

Organizational Learning

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No theory or model of organizational learning has widespread acceptance. This paper clarifies the distinction between organizational learning and organizational adaptation and shows that change does not necessarily imply learning. There are different levels of learning, each having a different impact on the strategic management of the firm.

Systematic assessment of the strategic management literature suggests an interesting dilemma: Although there exists widespread acceptance of the notion of organizational learning and its importance to strategic performance, no theory or model of organizational learning is widely accepted. Major research (Chandler, 1962; Duncan, 1974; Jelinek, 1979; Miles and Snow, 1978; Miller & Friesen, 1980; Shrivastava, 1981) along with more modest efforts provide the basis for initial attempts to define, to develop, and to differentiate organizational learning and its components. Each has approached the subject from different perspectives, leading to more divergence.

The confusion stems as far back as two decades ago, when Simon (1969) defined organizational learning as the growing insights and successful restructurings of organizational problems by individuals reflected in the structural elements and outcomes of the organization itself. In this definition, learning consists of the development of insights on the one hand and structural and other action outcomes on the other. One is a change in states of knowledge—not clearly perceptible; the other often involves a change more easily visible in terms of an organizational outcome. And, most important, the two often do not occur simul-

taneously, which makes the problem of distinguishing between them all the more important.

As a result of this confusion, theorists have referred to learning as (a) new insights or knowledge (Argyris & Schön, 1978; Hedberg, 1981); or (b) new structures (Chandler, 1962); or (c) new systems (Jelinek, 1979; Miles, 1982); or (d) mere actions (Cyert & March, 1963; Miller & Friesen, 1980); or (e) some combination of the above (Bartunek, 1984; Shrivastava & Mitroff, 1982). These phenomena are referred to as learning (Cyert & March, 1963; Jelinek, 1979); adaptation (Chakravarthy, 1982; Meyer, 1982); change (Dutton & Duncan, 1983; Mintzberg & Waters, 1982); or unlearning (Starbuck, Greve, & Hedberg, 1978).

In all instances the assumption that learning will improve future performance exists. The problem emerges around a clear definition of learning and the measurement of it. The purpose here is to clarify these issues of definition so that a better theory can be built. An initial definition is presented: Organizational learning means the process of improving actions through better knowledge and understanding.

Areas of Consensus

There appears to be some agreement or consensus regarding a theory for organizational learning in several areas.

Environmental Alignment

Convergence exists on the importance of alignment. Theorists such as Chandler (1962), Katz and Kahn (1966) and Thompson (1967) have

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argued that the ultimate criterion of organizational performance is long term survival and growth. To achieve this, organizations align with their environments to remain competitive and innovative (Barnard, 1938; Lawrence & Dyer, 1983; Lawrence & Lorsch, 1967; Thompson, 1967). Hence a key premise of strategic management is an alignment between the organization and its environment that maintains the competitiveness and the survival of the firm over the long run (Hambrick, 1983; Summers, 1980).

Alignment implies that the firm must have the potential to learn, unlearn, or relearn based on its past behaviors. The works of Chakravarty (1982), Chandler (1962), Cyert and March (1963), Hambrick (1983), Miles and Snow (1978), and Miller and Friesen (1980) recognize the widespread acceptance of this premise. In fact, Chakravarty (1982) argues that organizational adaptation is the essence of strategic management because it is the key activity for dealing with changes occurring in the environment and involves the continuous process of making strategic choices. Organizations have leeway and choice in how they adjust to a changing environment, and this leads to the capacity of organizations to learn over time (Miles, 1982). Thus, organizational performance affects the organization's ability to learn and to adapt in a changing environment.

Individual versus Organizational Learning

Some agreement exists that distinctions must be made between individual and organizational learning. Though individual learning is important to organizations, organizational learning is not simply the sum of each member's learning. Organizations, unlike individuals, develop and maintain learning systems that not only influence their immediate members, but are then transmitted to others by way of organization histories and norms (Lawrence & Dyer, 1983; Martin, 1982; Mitroff & Kilmann, 1976). Hedberg states it this way:

Although organizational learning occurs through individuals, it would be a mistake to conclude that organizational learning is nothing but the cumulative result of their members' learning. Organizations do not have brains, but they have cognitive systems and memories. As individuals develop their personalities, personal habits, and

beliefs over time, organizations develop world views and ideologies. Members come and go, and leadership changes, but organizations' memories preserve certain behaviors, mental maps, norms, and values over time (1981, p.6).

Much of the individual learning theory that deals with repetition of speech and motor skills does not characterize organizational learning, at least at the strategic level, in situations that are mainly unique and nonrepetitive. Learning enables organizations to build an organizational understanding and interpretation of their environment and to begin to assess viable strategies (Daft & Weick, 1984; Donaldson & Lorsch, 1983; Starbuck et al., 1978). It results in associations, cognitive systems, and memories that are developed and shared by members of the organization.

Contextual Factors

Four contextual factors affect the probability that learning will occur: corporate culture conducive to learning, strategy that allows flexibility, an organizational structure that allows both innovativeness and new insights, and the environment. These have a circular relationship with learning in that they create and reinforce learning and are created by learning.

Culture. An organization's culture manifests itself in the overriding ideologies and established patterns of behavior (Martin, 1982; Schein, 1983). Thus, culture consists of the shared beliefs, the ideologies, and the norms that influence organizational action-taking (Beyer, 1981; Pfeffer, 1981; Mitroff & Kilmann, 1976). In fact, Kets de Vries and Miller (1984) suggest that the culture can be used to predict the actions taken. This is supported by Miles and Snow (1978), who demonstrate that a firm's choice of strategic posture (defender, prospector, etc.) is tied closely to its culture, that broad belief systems partially determine strategy and the direction of organizational change. Clearly, these norms will influence the behavioral and cognitive development that the organization can undergo. In turn, change and/or learning in organizations often involves a restructuring of those broad norms and belief systems (Argyris & Schön, 1978; Dutton & Duncan, 1982, 1983; Jelinek, 1979; Shrivastava & Schneider, 1984).

Strategy. The organization's strategic posture partially determines its learning capacity. Strat-

egy determines the goals and objectives and the breadth of actions available for carrying out the strategy. Thus strategy influences learning by providing a boundary to decision making and a context for the perception and interpretation of the environment (Chandler, 1962; Cyert & March, 1963; Daft & Weick, 1984). Similarly, the strategic options that are perceived are a function of the learning capacity within the organization (Burgelman, 1983).

The strategic posture also creates a momentum to organizational learning. Miller and Friesen (1980) stress that the firm's strategic direction creates a momentum that is pervasive and highly resistant to small adjustments. Reorientations and adjustments occur as widespread revolutions that affect entire strategies.

Structure. Though often seen as an outcome of learning, the organization's structure plays a crucial role in determining these processes. Duncan (1974) points out that different decision making structures are needed in the same organizational unit, depending on the degree of flexibility that is required: A centralized, mechanistic structure tends to reinforce past behaviors, whereas an organic, more decentralized structure tends to allow shifts of beliefs and actions. By reducing the information demands, the decentralized structure reduces the cognitive workload of the individuals, thereby facilitating the assimilation of new patterns and associations (Galbraith, 1973). Functional organizations may be efficient but are less likely to adapt; questions of adaptability emerge around issues of differentiation (Hrebiniak & Joyce, 1984; Starbuck et al., 1978; Vancil, 1978). In fact, Meyer suggests that "formalized and complex structures retard learning but that learning is enhanced by structures that diffuse decision influence" (1982, p. 533). Hence organizations can be designed to encourage learning and reflective action-taking, but this generally means moving away from mechanistic structures (Morgan & Ramirez, 1983).

Environments. If either the internal or external environment is too complex and dynamic for the organization to handle, an overload may occur, and learning will not take place (Lawrence & Dyer, 1983). Hedberg (1981, p.5) suggests that "learning requires both change and stability . . . between learners and their environments." Al-

though too much stability within an organization can be dysfunctional (there is little inducement to learn and/or change if established behaviors never grow obsolete), too much change and turbulence make it difficult for learners to map their environment (March & Olsen, 1975).

The process of learning involves the creation and manipulation of this tension between constancy and change; in fact, a certain amount of stress is a necessity if learning is to occur (Cangelosi & Dill, 1965; Hedberg, Nystrom, & Starbuck, 1976). The level of stress and the degree of uncertainty about past successes determine the effectiveness of the conditions of learning discussed, and they also influence how the environment is perceived and interpreted (Daft & Weick, 1984; Starbuck et al., 1978; Weick, 1979).

Concept of Learning

Change, learning, and adaptation have all been used to refer to the process by which organizations adjust to their environment. The problem is that these terms have not been used consistently with the same meanings. As a result, the organizational learning literature is full of multiple interpretations of the concept. The following are examples of this.

Hedberg (1981) suggests that it is misleading to equate learning with adaptation. The former involves the understanding of reasons beyond the immediate event, the latter simply means defensive adjustment. Yet he emphasizes that in one form of learning, behavior requires no understanding. This implies that simple adaptation (with no understanding of causal relationships) may be a part of learning, but that learning can involve a great deal more.

On the other hand, Meyer (1982) uses the term adaptation to refer to two forms of organizational adjustment that both involve some understanding of action/outcome causal links: Deviation-reducing adaptation occurs when there is understanding within a given framework, a given set of organizational norms; and deviation-amplifying adaptation involves the creation of new causal relationships built on a new base of assumptions. Both of these types of adaptation form part of what Hedberg (1981) calls levels of learning.

Two basic dimensions appear with some consistency in the literature. One has to do with the

content of learning. Is the adjustment a process affecting primarily an organization's interpretation of events (Daft & Weick, 1984), the development of shared understanding and conceptual schemes among members of the organization (Hedberg, 1981)? Or does organizational learning refer to the new responses or actions that are based on the interpretations (Daft & Weick, 1984)? For the framework developed in this paper, the former is called *cognition development* and the latter, *behavior development*.

The other important dimension that emerges refers to the extent of cognitive development, and it has to do with the *level* at which this development takes place. Does the process merely serve to adjust parameters in a fixed organizational structure, or does the development redefine the rules and change the norms, values, and world views (Argyris & Schön, 1978; Bateson, 1972)? This paper uses the typology introduced by Bateson (1972) and Argyris and Schön (1978) and developed by Hedberg (1981) to address this important dimension: lower-level and higher-level learning.

Content of Learning

The content produced by the process of organizational adjustment may be defined as the patterns of cognitive associations developed by the organization's members (Duncan & Weiss, 1979; Hedberg, 1981; Jelinek, 1979; Pfeffer & Salancik, 1978; Weick, 1979). Alternatively, the content may be viewed as the behavioral outcomes that reflect the patterns and/or cognitive associations that have developed (Daft & Weick, 1984). The distinction is similar to Schein (1983) arguing for three levels of culture: cognitive, behavioral, and artificial.

However, especially in the context of organizational learning and adaptation, it is essential to note the difference between cognition and behavior, for not only do they represent two different phenomena, but also one is not necessarily an accurate reflection of the other. Changes in behavior may occur without any cognitive association development; similarly, knowledge may be gained without any accompanying change in behavior. The links between changes in behavior

and level of cognitive development may be depicted as in Figure 1.

Small changes in behavior do not tend to bring about major cognitive development—the change may be too gradual for clear associations to emerge; nor do major changes in behavior imply equally large advances in cognitive development. In fact, one school of thought suggests that action-taking creating change may not be caused by cognitive growth but merely by a need to do something. Creating change may be creating the illusion of learning such that management appears to be in control (Salancik & Meindl, 1984; Starbuck, 1983).

Hedberg (1981) suggests that the development of associations requires both change and stability. Although too much stability and unchanging behavior within an organization can lead to stagnation rather than cognitive growth, the opposite extreme may prove to be an overload for organizational members.

A number of strategic implications may be noted when viewing a firm's position with regard to change and learning and with regard to fit with the environment. For instance, Position A is typical of many bureaucratic firms in which success programs have been firmly engrained: No new learning takes place, and no attempts are made to change. The steel industry operated in this position until recently. In fact, Position A may be appropriate in a stable and predictable environment in which there is little incentive or need for either change or learning. This may be desirable to maintain strategies if little change is desired, such as within a mature industry with a dominant market share.

On the other hand, Position B represents firms that keep taking actions, changing strategies, and restructuring but with very little learning taking place. The wave of merger activity during the 1980s represented rapid changes in the form of acquisitions as firms diversified with little learning taking place (Salter & Weinhold, 1979). Also, Starbuck et al. (1978) describe organizations in crisis as reaching a point at which actions are taken in hopes that one will just happen to reduce the crisis. The actions are not based on learning or knowledge of what will work. Position B produces shocks for the organization with little

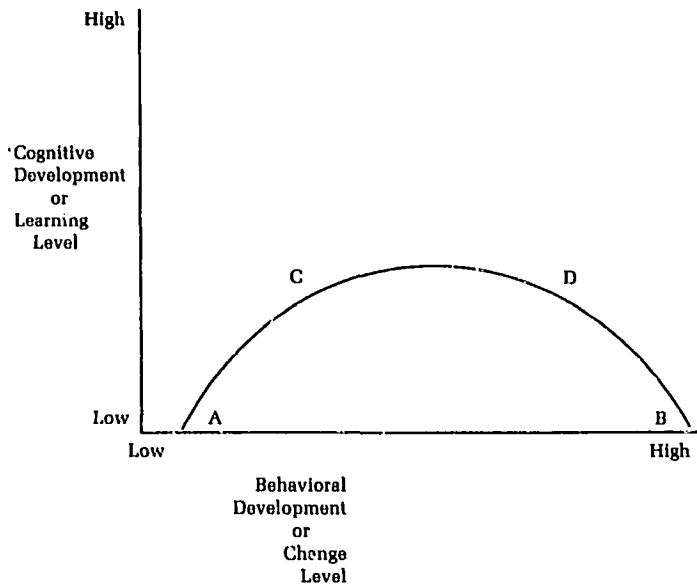


Figure 1. Learning and change.

resulting sense of direction. In an environment in which accurate prediction is impossible, Position B may be a desirable temporary style suggesting a retrenchment strategy to minimize losses.

Position C produces few changes, but these represent meaningful learning tools. Bartunek's (1984) description of the fundamental changes in the interpretive schemes and in the structures of a religious order illustrate Position C. Change created meaningful modifications in the cognitive development of the organization. New beliefs and interpretive schemes developed. Position C may be most appropriate in a turbulent environment in which renewal and innovation (forms of learning and change) are crucial for survival but too much change would cause the organization to lose its sense of direction.

Finally, Position D, with its high propensity to change and to learn, may be appropriate in a moderately turbulent environment. The internal complexity and dynamism of such an organization make it difficult to support a large amount of stress from the external environment. It suggests an invest strategy that produces slack within the organization. Morgan and Ramirez's (1983) descriptions of holographic organizations fit firms

at Position D. They describe organizations that are designed to be constantly changing with few well-defined rules, such that the organizations are better at learning, problem formulation, and, hence, problem solving.

Levels of Learning

Within the category of cognition development it is possible to identify a hierarchy based on the level of insight and association building. Two general levels are referred to as lower- and higher-level learning.

Lower-level learning occurs within a given organizational structure, a given set of rules. It leads to the development of some rudimentary associations of behavior and outcomes, but these usually are of short duration and impact only part of what the organization does. It is a result of repetition and routine and involves association building. Cyert and March (1963) identify success programs, goals, and decision rules as illustrative of learning based on routine.

Because of this reliance on routine, lower-level learning tends to take place in organizational contexts that are well understood and in which management thinks it can control situations (Duncan,

1974). This apparent control over the environment is more characteristic of lower and middle levels of management than of upper levels, but lower-level learning should not be confused with lower levels within the organization. Any organizational level may be involved with this process of learning. The desired consequence of lower-level learning is a particular behavioral outcome or level of performance. Though there may be far-reaching effects, the focus of this learning is on the immediate effect on a particular activity or facet of the organization. Morgan and Ramirez (1983) describe this as "functional rationality"—rationality that is based on learning what has worked in the past with simple, clear-cut problems.

Duncan (1974) speaks of a process similar to lower-level learning which he calls "behavioral-level learning," that level of learning that is concerned with controlling the firm as it adjusts to the environment—the desired level of learning for routine decisions. Argyris and Schön (1978) refer to it as "single-loop learning," that process that maintains the central features of an organization's "theory-in-use" or set of rules and restricts itself to detecting and correcting errors within that given system of rules.

Higher-level learning, on the other hand, aims at adjusting overall rules and norms rather than specific activities or behaviors. The associations that result from higher-level learning have long term effects and impacts on the organization as a whole. This type of learning occurs through the use of heuristics, skill development, and insights. It therefore is a more cognitive process than is lower-level learning, which often is the result of repetitive behavior.

The context for higher-level learning typically is ambiguous and ill-defined, making purely repetitive behavior rather meaningless. This ambiguity and environmental complexity characterizes upper management levels of the organization where decision making norms are at least partially determined, that is, where higher-level learning usually occurs. Considerable evidence suggests that some type of crisis is necessary for changes in higher-level learning—for example, a new strategy, a new leader, or a dramatically altered market (Miller & Friesen, 1980; Starbuck et al., 1978).

The desired consequence of this type of learning often is not any particular behavioral outcome, but rather the development of frames of reference (Shrivastava & Mitroff, 1982), or interpretive schemes (Bartunek, 1984), new cognitive frameworks within which to make decisions. In fact, "unlearning" may be one of the most important consequences (Nystrom & Starbuck, 1984; Starbuck, 1983).

Sometimes the results of higher-level learning become dysfunctional if it creates the development of superstitions, associations, or norms that support dysfunctional behaviors. Superstitions or organizational "success" stories can create the inability or unwillingness to change (March & Olsen, 1975; Pfeffer, 1981). The learning can focus on identifying ways of not changing, not experimenting, game-playing, maintaining the status quo, and avoiding problems (Cyert & March, 1963; Lyles & Mitroff, 1980; Nystrom & Starbuck, 1984). This may become very engrained and require shocks, jolts, or crises for unlearning, new higher-level learning, and readaptation to take place (Lawrence & Dyer, 1983; Meyer, 1982; Nystrom & Starbuck, 1984).

Discussion

A commonly expressed belief in the strategic management literature is that organizations do learn and adapt and that this enhances the organization's ability to survive. Consequently one would assume that there is a theoretical framework for looking at learning and determining if it exists and, if so, how to improve it. Unfortunately, there still exists confusion regarding what is learning and how to distinguish it from unreflective change. A listing of the major works in the stream of research dealing with organizational learning and adaptation (Table 1) further demonstrates this. Next to each author is listed the label (learning or adaptation) that the author has attached to the particular type of organizational phenomenon in terms of the two underlying dimensions discussed above (content and level).

Of this list of 15 works on learning and adaptation, 12 use the label "learning." Of these 12, 7 look at both behavioral and cognitive development; 3 look only at cognitive and 2 only at behavioral phenomena. The three works that use the

Table 1
A Review of Organizational Learning

Author	Label	Meaning
Argyris & Schön (1978)	<i>Learning</i> Single-loop Double-loop	Lower-level cognition Higher-level cognition
Canjajosi & Dill (1985)	<i>Learning</i> Interaction between individual & group adaptation	Behavioral development Cognitive development
Chakravarthy (1982)	<i>Adaptation</i>	Cognitive development
Cyert & March (1983)	<i>Learning</i> Adaptation of goals, attention rules and search rules	Behavioral development
Daft & Weick (1984)	<i>Learning</i> Action after interpretation	Behavioral development
Duncan (1974)	<i>Learning</i> Behavioral level Strategy level	Behavioral development Cognitive development
Duncan & Weiss (1978)	<i>Learning</i> Action-outcome relationships	Cognitive development
Hedberg (1981)	<i>Learning</i> Habit-forming Discovery	Behavioral development Cognitive development
Jellinek (1979)	<i>Learning</i> OST-belief sharing	Cognitive development
March & Olsen (1975)	<i>Learning</i> Rational adaptation Interpretation	Cognitive development
Mayer (1982)	<i>Adaptation</i> Deviation-reducing Deviation-amplifying	Lower-level cognition Higher-level cognition
Miles (1982)	<i>Learning</i> Diversification outcomes Planning formalization	Behavioral development Cognitive development
Miles & Rundolph (1980)	<i>Learning</i> Reactive learning Proactive learning	Behavioral development Cognitive development
Miller & Friesen (1980)	<i>Adaptation</i> Actions	Behavioral development
Shrivastava & Mitroff (1982)	<i>Learning (Systems)</i> Evolutionary Designed	Behavioral development Cognitive development

term "adaptation:" range from dealing only with behavioral phenomena (Miller & Friesen, 1980) to the "highest" level of cognitive development (Meyer, 1982).

This brief review of the literature confirms that there is little consistency in the application of

terms to the concepts being examined. The only patterns that can be detected are (a) the prevalence of the term "learning" over "adaptation," and (b) the tendency to look at both behavioral and cognitive development regardless of the label.

Theories of higher-level learning are rare. Few

instances of it have been observed (Hedberg, 1981; Shrivastava, 1981). It is unclear whether this is because it is a rare occurrence or because theorists have not developed ways of describing and measuring it. Duncan (1974) contrasts what he calls "strategy-level learning" with "behavioral-level learning." The former has more to do with the development of learning rules, but he determines the level largely on the basis of formality of the learning process. Argyris and Schön (1978) refer to this higher level as "double-loop learning": resolving incompatible organizational norms by setting new priorities and weighing of norms or by restricting norms altogether. Bartunek (1984) provided some insights in the measurement of higher-level learning by demonstrating the process by which changes in higher-level learning are intertwined with structural change and by demonstrating the depth of analysis that is necessary to observe higher-order learning.

Table 2 summarizes the preceding discussion of the levels of organizational learning and identifies a number of activities that may be categorized according to whether they represent lower- or higher-level learning processes.

Lower-level Learning: Focused learning that may be mere repetition of past behaviors—usually short term, surface, temporary, but with associations being formed. Captures only a certain element—adjustments in part of what the organization does. Single-loop. Routine level.

Higher-level Learning: The development of complex rules and associations regarding new actions. Development of an understanding of causation. Learning that affects the entire organization. Double-loop learning. Central norms, frames of reference, and assumptions changed.

One difficulty is that when an incremental change has been made in the organizational structure, it is difficult to determine whether it is merely a change or it is a response based on understanding the relationship of that response to environmental events and/or past actions. Making organizational changes or adjustments does not and should not automatically assume the existence of learning. Another difficulty is that organizational learning relies on the people and groups as the agency for the transferral of associations, meanings, worldviews, and ideologies (Hedberg, 1981). In order to determine learning, one must rely on the statements or actions of individuals

Table 2
Levels of Learning

	<i>Lower-level</i>	<i>Higher-level</i>
<i>Characteristics</i>	<ul style="list-style-type: none"> • Occurs through repetition • Routine • Control over immediate task, rules & structures • Well-understood context • Occurs at all levels in organization. 	<ul style="list-style-type: none"> • Occurs through use of heuristics and insights • Nonroutine • Development of differentiated structures, rules, etc. to deal with lack of control • Ambiguous context • Occurs mostly in upper levels
<i>Consequence</i>	<ul style="list-style-type: none"> • Behavioral outcomes 	<ul style="list-style-type: none"> • Insights, heuristics, and collective consciousness
<i>Examples</i>	<ul style="list-style-type: none"> • Institutionalizes formal rules • Adjustments in management systems • Problem-solving skills 	<ul style="list-style-type: none"> • New missions and new definitions of direction • Agenda setting • Problem-defining skills • Development of new myths, stories, and culture

or groups representing the organization, and one must separate behavioral and cognitive development from each other and from mere action-taking or change.

These are difficulties that must be overcome if there is to be further development of a theory of organizational learning. Certainly a first step is the recognition of their existence. The second step is reaching agreement about the meanings of the words used. To aid in resolving this dilemma, the following definitions for learning and adaptation are suggested:

Learning: The development of insights, knowledge, and associations between past actions, the effectiveness of those actions, and future actions.

Adaptation: The ability to make incremental adjustments as a result of environmental changes, goal structure changes, or other changes.

Conclusions

Organizational adjustment, whatever its form, is a critical element of strategic management. Recent longitudinal studies (Lawrence & Dyer, 1983; Mintzberg & Waters, 1982) demonstrate the importance of analyzing the adjustment decisions a firm makes over time. It also is important to analyze whether these decisions demonstrate unreflective action-taking or in-depth understanding of past actions.

The literature survey above suggests that this distinction has been observed—7 of the 15 works refer to (versions of) both behavioral and cognitive development. The survey does indicate, however, that there is considerable inconsistency in what is being observed and how it is being measured. What is called “learning” in one is “adaptation” in another and “action” in yet a third.

Once one accepts that organizational learning and change may be two different processes, the dilemma becomes a measurement problem. Behavioral adaptation can be measured by changes in management systems, decisions, and the allocation of resources. Organizational learning that represents changing associations, frames of re-

ference, and programs begs a methodology that demands a more in-depth look at the functioning of the organization. In order to measure lower-level learning, one can look at changes in the systems and so on, but to distinguish it from purely behavioral adaptation one needs to know if association development has occurred.

The area of research focusing on higher-level learning is particularly relevant to strategic management because it is this level of learning that will impact a firm's long term survival. Some research questions that might be proposed are:

1. Are certain activities, such as experimentation, unlearning, and strategic problem formulation characteristic of organizations with more developed higher-level learning?
2. How do organizations develop discrimination skills that distinguish whether a past success program (lower-order learning) is appropriate and when it is not?
3. Is momentum characteristic of higher-level learning as well as lower-level learning?
4. Do diversified firms have better skills for higher-level learning than do single business firms? Or vice versa?
5. Is higher-level learning more characteristic of global firms that operate in a multifaceted, complex environment?

Application of the concepts developed in this paper means developing methods for measuring learning that are more than mere observations of changes taking place. This is particularly essential for learning involving strategic management, when situations are frequently unique, ambiguous, and have different interpretations. Learning necessitates experimentation, unlearning of past methods, and encouraging multiple viewpoints and debate (Nystrom & Starbuck, 1984). The guidance of this process is an essential element of the executive function (Andrews, 1980)—to ensure that learning is occurring and to assure the organization's long term survival. The measurement and analysis of this process is an essential element of the researcher's function. Researchers can help to guide organizations and executives by developing better methods for distinguishing between types and levels of organizational learning.

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