating their operating procedures and sharing what they learned with other units.

Although the Army maintains solid learning processes, leaders must remember that formal learning processes will falter if the other building blocks are missing. Think back to Lt. Col. Lewis and 1st Battalion. After Lt. Col. Lewis scolded Maj. Weaver, the purpose of the AARs changed from fixing errors to hiding them to keep Lt. Col. Lewis happy. Although the formal process remained, it was rendered ineffective because of poor leadership and climate.

## Learning Barriers

Despite the benefits of learning organizations, they are hard to develop. Leaders often must overcome common learning barriers, including fear of failure,

doing without thinking, overvaluing conformity, and overvaluing expertise.<sup>52</sup>

The first learning barrier is creating *fear of failure* by focusing too much on success.<sup>53</sup> Naturally, leaders want to succeed. But even the best organizations sometimes fail. Leaders who demand success all the time begin to fear failure. A leader's fear can create a climate of fear where people hide mistakes instead of learning from them. Fearful people also avoid taking risks and experimenting. As a result, errors go uncorrected, innovation and creativity die, and the organization stagnates.

Leaders can overcome this barrier by destigmatizing failure and embracing a growth mindset.<sup>54</sup> Good leaders treat failure as a learning opportunity. They create a "blameless culture" where people ask why mistakes happen rather than who to blame.<sup>55</sup> Good leaders also have a growth mindset and cultivate it in their organization. Having a growth mindset means believing that people can improve and seeing failure as an opportunity to learn.<sup>56</sup> In contrast, people with a fixed mindset doubt people can improve and see failure as the result of inalterable flaws.



The second barrier to becoming a learning organization is *doing without thinking*.<sup>57</sup> Doing builds experience but *reflecting* stimulates learning. Frederick the Great said it well: “Of what utility is experience, if not guided by reflection? ... A mule, though he should have made ten campaigns under Prince Eugene, would not have improved in his tactics.”<sup>58</sup> A combat-experienced mule will never be a soldier because a mule cannot reflect on its experiences. When people reflect, learning is more effective, experience is more productive, and confidence increases.<sup>59</sup>

To overcome the doing without thinking barrier, leaders must institutionalize reflection by setting aside time for themselves and their people to think and reflect informally.<sup>60</sup> They should also reflect formally by mandating systematic learning events, such as AARs. Most importantly, leaders must seek the truth. They must be honest and encourage their people to be honest, listen to diverse perspectives, and use reliable data.

The third barrier is *overvaluing conformity*—prioritizing fitting in over performing well.<sup>61</sup> Humans naturally want to conform so that social groups will accept us. Military culture strengthens this already strong urge by sustaining a highly conformist culture. Although conforming to social group norms has benefits—especially in the military—it can degrade learning if taken too far.

A prominent example of how pressure to conform can impede learning is groupthink—the tendency for groups to preserve peace and gain consensus by stifling information flow.<sup>62</sup> In teams where groupthink takes hold, agreeing becomes more important than making good decisions. Leaders and groups fall into groupthink when they value unity over critical thinking, pressure dissenters to conform, snub or ignore critical perspectives, and justify or rationalize poor thinking.<sup>63</sup>

Leaders can overcome the conformity barrier by exercising impartial leadership, encouraging divergent thinking, and appointing devil’s advocates. Leaders exercise impartial leadership by promoting dialogue rather than taking a position.<sup>64</sup> When leaders take a position, others may hesitate to voice dissent. Encouraging divergent thinking means embracing diverse viewpoints, descriptions, and solutions (diverging) before analyzing proposals and working toward solutions and decisions (converging).<sup>65</sup> Finally, appointing a devil’s advocate means assigning people to openly question the group’s assumptions, processes, and proposed solutions.<sup>66</sup>

The final barrier to developing learning organizations is *overvaluing expertise*.<sup>67</sup> Experts are useful when problems have complicated but known solutions.<sup>68</sup> However, in complex situations, problems and solutions are emergent and unique. They require the organization to learn and adapt rather than fall back on what its experts already know.

Leaders can overcome this barrier by learning to distinguish between complicated and complex situations.<sup>69</sup> They can rely on experts for complicated problems but must shift to organizational learning and adaptation in complex contexts. Also, leaders must mobilize the entire organization to meet complex challenges that require learning.<sup>70</sup> Frontline people closest to the problem are often the leader’s best resource for understanding the issue and developing creative solutions. Rather than dictating solutions from above, leaders enable learning so that solutions can emerge from below.

## Learning in Ukraine

The Russia-Ukraine war shows how organizational learning (or lack of it) can influence modern warfare. Both sides have had to learn and adapt.<sup>71</sup> Russia initially aimed to rapidly capture large swaths of Ukrainian territory. But initial failures taught them hard lessons. They responded by narrowing their objectives, re-vamping their uncoordinated command structure, and jettisoning failed maneuver warfare tactics for a more attritional approach.

The Ukrainians also learned early lessons.<sup>72</sup> They exploited Russia’s poor combined arms fighting by using antiarmor infantry teams to slow or destroy Russian armored advances. The Ukrainians also learned to exploit the information environment, switch from Soviet era to NATO weapons, and integrate commercial technology like satellite internet and drones.

As the war has worn on, however, both sides have struggled to become learning organizations. Ukraine has established two of the three learning organization building blocks—leadership and climate—but it lacks effective formal processes.<sup>73</sup> Ukrainian tactical units have developed innovative tactics and learned to use new technologies. However, Ukraine often fails to share local learning across the force, and when appropriate, institutionalize it in doctrine and training.

On the other side, Russia has fumbled all three building blocks.<sup>74</sup> Despite efforts to reform, Russia’s



centralized command and control discourages bottom-up learning.<sup>75</sup> Worse, Russia's senior leaders often value political loyalty over competence. However, if the Russians somehow manage to learn something, they can use their centralized command-and-control system to institutionalize it across the force. For example, after the Wagner paramilitary group successfully used convicts as cannon fodder during the Bakhmut campaign, the Russians institutionalized the use of "disposable" units.<sup>76</sup> Even so, the speed and effectiveness of Russian learning has been uneven at best.<sup>77</sup>

## Conclusion

Success in war requires learning and adaptation. Militaries cannot predict with certainty how the next war will unfold. But they can prepare to deal with the unexpected by developing learning organizations with committed leaders who establish a learning climate and support concrete learning processes. The U.S. Army may soon find itself in an unexpected war struggling to learn and adapt to unexpected challenges. The Army's vision of this war may be wrong today. But by developing learning organizations, it can get it right when it counts. ■

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