FEATURE

THE SYSTEMS THINKER®
BUILDING SHARED UNDERSTANDING

VOL. 20 NO. 6 AUGUST 2009

PERFORMANCE VERSUS LEARNING IN TEAMS: A SITUATION APPROACH

BY D. CHRISTOPHER KAYES

Mountain climbers recognize the difference between following an existing route and blazing a new one. Similarly, the ability to distinguish and respond to a task that requires performance versus one that requires learning may be the difference between an effective team and one that fails. In this article, I suggest that how a team interprets its task and its subsequent response forms the basis of team effectiveness. I also present implications for goal setting, behaviors, and shared beliefs that lead to effectiveness in teams.

The Problem with Focusing on Performance

Managers tend to define effective teamwork in terms of performance outcomes, such as improving efficiency or achieving a measurable goal on a predetermined task. As the first American to summit the world's tallest 14 mountains and one of five people to do so without supplementary oxygen, Ed Viesturs has experienced some of the potential consequences of focusing solely on performance:

When you're up there, you've spent years of training, months of preparation, and weeks of climbing and you're within view of the summit, and you know, you have—in the back of your mind you're telling yourself, "We should turn around 'cause we're late, we're gonna run out of oxygen," but you see the summit, and it draws you there. And a lot of people—it's so magnetic that they tend to break their rules and they go to the summit—and, on a good day, you can get away with it. And on a bad day, you'll die.

Viesturs' experience helps expose some of the limitations of conventional wisdom on team effectiveness. These limitations include the following:

- When teams focus on performance, they tend to lean on prior learned behavior rather than learn new behavior ("years of training, months of preparation, and weeks of climbing").
- Effective teamwork requires attention to managing emotions (the summit "draws you there"; it's "magnetic").
- Effectiveness relies on balancing tired strategies of action with contingencies and adjustments ("On a good day, you can get away with it. And on a bad day, you'll die").

The experience of Viesturs and other mountain climbers provides a metaphor for team effectiveness. More than that, it echoes one of the most important findings I have come to after observing, consulting for, and training hundreds of groups: The best teams manage their environment by attending to both *performance* and *learning* demands. Team effectiveness requires that teams successfully interpret the nature of the task they face and design an appropriate action strategy.

Over the last few years, I have learned that teams of all sorts need to develop behaviors that promote both learning and performance. Mountain climbing conjures images of a lone individual conquering the untamed mountain. However, mountaineering is most of all a social process that requires learning, problem solving, cooperating on distinct parts of a task, and coordinating different kinds of expertise and experience.

A growing body of research and theory on team learning suggests that teams should act with caution when adopting outcomes that are purely performance driven. Performance behaviors drive success when teams face problems—such as assembly production, sales goals, or operational improvement—that have clear parameters. When teams face novel situations, however, the problem-solving activity that normally leads to effective outcomes often leads to failure. The problem with performance emerges because the behaviors that enhance it in some situations may prove disastrous when teams need to learn new skills, develop capacity, or respond to crisis.

Task Epistemology

The distinction between learning and performance is a matter of how a team interprets the knowledge requirements of its task. I call this interpretation process "task epistemology" because the team develops a theory about the kind of knowledge that is required to perform its task effectively. Said simply, a team's task epistemology and its subsequent response form the basis of its effectiveness.

The distinction between learning and performance began to emerge as a colleague and I observed teams in a manufacturing environment. The teams were working on a continuous, highly interdependent task; essentially, an assembly line. Our objective in this research focused on determining which

TEAM TIP

Use the guidelines in this article to determine whether a particular task involves learning or performance, and design your approach to it accordingly.

team-level behaviors improved performance. We believed in a general set of competencies that existed across teams of all types. Our research revealed a more complex picture than we imagined. We developed a picture of team behaviors that were dependent on the particular task performed by the team. We quickly found evidence for what others had been saying about team effectiveness: task mattered.

Our research led us to consider the special interaction between knowledge and task. Successful task completion involves gathering and processing knowledge. Further study confirmed this initial finding but led us to believe that conceptualizations of team task based simply on task interdependencies failed to tell the whole story. Tasks also carry knowledge demands. In other words, tasks have their own epistemology, in the sense that certain tasks demand different types of thinking for successful completion than others.

Task Knowledge Demands

This task epistemology can be illustrated by the process of climbing a mountain, a kind of short-term project. The first ascent of a mountain requires climbers to use a host of behaviors, including deciphering a new situation, identifying routes, trying out the routes and knowing when to abandon them, and establishing new techniques and then applying them in novel situations. Once climbers successfully summit a peak, they must enlist another set of behaviors in their subsequent pursuit. The new strategy might include following a predefined route, clocking estimated ascent and turnaround times, identifying weather patterns, and following stop rules that specify when to abandon the pursuit. The first ascent requires *learning-directed behaviors*, while later ascents, assuming other factors remain relatively stable and that processes have been determined, likely require *performance-directed behaviors.*

This distinction between learning- and performance-related task conditions forms the basis for a task epistemology. A task epistemology rests on at least three considerations:

- ***Problem.*** An ill-structured problem can be contrasted to a well-structured one by at least two characteristics. First, an ill-structured problem has no clear outcome; experts will disagree as to what answer is correct. Second, the solution necessary to achieve the outcome is not clear, and experts will disagree as to the correct method. The complexity of the problem is another consideration. Complexity is the degree to which the task requires integration and differentiation of knowledge, as well as the technical knowledge required to complete the task. Integration requires the ability to see connections between seemingly diverse and disparate variables. In contrast, differentiation requires noticing slight differences and recognizing uniqueness in seemingly related or similar concepts.
- ***Context.*** Environmental factors impact how the team accomplishes its task and measures its outcome. One example of a contextual factor impacting task epistemology can be found in the nature of the organization's goals. For example, an organization that has multiple goals will put different demands on a team than one that has a single well-defined goal.
- ***Work Processes.*** One important consideration is whether or not the team has an established process or strategy to accomplish its task and whether or not the work process can be maintained until task completion. A second consideration is whether the team has established stop rules. Stop rules consist of a specified timetable or set of work processes that trigger different actions. For example, a mountain-climbing team will abandon its pursuit of the summit if certain weather patterns are detected, and a manufacturing process will be shut down if certain quality infractions are detected.

Taken together, problem, context, and process factors provide the basis for understanding task epistemology. The epistemology of task becomes the basis for understanding the different conditions under which teams need to focus on learning versus performance. Simply stated, when teams face a complex and shifting problem, then learning processes are most likely to enhance teamwork.

Performance Conditions

When performance conditions prevail, a team's goal becomes clear, and teamwork entails developing a relatively stable set of goal-directed strategies. Once a team has developed effective goal-directed strategies, it can then develop means to improve efficiency and effectiveness by slight modifications in reaction to new information or changes. A performance strategy works when several conditions exist based on the problem, context, and process factors related to task.

Problem Factors

The Problem Is Preexisting. A preexisting problem exists when a team faces a problem that has been seen before and for which a clear and effective solution has been developed. In some cases, the team itself has faced the problem before; in other cases, another team has faced the problem and developed a clearly defined strategy to accomplish the task. Examples of teams with preexisting procedures include an airline cockpit crew on a routine flight and an assembly-line production team working on a continuous process.

The Task Is Well Structured. A task is well structured when it can be completed by following a simple formula, such as a team of chefs working at a restaurant. A well-structured task involves a minimal number of steps to complete, and each step requires no special skill beyond the current expertise of the team members. Typically, a task will be considered well structured if the process necessary to achieve the goal can be agreed upon by experts. For example, some types of medical surgery qualify as well-structured tasks because they seldom produce any difficulties and the steps necessary to successfully complete the procedure require no new skills.

The Task Is Low Complexity. A task can be considered low complexity if it requires little integration or differentiation of knowledge, such as when a sports team plays a game.

Context Factors

The Environment Is Stable. An environment is stable when it produces few

anomalies and only routine change. Examples of a stable environment include a team of students working on a class project and a construction crew building a highway.

The Goals Are Narrowly Defined. A narrowly defined goal usually has a single measure of success, and success is easily measurable. The more easily defined a goal, the more likely the problem will be narrowly defined. Examples include a mountain-climbing team summiting a mountain, a sales team seeking to increase revenue, and a mutual fund investment committee seeking to increase the value of a fund.

Process Factors

Clear Stop Rules Have Been Established. Clear stop rules exist when the team clearly understands when to abandon pursuit of its outcome and seek additional help. A good example of clear stop rules exists in the case of an airline cockpit crew that cannot take off for flight until it receives a go-ahead signal from air traffic control or a chemical safety team that evacuates a plant during specific conditions.

Work Processes Are Established. Under conditions requiring performance, teams typically rely on past strategies, processes, and problem-solving abilities to perform the task. The team does not require new skills or abilities for effectiveness.

In summary, performance conditions describe a situation in which existing processes prevail, with a relatively low need for new knowledge or innovative uses of old knowledge. We might call these conditions routine in the sense that a team's extant beliefs and behaviors provide the raw material for effectiveness. Task knowledge demands remain relatively low because the situation requires little knowledge creation. When all or most of these conditions exist, a team focus on performance-related behaviors becomes likely to produce effectiveness. In contrast, learning leads to effectiveness when different conditions prevail.

Learning Conditions

Team learning leads to effectiveness when situations are novel, adaptive, and complex. The conditions for learning have several characteristics related to the problem, context, and process of the task factors.

Problem Factors

The Problem Is Ill Structured. The definition of the problem itself as well as the solution to solve the problem is difficult to identify. This means that even if a resolution to the problem is reached, there will be little agreement as to the "correct" solution. Consider, for example, a feature film that costs millions to produce and achieves critical acclaim yet fails miserably at the box office. Little consensus exists as to the success of such an outcome.

The Problem Is Highly Complex. When learning demands emerge, the team will probably need to reconfigure knowledge in such a way as to make it useful. This reconfiguration requires synthesis or integration of existing disparate knowledge into a new whole or dissection of knowledge to find new essence or application. Examples include a research and development team that needs to identify a new approach to manufacturing an existing product.

Context Factors

Environmental Stability Is Low. When environmental stability is low, the team works under conditions in which external forces are constantly changing. An example is a military expedition faced with guerilla warfare, where both the nature of the attacks and the nature of the enemy are constantly changing.

Multiple Competing Goals Exist. Another condition consists of facing multiple and often conflicting goals. Such is the case in many foreign policy decisions, where the goal is to remain in good standing with allies while at the same time exerting pressure to make an unpopular decision.

Process

Ambiguous Stop Rules Exist. The rules or procedures to determine when to abandon a project or goal are not clear, as in the case of an expedition team with no knowledge of the surroundings to help them determine a turnaround time.

Work Processes Are Difficult to Maintain. This situation occurs when a team faces a problem that is constantly evolving, changing, and developing with new information or events, such as a television production team that is constantly trying to respond to the changing tastes of viewers.

Taken together, the above conditions for team learning require adaptation and demand new knowledge or reconfiguration of existing knowledge. Extant knowledge, team beliefs, and behaviors remain inadequate for effective task performance. Demands for problem solving are high. Under these

CONDITIONS FOR LEARNING VERSUS PERFORMANCE

Condition	Performance	Learning
Problem		
Nature of problem	Preexisting	New
Structure of problem	Well-structured	Ill-structured
Complexity of problem	Low	High
Context		
Environmental stability	High	Low
Definition of goal	Narrow	Broad
Process		
Stop rules	Clear and established	Ambiguous and underdeveloped
Work processeses	Established	Difficult to maintain

conditions, knowledge demands are relatively high because teams require new knowledge for effective teamwork.

"Conditions for Learning Versus Performance" summarizes the conditions that support learning versus performance in teams. These distinctions provide the first step in building a knowledge-based approach to tasks.

Situation Approach

When teams can distinguish between performance and learning conditions, they can choose the behaviors necessary to take effective action. In "Model of Learning Versus Performance in Team Effectiveness," task knowledge demands and solution complexity are classified as high or low. Learning and performance occupy distinct, opposing positions in the model. The model provides a useful way for teams to determine whether a performance or learning focus is appropriate based on task knowledge demands.

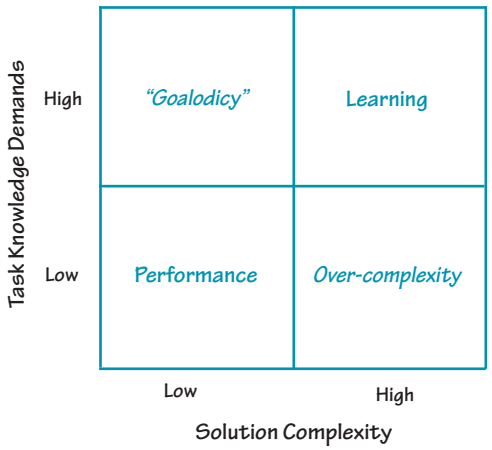
Teams are more effective when they engage in behaviors appropriate for the task. When task knowledge demands are high and the solution complexity is high, then conditions for learning exist. When task knowledge demands are low and the solution complexity is low, then conditions for performance exist. Surely, understanding the basis of teamwork requires a more detailed explanation than can be shown using a simple 2 x 2 matrix. However, depicting teamwork in this way provides a useful framework to understand the distinction between team learning and performance conditions. Indeed, learning and performance behaviors exist to some degree or another under all conditions, but the degree of focus can be determined more specifically through adherence to this model.

I suggest that team effectiveness begins when teams match the complexity of their solution with the "correct" interpretation of task knowledge demands. While the main focus of this article is the relationship between learning and performance as they are related to task effectiveness, the remaining two quadrants of the grid also deserve attention because they may limit effectiveness.

"Goalodicy." I have developed the term "goalodicy" to describe how the normally useful process of goal setting can actually drive failure. *Goalodicy* describes the processes in which group members and leaders closely identify with a future as yet unachieved goal. The term is a conflation of the ancient Greek word for "justification" or "judgment" (*dikee*) with the Anglo-Saxon word "goal" (*gal*).

As shown in the figure, goalodicy seems more likely when the combination of high task knowledge demands and low solution complexity emerges. Such a situation might result in groupthink, where groups overindulge in consensus at the expense of critical thinking and complex decision making. In this situation, teams continue to engage in performance-related behaviors, despite a situation calling for complexity of thinking. Problems that might result from this condition include the sacrifice of long-term objectives for short-term successes, unforeseen consequences that undermine teamwork, and unethical behavior driven by single-mindedness inappropriate for the task.

MODEL OF LEARNING VERSUS PERFORMANCE IN TEAM EFFECTIVENESS



This matrix gives a situational model of learning versus performance in team effectiveness.

Overcomplexity. Diagonally down and across the grid is a situation requiring low complexity that is met by a team response of high complexity. Examples are an organization that adopts complex legal procedures to regulate behavior between its members or a government program designed to improve transportation that requires decades to implement. Academics are fond of making complex solutions out of simple tasks as well. One problem with overcomplexity lies in people's inability to integrate and differentiate knowledge appropriate for the task so that the problem becomes too complex to solve effectively.

Effective teamwork involves engaging the appropriate behaviors for the situation. Teamwork becomes ineffective when solution and task are out of sync. The situational approach takes the first step in developing the conceptual distinction between learning and performance based on task and solution complexity. The next section highlights some of the insights that might be gained from this idea and explores the future directions for study and implications for practice.

Key Insights

Let's return to the theme of mountain climbing by looking at key insights centered on diverse learning competencies, psychological and emotional dynamics, the usefulness of goal setting, and the relationship between learning and performance in teams.

Learning Competencies. Team learning implies a variety of processes that may lead to team effectiveness. My observations suggest that mountain climbers must engage in a variety of learning activities, from problem solving to cooperative learning and adaptation to changing circumstances. For example, one team of climbers I studied found themselves trapped in a blinding storm with no compass; they were unable to identify the path home. The team tried several different strategies to learn their way out. They suggested various solutions (problem solving) and discussed potential solutions (cooperation). Finally, a short clearing in the clouds provided a view of the stars that allowed the leader to navigate back to camp (adaptation). When climbers talk about "years of training, months of

preparation, and weeks of climbing," they imply developing a variety of learning competencies.

Psychological and Emotional Factors. The growing interest in the cognitive aspects of team learning implies that learning aims to achieve rational outputs such as detecting and responding to errors, improving effectiveness, or achieving predefined goals. However, when mountain climbers talk about a summit that "draws you there," of a goal that has a "magnetic" quality, they imply that emotions account for an important part of the effectiveness equation. One study I conducted revealed that climbers often fail to heed preestablished stop rules in the form of turnaround times. Over time, climbing teams establish turnaround times that estimate the last possible time to abandon a push for the summit and return down safely. Many times, however, climbers ignore the turnaround times. This explains, in part, what happened in the 1996 Mount Everest climbing disaster, in which eight climbers died, attracting worldwide attention. Lulled by the magnetic force of the summit, climbers allowed emotions to take over and continued to the top, despite the rational rules standing between life and death.

Usefulness of Goal Setting. The climbers also highlight the importance of goals. Managers and scholars alike readily recognize that effective teamwork involves presenting multifaceted solutions, requires complex thinking, and mandates the balance of multiple, if not conflicting, goals. When advocates of goal setting propose it as a way to help improve effectiveness, they ignore the unintended consequences that often result from setting and pursuing difficult goals.

Goals, whether they are learning or performance in nature, work best when tasks and desired outcomes are easily defined. Goals provide managers with an important tool to enhance performance when organizations face clear parameters such as changes in production, sales, or revenue but often prove disastrous when organizations need to learn, develop, or respond to crisis.

For teams to realize the benefits of goal setting, a number of additional considerations become essential. First, learning follows anything but a rational path. Second, learning requires a number of interrelated psychological processes, often involving hidden defenses, ego-preservation mechanisms, and self-deception. Third, the goal-setting approach to learning fails to consider the distinction between learning and development. Learning describes an iterative process that results in development—a qualitative change in how people learn over time. The failure to distinguish between learning and development misses the distinction between the process and the outcome of task performance. Fourth, research shows that fundamental differences exist between which goals predict performance and which goals predict learning, seriously challenging the generalizations made about the benefits of goals in improving team effectiveness. Goals may improve task performance, but the impact of goals on task learning remains unclear. Fifth, research reveals that learning requires an organizational culture that supports psychological safety among members of the organization. A culture lacking in such psychological safety may not support team learning, even when conditions demand it. In short, the relationship between learning and performance in goal setting deserves further attention, and the setting of something called "learning goals" should be approached with caution.

Relationship Between Learning and Performance. Effective teamwork emerges from the ability to respond to changing situations. Learning and performance occupy a distinct but interrelated territory of the task demand equation. The best mountain climbers, for example, demonstrate the ability to understand contingency and shifting of circumstances. These climbers understand that when they take certain actions, "on a good day you can get away with it. And on a bad day, you'll die." This ability to understand contingency may explain why it took American Ed Veisturs 16 years to achieve his goal of summiting the world's highest peaks. The 16 years of effort hint at the need for both learning- and performance-directed behaviors in many circumstances.

Most tasks faced by teams involve both learning and performance outcomes. Some aspects of a task are familiar, while others are novel. Effective teamwork requires balancing the unique demands of learning and performance. Some of the team processes that support both learning and performance include interpersonal understanding and proactivity in problem solving.

- *Interpersonal understanding* is team members' awareness of other members as well as of themselves. On teams that share a high degree of interpersonal understanding, individuals possess an accurate understanding of the preferences, moods, and emotional states of other team members. Unlike other shared beliefs, such as team cohesion, interpersonal understanding does not necessarily create positive feeling toward other group members. A strong sense of interpersonal understanding in teams seems to lead to learning because it allows members to gauge and, therefore, respond to or compen-

NEXT STEPS

Tips for Leading Through Learning

1. Seek out the most challenging situations. These situations harbor the most learning potential for you and your followers.
2. Use learning as a motivational tool. Develop learning opportunities for your followers to boost their motivation. These could include a job rotation assignment, for example, that is complex and mandates a new skill set.
3. Develop compassion for others and a sense of responsibility for your actions. This means, get out of your office and into the field to better understand your followers' perspective and the challenges they experience.
4. Define and redefine your role in learning and leadership. This means examining yourself and others and the way that you experience challenges together.

sate for others at any given moment. Interpersonal understanding makes tacit knowledge more explicit by surfacing hidden aspects of knowledge that may not be readily visible.

Interpersonal understanding can be built in a team by setting aside time during each meeting for members to "check in" with each other. During the check-in session, team members briefly talk about their current state, including demands and recent challenges faced outside the team environment.

• *Proactivity in problem solving* involves anticipating and working to head off potential problems before they occur. It can be thought of as a form of learning in which teams develop strategies that allow them to adapt to changes in the nature of the task and the environment as they arise. This is an essential skill for learning since it allows teams to acquire new knowledge about the task as it develops.

Two Distinct Approaches to Teamwork

Learning and performance describe two distinct approaches to teamwork, each of which leads to team effectiveness under different circumstances. Like mountain climbers who recognize the difference between following an existing route and blazing a new one, successful teams are those that distinguish and respond to tasks that require learning versus those that require performance.

D. Christopher Kayes (Ph. D. Case Western Reserve University) is Dean's Research Scholar and Associate Professor of Management at George Washington University. He has won awards for his unique approach to learning, including best paper awards and nominations from the Academy of Management Learning and Education, Human Relations, and the Organizational Behavior Teaching Society. He was awarded the first "most significant contribution to the practice of management" award by the Organizational Behavior division of the Academy of Management. Chris is author of "Destructive Goal Pursuit: The Mt. Everest Disaster" and more than 40 peer-reviewed articles and chapters. You can contact him at dckayes@gwu.edu.