Organizational Learning: What is New?

by

Edgar H. Schein

Working Paper # 3912 July, 1996

Organizational Learning: What is New?[1]

Edgar H. Schein

MIT Sloan School of Management

1. Introduction

In tackling this question, it is important to note at the outset that we have neither a very good understanding of the word organizational nor of the word learning. We talk glibly about organizational learning without, for example, taking into account the useful distinction made by Craig Lundberg between "Organizational Learning" (OL) by which we typically mean learning by individual and groups IN the organization vs. the "Learning Organization" (LO) by which we mean learning BY the organization as a total system. We also need to distinguish both of these concepts from the concept of "Organization Development" (OD) or as Golembiewski prefers "Organization Development and Change" (ODC).[2]

Furthermore, most of the writers and practitioners in all three of these fields throw around the concept of "Culture" (CU) as if we understood well what that concept means. I am especially struck by the glibness of those who call for the creation of "learning cultures" or "cultures of openness and trust," as if culture could be ordered up like an item on a restaurant menu.

In trying to focus on what is new it became apparent to me that I had to decide first which of these various concepts to tackle. I knew that a literature review would be relatively useless because the literature is all over the map and even more confusing about

---

[1] Invited address to the Third Biennial International Conference on Advances in Management, Sheraton Tara Hotel, Framingham, MA., June 28, 1996.

[2] Distinctions made by previous speakers at the conference.

what OL, LO, ODC, or CU are really all about. One reason for this confusion is that we have so many methodologies and paradigms for looking at these phenomena.

I have reached the conclusion over the last several decades that the only way out of this confusion is to go back to real data, based on intensive observation of real phenomena. I call this the clinical approach and will begin this paper by attempting to characterize its unique features (Schein, 1987).

2. The Clinical Approach to Organizations, Learning, and Culture

The clinical approach can be described in terms of the six points on Chart 1:

a) The data to be analyzed must be based on intensive in-depth observations of real phenomena, preferably in crucial cases of learning or change that are based on real problems to be solved in the "here and now".[3]

b) The data always include the effects of interventions even when the intervention is as mild as the observer showing up at the scene of the action and asking a question or two. In fact, without intervention you cannot decipher how the system really works, as Kurt Lewin reminded us long ago. On the other hand, the best data on how the system works is often revealed in how it reacts to our interventions.

c) The clinical approach always assumes a better or a worse state and is, therefore, intrinsically concerned with both pathology and health. Even if the observer attempts to be neutral and non-evaluative, it will be apparent that the system being studied is concerned about better and worse states, so the observer must have some model of pathology and health in mind. One crucial way

[3] George Roth's development of the concept of "learning histories" applies here in that learning projects should be documented and tracked from their very inception. (Roth, 1996).

of gathering data, then, is to conduct post-mortems after the members of the system have taken some action.

d) Instead of looking for statistical regularities the clinical approach assumes that one's theoretical model must take into account all the deviant cases and be able to explain them. This position focuses one on puzzles and anomalies as the potentially most productive loci for insights.

e) Concepts and theories that arise out of the observations must deal with the real dynamics of the system and must, therefore, be process oriented as well as structure oriented.

f) Where individuals, groups, and larger organizational systems are involved, one must focus on the systemic dynamics and not get caught up with oversimplified linear causal models.

The clinical perspective grows out of work with clients who need help. This initial bias toward the client is a disadvantage for knowledge generation because it limits what the clinical observer can observe, but it has the great advantage that if the client wants help, he or she de facto licenses the observer to dig deeper, to ask embarrassing questions, and to delve into areas that would ordinarily be concealed. If one is looking for the "real" dynamics of what is going on in the system, one is therefore better off with the clinical perspective.

As I have applied this perspective to my own experience with OL, LO, ODC, and CU I have reached the conclusion that we have spent far too much time on learning by individuals and groups, what is typically the approach of OL and ODC, and far too little on understanding the deeper dynamics of the Learning Organization (LO) and the role of Culture (CU) in those dynamics. I will therefore focus the rest of this paper on the latter two domains.

3. The Learning Organization and the Role of Culture

Organizations are complex systems. Before we can decide how organizations learn, we must define what we mean by systemic health and learning, as defined in Charts 2 and 3. Health is a difficult concept, whether we apply it to individuals, groups, or larger systems, but efforts over the last 50 years have yielded some general definitions that seem to hold up (Jahoda, 1958; Bennis, 1962).

The first important point to note is that systemic health can only be understood as a combination of four factors, each of which must be present to some degree: 1) a sense of identity, purpose, or mission; 2) a capacity on the part of the system to adapt and maintain itself in the face of internal and external changes; 3) a capacity to perceive and test reality; and 4) some degree of internal integration or alignment of the sub-systems that make up the total system.

In a sense these four conditions are a prerequisite for learning or can be thought of as the basic of "capacity to learn." When we apply the learning concept to any complex system we note a very important distinction that has been made by most theorists, the difference between single loop and double loop learning (Argyris and Schon, 1996), or what Senge (1990) has called the difference between adaptive and generative learning, or what others have called the difference between 1) maintenance and growth vs. 2) transformation.

When one applies this notion to complex organizations that are systems composed of many sub-systems each of which is composed of many individuals, one can see that the total organization's capacity to maintain itself and grow, to continue to act effectively in the face of changing circumstances, depends upon the creation of a set of shared assumptions that cut across the sub-systems and that survive in spite of changes in the individual membership of the sub-systems, i.e. the culture.

In other words the culture (CU) of the organization is both the consequence of the organization's prior experience and learning, and the basis for its continuing capacity to learn. What the organization can or cannot do will depend very much upon the actual content of its culture and how that culture aligns or integrates the various sub-cultures of its sub-systems.[4] And the long-range adaptability of the organization will depend upon its ability to perpetuate the core elements of its culture through socialization processes, while maintaining enough slack to allow for the evolution of new cultural assumptions to take into account new ideas.

What then do we mean by generative learning or transformation of a system? If the organization's "knowledge" both explicit and tacit ("know-how") is embedded in the culture and in the alignment of its sub-cultures, then it follows that transformation is tantamount to a change in the culture itself--a change in the organization's sense of identity, its goals, its core values, its primary ways of working, and so on (Schein, 1985, 1992).[5]

Cultural assumptions provide stability and meaning to our daily life. They structure our perceptions and thoughts, and they tell us how to evaluate and feel about things. It follows, therefore, that if some of those assumptions need to change because they are out of line with new data about the external or internal environment, such change will be preceded by a period of anxiety, and that anxiety will produce denial and various other kinds of defensive resistance to change. But this resistance to change is normal and must be sensitively dealt with.

---

[4] This view of the learning organization has been very well described and argued by Cook and Yanow (1993). Their description of how several organizations have maintained themselves and learned illustrates cultural dynamics and shows how one can think of the whole organization as the learning unit.

[5] In my culture book I emphasize both the capacity to deal with external problems and the capacity to integrate internally. Changes in the culture can be of either kind (Schein, 1992, Ch. 15-17).

In another context I have argued that the management of this kind of "normal" resistance to change involves at the individual level the management of two kinds of anxiety: 1) survival anxiety or the anxiety that if I do not change I will no longer be able to get along, or keep my job, or maintain my sense of identity and competence; 2) learning anxiety or the anxiety that if I do attempt to learn or change I will lose my identity and sense of competence.[6]

For learning to occur at the individual level, then, survival anxiety must be higher than learning anxiety, and this can be achieved by one of two ways. The leader as change agent can 1) escalate the survival anxiety which, however, risks even more denial and defensiveness and ultimately rejection of the leader, or the leader can 2) lower the learning anxiety on the assumption that there is already sufficient survival anxiety in the system, or 3) the leader can do both at once.

These are difficult change management issues and require a deeper understanding of what is involved in large complex systems change. Let us next try to shed some light on these learning and change processes in the LO by analyzing several puzzles that the clinical observer will become aware of.

4. Puzzle No. 1: Why do sub-system transformations rarely diffuse to the main system? Why does culture change in one part of the organization not diffuse to other parts of the organization's culture?

Any department or group within the organization operates by the same systems dynamics as the total organization. One of the most fundamental of those dynamics is the avoidance of entropy, that is, to hold the system together to fulfill its functions in the face of entropic forces on the part of the sub-systems within it. What is locally rational for a sub-system is not necessarily aligned with the

---

6 See Schein (1993) for an explication of these concepts.

goals of the larger system so there will always be disintegrative forces operating that must be managed by the larger system.

Given this dynamic, if a fundamental change occurs in one sub-system, e.g. a production unit discovers that it can be much more effective by having employees manage themselves, such a change will threaten the equilibrium in all of the neighboring systems. To avoid the anxiety and possible upsetting of their equilibria, the neighboring systems will defend themselves against the implications of the change.

To complicate matters, the source of stability for the sub-system cultures is not necessarily within the total organization. Some of the sub-cultures have their reference base in the occupational community from which their members have come. The professional salesperson may identify with salespeople worldwide to a greater degree than with the sales organization of his or her immediate employer. And the same is potentially true for each of the functional units of an organization.

If then the production organization discovers that self-managed teams using group incentive systems are more effective, this does not necessarily impress the sales organization whose reference group is deeply embedded in the assumption of individual competition and individual incentive systems. This line of thinking reveals the operation of three particular sub-cultures that must be taken more seriously if we are to understand the dynamics of the LO (See Chart 4).

1) <u>The "operator" culture, the "line"</u>

Every organization has various sub-systems whose function it is to deliver the products or services that derive from the organization's basic mission or primary task. These sub-systems develop their own cultures and it is those cultures that often become the primary target of organizational transformation efforts.

In most complex organizations the operators have learned that the world is systemically inter-connected and that it takes cooperation and teamwork to increase effectiveness. The operator culture takes it for granted that people make the difference and are the organization's ultimate asset. When we see production units that are dysfunctional it is usually because these insights are used to defeat management goals, i.e. that operators use their teamwork skills to subvert and defeat management rather than work on its behalf.

It is this culture that is typically the target of ODC and other change efforts such as total quality and re-engineering. But paradoxically some of the most dramatic changes in this culture do not diffuse to other parts of the organization or up the hierarchy. To understand this lack of diffusion we must consider two other powerful cultures at work in organizations.

2) The "engineering" culture, the technocrats and designers

In every organization there will be one or more groups whose job is to design the various processes by which the organization delivers its products and services, and by which it maintains itself. Thus we have engineers or designers of production processes, sales processes, financial processes, and so on. The members of these groups have received their education outside the organization and they identify themselves on a global basis with their professional reference groups to a greater extent than with their colleagues inside the organization.

If we examine the essence of their culture we observe that its primary assumption is that technical elegance and simplicity of solutions is a primary value and that solutions must be efficient and error free. Since human are the most common source of errors, the best solutions should be free of humans altogether. I remember vividly the two engineers sitting in front of me on a flight to Seattle pointing out to each other as we were landing how redundant and

expensive the cockpit crew was since the plane could be landed perfectly well by computer.

What I have observed in a number of organizations is that when the operators begin to tout more teamwork training and more support for teamwork, the "engineers" propose instead to develop technical solutions for the problems that the operator team is trying to address. We find then two sub-cultures that are not aligned and that, in fact, speak different languages, have different values, and are oriented toward totally different goals. Furthermore, we find that the ODC and LO oriented change agents tend to side with the operators and label the engineers as not being humanistic enough, forgetting that it is the engineering community that is, in a larger sense, the engine of major innovation in most industries.

Instead of figuring out how to increase mutual understanding between engineers and operators through creating real dialogues[7] between them, we all too often call for the "humanization" of a community whose core assumptions state that humans are the source of error, noise, and messiness in operations. But these two cultures are not the whole story.

3) <u>The CEO culture</u>

Organizational survival and growth usually boils down in the end to an economic issue, and the custodian of that issue is ultimately the CEO of the organization. CEO's the world over live in a financial environment in which their attention is focused primarily on the financial well being of their organization. The capital structures, the financial markets, and the concerns of the stockholders all force attention to financial matters.

One exception to this focus can be observed in founders of organizations who hold an ownership position or in CEO's whose

---

[7] I am using the concept of "Dialogue" proposed by Bohm and articulated by Isaacs (1993).

power base is in family or personal ownership rather than their Board of Directors.[8] But CEO's who are accountable to their boards are likely to have learned from their own experience and from fellow CEO's that they alone are accountable, that they cannot trust information coming up through the system, that both the operator and engineering cultures are too indifferent to costs and must therefore be controlled financially, and that people are a cost rather than an asset. In this sense they collude with the engineers in preferring to run their operations with the smallest number of people possible.

The impact of the CEO culture is that if some of the requirements for enhancing learning or improving effectiveness increase costs or require some time off from daily operations they will be refused on financial grounds. I remember vividly the reaction of a group of CEO's to the proposition that for organizations to learn they have to create some "slack" to allow people to learn new skills. In today's economic environment, argued the CEO's, one must be lean and mean, and the very idea of "slack" is unthinkable. Yet learning is undermined by that very attitude.[9]

Here again I observe the ODC and OL communities calling for the "humanization" of CEO's instead of acknowledging that this powerful global cultural community is far too set in its ways to really pay attention to such a call. What we need is better understanding of the CEO culture and the ability to create a real Dialogue between them, the engineers and the operators. Each of these cultures has a valid set of assumptions from their own point of view and we as change agents and agents of learning must help each of these communities to understand themselves and each other so that they can become better aligned in any given organization.

---

[8] This argument is developed in a paper comparing founders with general managers (Schein, 1983).

[9] I have pointed out in another paper how various learning projects have been defeated by the unwillingness to provide a practice field and time off for learning to occur (Schein, 1997, in press).

In summary, one major reason why innovations in the operator culture do not diffuse is because the engineering and CEO culture are fundamentally oriented toward other kinds of concerns--technological elegance and financial viability.

5. Puzzle No. 2: Why don't great ideas for organizational improvement such as "empowerment," "teamwork," and "self-managed groups" catch on faster in managerial practice?

Two new ideas are involved in answering this question. First, we must take more seriously the growing evidence that learning is ultimately a social process that occurs in a community of practice.[10] Ideas are not enough. Until those ideas are embedded in the daily routines of practitioners they have not really been "learned." And the evidence is mounting that this final embedding occurs best "on the job" so to speak and in the actual social context in which work is done. In a sense, one can say that apprenticeship is THE fundamental way of learning, and mentoring rather than being an option in career development may be a necessity.

This argument applies in particular to transformational learning where the new practices are based on new cultural assumptions. It is only in the group context of working with fellow learners that one can create enough psychological safety to permit the learners to overcome their learning anxiety. And it is only in this group context that coaches can show learners the new practices that are called for by the new cultural assumptions.

Consider, for example, how the new idea of self-managed groups would translate into daily practices. Not only would the members of the work group have to learn to trust each other and to communicate more openly with each other, but they would have to give up notions of individual competitiveness and rewards in favor

[10] This conclusion is based primarily on recent work by the Institute for Research on Learning in Palo Alto and the work of Brown and Duguid (1991) and Cook and Yanow (1993).

of much vaguer concepts of team accountability and shared rewards. Managers then become resources, consultants, and coaches and the managerial job itself may come to rotate among group members according to who has what knowledge and skill. Describing this hardly tells one how to do it, especially if one has grown up in an individualistic competitive culture.

The second part of the answer has to do with conceiving organizational learning as a three stage process. In the MIT Organizational Learning Center Senge has put considerable emphasis on creating a consortium of representatives of the sponsoring companies. I have observed that some of the critical learning stages occur in this consortium, as symbolized by the following event. During one of the quarterly meetings of the representatives one of them asked another whether they would be willing to come into their company and do a workshop on systems dynamics. What struck me about this was the fact that they did not ask anyone from MIT or from any consulting company who are in this business, and that made me realize that with most great ideas some version of the following three step process takes place.

Step 1. The idea is articulated by academics. Usually such ideas are not invented in academia but are the abstracting from observed data about new practices in organizations of the essence of those new practices. For example, McGregor's Theory X and Theory Y were descriptions of and abstractions from the observed practices of more and less effective managers.[11] Academics write about and lecture about these ideas and a small number of practitioners catch on or recognize what is being talked about. But most of them misunderstand or misapply the ideas until they are ready to embed them in their organizations.

Step 2. The commercial consulting community recognizes the potential of the idea and, if they sense practitioner interest, they

---

[11] McGregor, D. M. (1961) The Human Side of Enterprise. N.Y.: McGraw-Hill.

develop educational and training programs to embed the ideas in their client organizations. But in the process of commercializing the ideas they tend to standardize them which makes them to varying degrees inapplicable to a particular organization's circumstances.

The programs are purchased by management, mandated for their organizations and applied in a routinized fashion which leads to some learning but no real embedding because of the irrelevance of the ideas to the local situation. Furthermore, management becomes dependent on the consulting organization and abdicates its responsibility for determining the actual relevance of the ideas to their organizational situation. That attitude leads the learners in the operator culture to treat the new ideas and implied practices as the latest "management fad" rather than something fundamentally important.

If the operator culture recognizes the need for real change in their operations, if they recognize that they need to operate from fundamentally different assumptions to remain effective, they will attempt to learn from the consultant programs but will discover that the consultants do not have enough knowledge of the local situation to be genuinely helpful in translating the ideas into new practices. It is at that point that step 3 or the creation of communities of practice comes into play.

Step 3. A learning consortium emerges. The learners in the local community of practice recognize the need for new learning but must find teachers and coaches who can appreciate the nuances of their situation, yet who are not caught up in their local operator culture. For this purpose they must find others who are in a similar predicament yet who are outside their own organization.

The role of the academic and/or consultant could be to create and nurture such consortia but put the emphasis on creating processes that allow the members to learn from each other instead

of trying to teach the new practices directly. They could coach the members on how to be effective teachers and coaches. The emphasis for the "outsider" is to create learning processes and to function as process consultants (Schein, 1987) to the consortium and the community of practice.

In summary, if learning ultimately only occurs in a community of practice, and if transformational learning involves changing of some cultural assumptions, it must be mediated by a consortium of practitioners who provide to each other the support and insight that only a fellow practitioner could provide and, at the same, an outsider perspective that permits local cultural assumptions to be surfaced and examined.

6. Puzzle No. 3: Why does total organizational learning take so long?

Procter and Gamble started to transform their production systems more than 30 years ago and announced a few years back that the last of their unionized plants had finally adopted the new system, after some 20 years of change efforts. Turnaround managers who have gotten involved in major organizational transformations that involve new cultural assumptions talk in terms of 10 to 15 year programs. Why should these programs take so long?

To answer this question we must again go back to systems theory and note that even if the "executive system," the sub-system with all the formal power evolves new cultural assumptions, each of the sub-systems must go through its own learning process before the entire organization can be said to have learned. In fact, CEO's complain bitterly about how little power they actually have to create major change in their own organizations.

In many organizations one can see a complex scenario like the following: the CEO has a conversion experience about how to

run an organization involving more delegation, team work, self-managed groups, participation, open communications, horizontally linked networks, and the like. He or she discovers that neither his executive subordinates who are living out the CEO culture nor the designers and engineers in the organization have any genuine insight into the new ideas. In fact, both of these groups may regard the CEO as having gone off the deep end and will subvert the new ideas to the best of their ability.

How then should we conceive of the learning process in the LO? I propose that we go back to some old ideas about how systems cope.[12] Chart 5 summarizes what I called an adaptive coping cycle that applies to all kinds of systems and both kinds of learning, adaptive and transformational. The argument is that not only the total organization, but each sub-system within it, including each individual learner within a sub-system must go through this cycle before they can said to have learned, changed, or been transformed.

The steps in this cycle remind us that learning is a complex multi-stage process and that it can be undermined at any stage by one of the steps not being negotiated successfully. Or, to put it another way, each step highlights certain kinds of organizational pathologies that can arise, and for each of these pathologies one can also conceive of the various remedies that the ODC and OL practitioners can apply.

Step 1. Accurate sensing of changes in the external or internal environment.

Possible pathologies:

--Absence of sensing structures, overemphasis on either just external or just internal data

[12] These ideas were first propounded in my book Organizational Psychology (1965, 1970, 1980).

--Myopia or other distortions in the sensing process

--Perceptual defenses of various sorts that eliminate or distort data

--Different sensing structures, i.e. the various sub-cultures seeing and hearing different things.

Possible Remedies:

--Creating or enhancing formal sensing structures such as survey groups, planning departments, environmental scanning units, etc.

--Systematic internal canvassing of organizations that have environmental data such as sales, purchasing, distribution, marketing, ODC units, etc.

--Management Education Programs that expose especially the CEO culture to a broad range of data

--Therapeutic interventions to overcome perceptual defensive routines (Argyris & Schon, 1996)

--Dialogues at critical cultural interfaces

Step 2. Getting information to the right place where it can be acted upon.

Possible pathologies

--Relevant information remains in an irrelevant sub-system

--Lack of communication channels between sensing units and decision making units

--Distortion of information during transmission

--Information being used as a power chip rather than problem solving tool

Possible Remedies

--Creation of networks and information channels to make transmission possible

--Creation of a reward system that rewards accurate transmission, even of bad news, and punishes withholding, exaggerating, or distorting information in other ways

--Formal dialogues between decision makers and information gatherers that maximizes mutual understanding

Step 3. Digesting and drawing the correct conclusions from the information available

Possible pathologies

--Cognitive biases and distortions

--Short range and linear thinking instead of systems thinking

--Denial and other defensive routines

--Conflicts between operator, engineering, and CEO cultures

Possible Remedies

--Systematic training in systems thinking and decision making, especially simulation techniques

--Therapeutic interventions to overcome defenses

--Reward system that stimulate open dialogue and mutual exploration across sub-culture boundaries

--Formal reviews and parallel independent decision making procedures to avoid "group think" and other distortions based on social factors

Step 4. Making internal transformations without creating undesirable side effects

Possible pathologies

--Formalization and ritualization of structures that have worked in the past

--Reward and control systems that support old structures and inhibit innovation

--Cultural assumptions that are "obsolete," i.e. out of line with current realities based on steps 1, 2, and 3.

--Creation of new structures that are not aligned with the current culture or the organization's core competencies

--Creation of new structures that are too expensive to maintain overall economic viability

Possible Remedies

--Building new structures and routines around cultural "hybrids" who understand the old culture but bring in new elements

--Promoting cultural "deviants" or bringing in outsiders

--Creating parallel structures to design new processes and then import those into the total system[13]

--Designing new structures from a systemic point of view that analyzes consequences and side effects

5. Successfully exporting new products and services

Possible pathologies:

--Rigid routines and habits built on past successes

--Lack of structures or inappropriate structures for exporting new products or services

Possible remedies

--Destruction of the old groups that support the old routines and building of new groups on new assumptions

--Redesign of the reward system to support new behaviors and structures

6. Obtaining feedback on whether the new behavior is achieving the desired results--New sensing activity a la step 1.

Possible pathologies:

--Lack of formal structures to insure relevant feedback

--All the other pathologies listed under step 1

Possible Remedies:

[13] This process is described in detail in Bushe & Shani (1991) and Schein (1993).

--Recognition that coping in turbulent environments is a perpetual process requiring constant feedback

--Planning for feedback during the transformation process

--Structures for systematic post mortems, project reviews

--Creating a dynamic process and structure for "Learning to Plan and Planning to Learn"[14]

Summary and Implications of Adaptive Coping Cycle

Several implications derive from this form of analysis. First of all, it is clear that every stage has to be successfully negotiated before one can say that the organization has learned (L0). In ODC and OL we often take credit for sub-group or individual learning without even investigating whether or not the total organization has changed or learned.

Second, it should be clear that each stage or step has its own particular pathologies requiring its own particular remedies. In fact the broad range of ODC and OL techniques can usefully be sorted by their relevance to each step.[15]

Third, in complex systems composed of multiple inter-acting and inter-dependent sub-systems the overall learning process will take time because it must occur in each sub-system and must then be integrated in the total LO process.

Fourth, the CEO and engineering cultures will hamper the integration of learning within the organization because the CEO's will be disproportionately obsessed with just financial

---

[14] Michael, D. N. (1973) On learning to plan and planning to learn. San Francisco, CA.: Jossey Bass.

[15] Recent researches by Rashford & Coghlan (1994) on the need to consider different interventions at different organizational levels, and by DiBella et al (1996) on the need to diagnose organizational capability through multiple dimensions are steps in the right direction.

considerations and the engineers will be disproportionately obsessed with just technical solutions. Mechanisms will have to be designed to help CEO's and engineers to think more integratively about the health of the systems in which they function.

Fifth, because the sub-systems of the organization develop cultures of their own, transformational learning will always involve culture change. Processes of diagnosing and evolving culture are therefore central to any organizational learning processes.

In other words, the LO is a complex beast consisting of many systems whose separate learning and change efforts must be coordinated and integrated. It is time to accept the reality of this complexity and stop oversimplifying systemic learning processes by touting particular remedies like leadership, vision, re-engineering, total quality, customer focus, systems thinking, and the like. Ultimately what is new in this field is the recognition that transformational learning, however necessary it may be, will require patient and careful research before we can advocate any particular learning mechanisms of how to do it.

References

Argyris, C. & Schon, D. A. (1996) Organizational Learning II, Reading, MA.: Addison-Wesley.

Bennis, W. G. (1962). Toward a 'truly" scientific management: the concept of organizational health. General Systems Yearbook, 7, 269-82.

Brown, J. S. & Duguid, P. Organizational learning and communities of practice. Organization Science, 1991, 2, pp. 40-57.

Cook, S. D. N. & Yanow, D. (1993) Culture and organizational learning. J. of Management Inquiry, Vol. 2, No. 4, 373-390.

DiBella, A. J., Nevis, E. S. & Gould, J. M. (1996) Understanding organizational learning capability. Journal of Management Studies, 33, No. 3, 361-379.

Isaacs, W. N. (1993) Taking flight: Dialogue, collective thinking, and organizational learning. Organizational Dynamics, Winter, 24-39.

Jahoda, M. (1958). Current concepts of positive mental health. N.Y.: Basic Books.

McGregor, D. M. (1961) The human side of enterprise. N.Y.: McGraw-Hill.

Michael, D. N. (1973) On learning to plan and planning to learn. San Francisco, CA.: Jossey Bass.

Rashford, N. S. & Coghlan, D. (1994) The dynamics of organizational levels. Reading, MA: Addison-Wesley.

Roth, G. (1996) Learning Histories: Using documentation to assess and facilitate organizational learning. MIT Center for Organizational Learning.

Schein, E. H. (1965) Organizational psychology. Englewood Cliffs, N.J.: Prentice-Hall. (2d Ed., 1970; 3d Ed., 1980).

Schein, E. H. (1983) The role of the founder in creating organizational culture. Organizational Dynamics, Summer, 13-28.

Schein, E. H. (1987) The clinical perspective in fieldwork. Newbury Park, CA.: Sage.

Schein, E. H. (1987) Process Consultation, Vol. 2. Reading, MA: Addison-Wesley.

Schein, E. H. (1992) Organizational culture and leadership. 2d. Ed. San Francisco, CA.: Jossey Bass.

Schein, E. H. (1993) How Can Organizations Learn Faster? The Challenge of Entering the Green Room. Sloan Management Review, 34, 85-92.

Schein, E. H. (1997)..The three cultures of management: Implications for Organizational Learning. Sloan Management Review, in press.

Senge, P. (1990) The fifth discipline. N.Y.: Doubleday, 1990.

CHART 1

THE CLINICAL PERSPECTIVE ON ORG. CHANGE AND LEARNING

1) EMPHASIS ON IN-DEPTH OBSERVATION OF CRUCIAL CASES OF LEARNING/CHANGE

2) EMPHASIS ON STUDYING THE EFFECTS OF INTERVENTIONS--"YOU CAN'T UNDERSTAND A SYSTEM UNTIL YOU HAVE TRIED TO CHANGE IT"

3) FOCUS ON PATHOLOGY AND POST-MORTEMS AS A WAY OF BUILDING A THEORY OF HEALTH

4) FOCUS ON PUZZLES AND ANOMALIES THAT ARE DIFFICULT TO EXPLAIN WITH CURRENT THEORY

5) FOCUS ON BUILDING THEORY AND EMPIRICAL KNOWLEDGE THROUGH DEVELOPING CONCEPTS THAT CAPTURE THE REAL DYNAMICS OF SYSTEMS

6) FOCUS ON CHARACTERISTICS OF SYSTEMS AND SYSTEMIC DYNAMICS

CHART 2

WHAT IS SYSTEMIC HEALTH?

--SENSE OF IDENTITY AND PURPOSE

--CAPACITY TO ADAPT TO CHANGING INTERNAL AND EXTERNAL CIRCUMSTANCES

--CAPACITY TO PERCEIVE AND TEST REALITY

--INTERNAL INTEGRATION OR ALIGNMENT OF SUBSYSTEMS

CHART 3

SYSTEMIC LEARNING CAPACITY

TYPE 1: MAINTENANCE AND GROWTH--THE CAPACITY TO CONTINUE TO ACT EFFECTIVELY IN THE FACE OF CHANGING CIRCUMSTANCES

--IN COMPLEX ORGANIZATIONS THAT MEANS CREATING AND MAINTAINING A CULTURE, A SET OF SHARED TACIT ASSUMPTIONS THAT ARE PERPETUATED EVEN WHEN MEMBERS ARE REPLACED

TYPE 2: TRANSFORMATION--THE CAPACITY TO CHANGE FUNDAMENTAL ELEMENTS OF IDENTITY AND GOALS, ADOPT DIFFERENT BASIC ASSUMPTIONS AND SHARE THEM

--IN COMPLEX ORGANIZATIONS THAT MEANS CULTURE CHANGE THROUGH EVOLUTION, MANAGED CHANGE, OR REVOLUTION

--TRANSFORMATION IS FUNDAMENTALLY DIFFERENT FROM TYPE 1 BECAUSE IT INVOLVES UNLEARNING AS WELL AS NEW LEARNING

CHART 4

THREE CULTURES OF MANAGEMENT

1. OPERATOR CULTURE, THE "LINE"

--ORIENTED TOWARD MAKING THE SYSTEM WORK, PEOPLE ORIENTED, LOCAL, BASED ON CORE TECHNOLOGY

2. THE ENGINEERING COMMUNITY CULTURE (GLOBAL)

--ORIENTED TOWARD TECHNICAL ELEGANCE OF DESIGN, ABSTRACT AND EFFICIENT SOLUTIONS, PEOPLE ARE A SOURCE OF NOISE

3. CEO CULTURE (GLOBAL)

--ORIENTED TOWARD THE FINANCIAL GROWTH AND SURVIVAL OF THE ORG.; PEOPLE ARE A COST TO BE MINIMIZED; MUST MANAGE IMPERSONALLY THROUGH SYSTEMS AND ROUTINES

CHART 5

THE ADAPTIVE-COPING CYCLE IN COMPLEX SYSTEMS[16]

1. SENSE CHANGE IN THE EXTERNAL OR INTERNAL ENVIRONMENT

2. GET THE INFO. TO THE RIGHT PLACE WHERE IT CAN BE PROCESSED AND ACTED UPON

3. DIGEST THE INFO AND DRAW THE RIGHT CONCLUSIONS

4. MAKE THE NECESSARY INTERNAL TRANSFORMATIONS WITHOUT UNDESIRABLE SIDE EFFECTS

5. DEVELOP NEW ACTIONS

6. OBTAIN FEEDBACK ON THE NEW ACTIONS--NEW SENSING CYCLE

---

[16] --Schein, E. H. (1965) Organizational Psychology. Englewood Cliffs, N.J.: Prentice-Hall. (2d Ed., 1970; 3d Ed., 1980).