

MEASURING CRITICAL FEATURES OF THE LEARNING ORGANIZATION:
DATA FROM THE WILDLAND FIRE COMMUNITY

Most organizations find it challenging to engage in continuous learning and innovation. Yet, in a dynamic work place, learning is a critical source of significant advantage.

To respond to changes in the environment, as well as to create new opportunities, organizations must engage in activities aimed at both improving their existing products and services, and innovating. Implementation of initiatives such as Total Quality Management and Business Process Reengineering reflects this basic realization. Yet, the success or failure of such efforts depends not only on the specific processes put in place but also on human elements, such as skills, attitudes, organizational culture and leadership. Current interest in the ‘learning organization’ stems in part from the recognition that improvement initiatives are rarely successful if the organization lacks a learning culture, learning processes and leadership that values learning. A Learning Organization is “an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights” (Garvin, 1993: 80). The concept of the learning organization has received increasing attention by both scholars and practitioners, yet measures of its essential attributes have been in short supply. Therefore, researchers at the Harvard Business School developed and validated an instrument measuring these essential organizational attributes. The instrument is best used to assess properties of an organizational unit – an intact, reasonably interdependent department or site – rather than the organization as a whole, because prior research has found substantial variation in learning across units within the same organizations (e.g., Edmondson, 1996; 1999).

I. The Building Blocks of Learning Organizations

“Learning organizations are not built overnight. Most successful examples are the products of carefully cultivated attitudes, commitments, and management processes that have accrued slowly and steadily over time.” (Garvin, 1993: 91)

Edmondson, Garvin and Gino identified three building blocks of a Learning Organization:

1. *Learning Environment and Culture*: The first component represents the culture and environment created by the organization and consists of 3 elements:
 - a. **Climate for learning**: The degree to which people feel able to take interpersonal risks such as asking for help, raising concerns, discussing failures.
 - b. **Valuing differences**: The extent to which people genuinely welcome and use differences (e.g., demographic, opinion, expertise; tenure) that people bring to the workplace.
 - c. **Openness to new ideas**: The extent to which new or minority views are welcome.
2. *Learning Processes*: The second component represents the structures and learning processes used within the organization’s social institution and consists of 5 elements:
 - e. **Experimentation**: The organization supports and conducts experiments (actions taken for which outcomes are understood to be uncertain)
 - f. **Information Collection**: The organization has systematic procedures for obtaining relevant information from varied sources.
 - g. **Analysis**: The organization has systematic procedures for analyzing information to develop implications and understanding.
 - h. **Education and Training**: The organization offers and supports formal education and training.
 - i. **Information Transfer**: The organization has systematic procedures for sharing relevant information across employees.
3. *Leadership for Learning*: The third component refers to the leadership put in place within the organization. It reflects the extent to which the leaders of the organization (unit) communicate that they value and support learning (in the form of the behaviors through which learning occurs).

Leaders serve as designers, stewards and teachers, who are responsible for building organizations where people grow and develop their capabilities (Senge, 1990).

The Learning Organization survey was developed to measure each of the variables mentioned above. In particular, respondents were asked several questions and data were analyzed on a scale from 1 to 7. If, on a certain variable, a work unit scores 1, this means that a lot can be done to improve on that measure. A score equal to 7, instead, means that the work unit is doing exceptionally well on that variable influencing organizational learning.

II. The WildLand Fire Community

During the summer of 2005, 196 people from the WildLand Fire Community (WLF) took the LO survey. Respondents were distinguished into 3 categories: everyday working units (ewu), firefighting crews (fc), and overhead teams (ot). These categories were identified before asking people within each group to fill out the survey. Additional information on each group was collected through interviews in November 2005. Information on each of the three groups is provided in Table 1.

The number of responses per unit was equal to 79 responses for everyday working units, 58 responses for firefighting crews, and 59 responses for overhead teams.

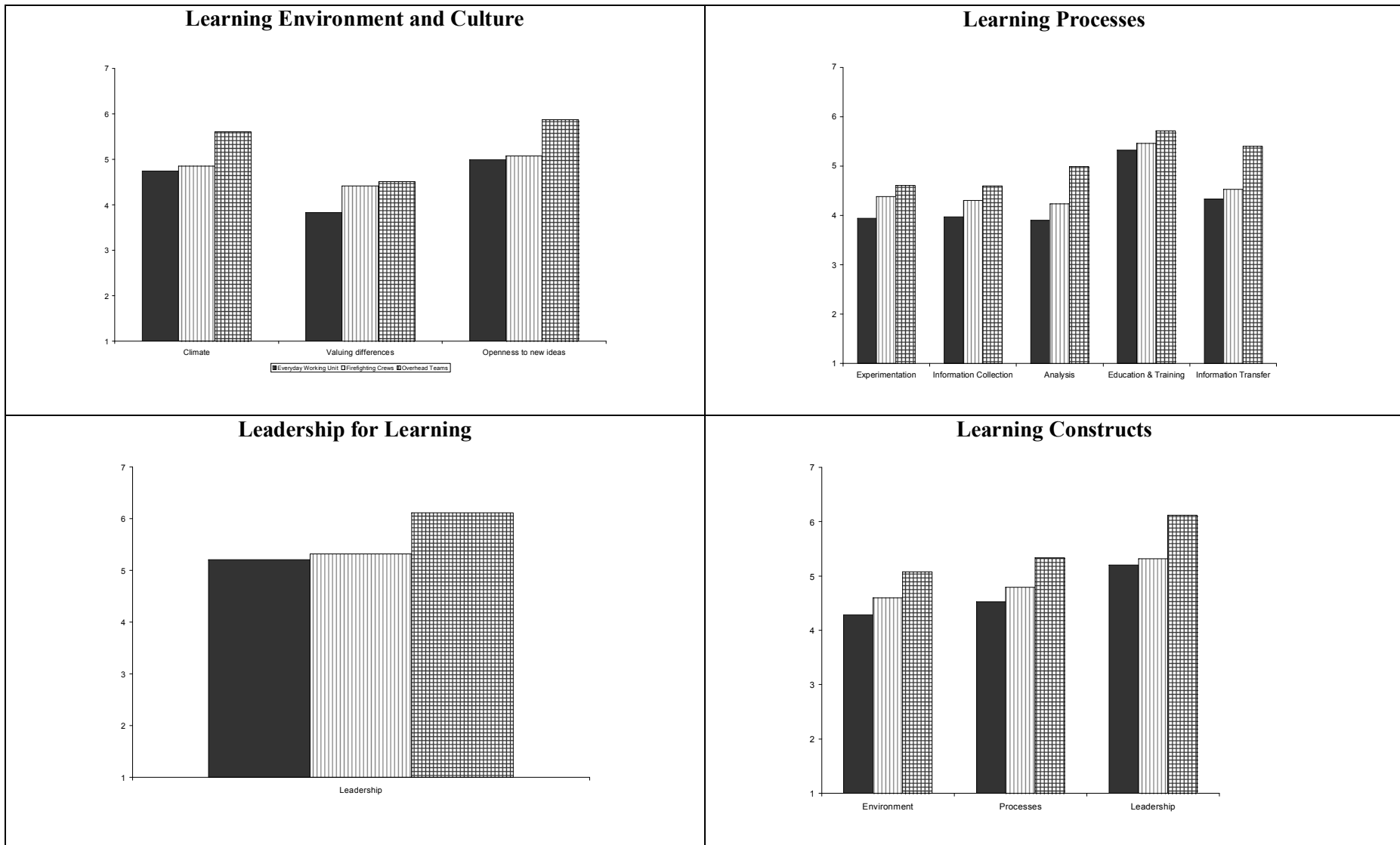
The results of the study are reported in Table 2. In the graphs, black is used for everyday working units, gray with vertical lines is used for firefighting crews and gray with squares is used for IMTs.¹

¹ Note that for the purposes of the Learning Organization Survey, respondents belonging to the overhead team group were asked to answer the questions based on their being part of IMTs.

Table 1: Work units at WildLand Fire (WLF) community.

	<i>Everyday Working Unit</i>	<i>Firefighting Crews</i>	<i>Overhead Teams (Incident Management Teams)</i>
Nature of the job	<p>Everyday working units are field units on a national forest, national park, wildlife refuge, district or state/local wildland fire department. These units can also be at a state wildland fire office, regional office or national office.</p> <p>The daily work of the forest/park/refuge level unit is suppressing fires, education about prevention of fires, planning and preparing for prescribed fires, managing wildland fire use (natural starts). The state/regional/national level units provide direct and indirect support to the field units. They do a lot of planning, coordination, perhaps policy work, developing and implementing wildland fire training.</p>	<p>A firefighting crew is a unit whose main responsibility is to suppress wildfire on the ground, put fire on the ground in a prescribed fire, or provide hands on support to wildland fire use (natural starts).</p>	<p>Incident Management Teams (IMT) are wildland fire professionals who work in an Incident Command System organization during a wildland fire or all risk event (i.e. hurricane or earthquake).</p>
Frequency in working together	<p>A wildland fire everyday working unit is one that works together on a daily or regular basis.</p>	<p>Firefighting crews work between 3-9 months out of the year.</p>	<p>Usually IMTs are called out 1-6 times per year to manage incidents on a regional or national level. The national teams are available for an assignment all year long while the regional teams are available approximately 6 months per year.</p>
Number of people	<p>The unit can have between 5-25 people assigned to it.</p>	<p>Some crews such as engine crews have 3-5 people on the crew where other hand crews have 7 or 20 persons on the module or crew. The standard firefighting hand crew consists of 20 firefighters.</p>	<p>The IMTs are composed of 10-80 personnel depending on the size and complexity of the incident. IMT members are comprised of people from various wildland fire agencies at the federal, state and local level.</p>
Nature of the task ('Daily work')	<p>At the forest/park/refuge level the unit is primarily operational. At the state/regional/national level the unit is primarily administrative.</p>	<p>The unit's daily work is to suppress wildfires (unwanted fires) in an initial attack response (immediately) or extended attack (one, two or more days). Other firefighting crews ignite and hold the lines of a managed prescribed fire. Engine crews perform both of these duties using a wildland fire engine as their primary tool vs. a hand tools (shovel, Pulaski, McCloud.) Other firefighting crews on-the-ground manage a wildland fire use event where lightning has started a fire in an area where the unit is trying to restore fire back into the ecosystem.</p>	<p>The IMT's daily work performed on fires is to suppress a large wildfire, manage a wildland fire use event or provide operational and logistical support during a natural or manmade disaster. When the IMTs are not on assignment during the year, they work in their everyday working unit.</p>
Structure of the unit	<p>At a small everyday working unit there is one work leader with an overall supervisor. At the larger units it is more decentralized with one overall manager.</p>	<p>Firefighting crews are primarily operational. There is an engine captain, module leader or crew leader who has primary supervision responsibility over the crew. The 20 person firefighting crews have one crew leader and two squad bosses. Each squad boss oversees 10 firefighters. This span of control is necessary due to the high risk aspects of the job.</p>	<p>The IMTs are organized by the Incident Command System structure. Each team has an Incident Commander (IC) who has the overall responsibility for the incident. The IC has a command staff consisting of a fire information officer, safety officer and liaison officer. There are four sections/functions who report to the IC: Planning, Operations, Logistics and Finance.</p>
Familiarity	<p>The units generally have the same people although some employees in the field working units are seasonal or temporary so they only work during wildfire season. The state/regional/national level units generally have the same personnel except when transfers or retiring occurs.</p>	<p>Firefighting crews are generally seasonal or temporary employees who work between 3-9 months out of the year.</p>	<p>Team members stay on a team for 1-8 years. The IMTs are both primarily operational but contain significant administrative and logistical functions.</p>

Table 2: Results for WildLand Fire (WLF) community.



III. Where do we go from here?

As the results show, everyday working unit and firefighting crews score, on each variable, lower than IMTs. As one of the managers of WLF noted during an interview, “It is very difficult if you’re out there learning on the field within an IMT to bring the learning home, when you’re working within an everyday working unit. We need to get better at that.”

The graphs presented in Table 2 highlight the areas in which there is room for improvement. Notably, we would suggest attention to the following:

- First, we note that leadership, overall, is assessed at a higher level than either processes or environment. This kind of result usually suggests the possibility of a time lag, while the environment and the processes catch up with the message leadership is trying to send.
- It is also the case that investment in improving the frequency of various learning processes – experimentation, information collection, analysis, and information transfer, in particular – would be worthwhile. The group is scoring uniformly high on formal education and training, so this is not an area for attention at the current time.
- IMTs is uniformly higher than the other two groups measured, in leadership, process, and environment. This is likely driven in part by the nature of the work done by IMTs, but this result may also provide an opportunity for the sharing of best practices across the groups in WLF, to create greater parity in learning practices.
- For the learning environment, *openness* and *climate* are higher than *valuing differences*, a result that suggests an opportunity for focused attention. You may wish to have some seminars or unstructured sessions examining the value different backgrounds, skill sets and ideas can bring to the organization.

References

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