Building Learning Organizations:
How Educational Leaders' Roles Must Change.

The Gaian Group

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> With the storehouse of skills and knowledge contained in its millions of unemployed, and with the even more appalling under use, misuse, and abuse of skills and knowledge in the army of employed people in all ranks in all industries, the United Sates may be today the most underdeveloped nation in the world.[1]

Why We Are Where We Are

The late 1980's and early 1990's have been host to an era of tremendous change. Pressures from a global marketplace, moves towards Total Quality Management, and a growing awareness of the decline in the United States' position in the world have forced changes on an unwilling corporate world. It seems clear that survival is predicated upon changing successfully. The traditional management styles have been challenged and a call has been issued for a new type of leader to facilitate these changes. This new leader will play a very different role in a very different organization of the future. Change will be continuous in the new organizations and will be driven by learning from within the organization. The most successful organizations in the 1990s will be highly adaptive with members who think for themselves, identify their own problems, and create their own solutions. They will require their leaders

[1] W. E. Deming, Out of the Crisis (Cambridge: Massachusetts Institute of Technology, Center for Advanced Engineering Study, 1986), 6.

to be the best learners of all.[2] Leading these "learning organizations" will require a new set of skills.

The world is growing increasingly smaller with each leap in technology. The degree of interconnectedness grows with corporate mergers and international companies. "Benchmarking" and customer/supplier audits are making the inner workings of most companies well known. New technologies are disseminated worldwide in a matter of hours. There is a growing belief that in the near future the only competitive advantage an organization will have is its ability to learn faster than its competitors.[3] Leaders in these organizations will not "simply manage, direct, control, or guide the operations and affairs of the organization as managers do."[4] There will simply not be enough time for managers to delve into the degree of detail required to make these decisions accurately. There can be no more individuals learning for the organization. Instead, the leaders will "create meanings for people by amassing large amounts of information, making sense of it, integrating it into a meaningful vision of the future, and communicating the vision so people want to participate."[5]

Scientific Management and the Reductionist View Management

We are living in a world that is a product of the industrial revolution, or the Machine Age. Modern science and technology has given rise to an entire set of assumptions and techniques that have been designed out of a mechanical state of mind. There are three fundamental ideas that form the basis

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[2] "The U.S. Must Do as GM Has Done," Fortune (February 13, 1989), 71.

[3] Peter Senge, The Fifth Discipline (New York: Doubleday/Current, 1990), 4.

[4] D. Keith Denton and Barry L. Wisdom, "The Learning Organization Involves the Entire Work Force" Quality Progress, (December 1991), 70.

[5] Ibid.

of Machine Age thinking; reductionism, analysis, and mechanism.[6]

Reductionism is the belief that the whole can only be understood by studying the parts. This practice grew from the Renaissance period when scientists were looking for the elements of life. All of nature was reduced to the smallest identifiable component in an attempt to find the commonality of life, or the thing from which life emerges. We still use this method of inquiry. The natural extension of reductionism is analysis. This is the idea that complex problems can be solved by individual "sub solutions." When faced with a problem, the accepted method is to break it into smaller problems, then use problem-solving methods to arrive at individual solutions to each component. After fixing each problem, the overall problem should go away. Mechanism is the idea that all of nature responds to a basic principle of cause and effect. It is the combination of these ideas that built assembly lines and mechanized work that was once done by people.[7]

There were two fundamental beliefs that drove the Machine Age. First, God created the earth to serve his purpose. Second, Man was created in God's image. Therefore, in the image of God, man creates to serve his purpose. This is the basis for industrialization. Man creates machine to serve his purpose.

Men, in the form of boards of directors, create machines, in the form of organizations, which serve their purpose of profit, return to investors, and market share. The organization has no purpose in and of itself. It is like a hammer that has no purpose except in the hands of the builder. In this Machine Age context, people as a part of organizations have lost their individual purpose and have been

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[6] Russell L. Ackoff, "The Second Industrial Revolution" (April 20, 1972), 2-5.

[7] Ibid.

dehumanized.[8] "Our concept of the employment contract was that when you, as an individual, agreed to go to work for ... a corporation, in return for money received you agreed to withdraw the relevance of your personal purposes from consideration of the corporation."[9] In these traditional machine age organizations, "the top thinks and the local acts."[10]

Viewed from a context of manufacturing might and wealth produced, this system has worked well in our country. By building a system where work has been reduced to its smallest element and each element's purpose is optimized, the human element has almost been removed from manufacturing. Within this structure, labor is a cost to be controlled, and true to the idea of reductionism and analysis, methods have been developed that allow the lowest cost labor. Unfortunately, this often means moving the operation to an under-developed country, since low-cost labor is not readily available in this country and is not something that can be easily imported.

When viewed from a slightly different perspective, the system has not been successful. Many corporate mission statements of manufacturing companies show that adding value to their stock or maximizing the return to their investors is the nature of their business, not manufacturing. During the last decade, many U. S. corporations have maintained their goals for return on investment even though it meant closing facilities, laying off workers, and selling assets. By maintaining the immediate goal, they destroy their production capacity. It is an insidious cycle; in order to generate wealth, they destroy their means of generating wealth. Creating a product has become incidental to making of profit. Market

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[8] Ibid.

[9] Ibid, p. 21.

[10] Peter Senge, "The Leader's New Work: Building Learning Organizations" Sloan Management Review, 32: 7.

shares continue to be lost to foreign competitors because of the belief system. Most manufacturers have lost sight of the relationship between customers and suppliers and have forgotten the product that is purchased is not always the same one that the corporation has focused on producing.

To compound matters, we are in what some call the "second industrial revolution." This is a technological revolution, although not necessarily in products or manufacturing methods. Leaps in computer technology and communications technology have enabled us to automate work that has been done with the head instead of the hand. Each technical leap in technology makes the next leap easier to attain. This creates a system where the size of change is increasing and the interval between changes is decreasing. The result is a world full of change and chaos, where what worked yesterday may not work today.[11]

The Learning Organization Learning Organization

The organization that survives in the future will have to be able to change as quickly as the world around it. This will require much shorter reporting lines, faster communications, and clearer goals. It will also require a different type of leadership that uses a different set of beliefs, values, and tools. The first requirement of existing leadership is what Peter Senge calls "metanoia,"[12] meaning a total shift of mind. He describes it as an awakening, or enlightenment as to the organizations position in the world. Russell Ackoff describes this to be similar to the German *Weltanschauung*, or closely translated,

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[11] Ackoff, 16.

[12] Senge, The Fifth Discipline, 13.

"world view."[13] Leadership must begin to see organizations as systems or organisms rather than a collection of discreet parts.

Senge speaks of an organization as a mirror. If the leader breaks it into parts, then reassembles it, it will never give a true reflection.[14] This is the weakness of reductionism. Conventional leaders are taught to fragment organizations and work with the parts individually (problem-solving), and believe that the parts of organizations can truly standalone (often referred to as "sub optimization"). A common surprise to management is that previously solved problems tend to resurface repeatedly, regardless of the apparent quality of the solution. Management is an unending stream of seemingly unrelated problems arising in various parts of the organization, each on to be solved as it arises. A fundamental shift of mind is required to counter this approach. If you fragment an organization, then make each part work the best it can, the total of the parts will not work as effectively as possible.

Ackoff gives the example of building a car out of the best parts of all available makes and models. The best carburetor is from a Buick, the best differential is from a Ford, and the best distributor is from a Mercedes. When they are assembled, the result is a contraption that will not run because the parts do not fit together.[15] An example of this reasoning was the Edsel. An accumulation of all the best features in the industry resulted in the worst car in history.

The antithesis of sub optimization would be something akin to super optimization, or making the whole as effective as possible within a larger external framework. One of the fundamental assumptions

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[13] Ackoff, 1.

[14] Senge, The Fifth Discipline, 3.

[15] Ackoff, 7.

required is the belief that some of the parts of the externally effective organization will not perform as well as they could by themselves. Japanese automakers learned manufacturing from the Americans. Each assembly of the engine was designed without regard to the other assemblies that would be mounted in the same car. They found that they could design the engine as a whole, sub-assemblies and all, and get a lighter, more dependable engine that used less parts and was easier to service. However, none of the individual components, i.e. the air conditioner brackets, could function independently, as they could on their American counterparts. Their philosophy was that the air conditioner had no function outside the "organism" of the automobile, and therefore had no need for independent function. Strong, effective organizations require high degrees of interrelationship, however, high degrees of interrelationship build a stronger whole at expense of weaker components. This view of the organization as a whole requires the leader to use a different perspective, a systems perspective, that requires seeing the interrelationship of the parts and focusing on the long term, underlying forces for change.[16]

Creating a Learning Organization

Senge proposes that there are five elements required of leaders in order to create a learning organization. These are systems thinking, personal mastery, mental models, team learning, and shared vision. These disciplines are to be thought of as a web, not steps, and should be developed together. Systems' thinking is the cornerstone of the process. While they are treated separately, each of these disciplines is simply a way of focusing, or explaining the expected outcomes. There are ten systems archetypes identified that are used to explain organizational phenomenon. This is a different mental

[16] Senge, "The Leader's New Work: Building Learning Organizations," 15.

model that requires looking at problems as an indication of a larger whole.[17]

For the purpose of taking Senge's learning disciplines from a philosophical to a strategic level, take the hypothetical case of a chief administrator whose purpose in life has now become to create a learning organization. How can Senge's work be used to progress towards a learning organization?

The first step comes from the administrator, who must personally have a vision of what the "learning organization" is like.[18] This vision shows the organization learning together to generate the courses of action to be taken, seeing themselves as parts of a whole.

After having had the vision, the second step is to communicate it to the organization. This is a generative step with the ultimate outcome being a shared vision that permeates the entire organization. Senge compares individual vision to a photograph and shared vision to a hologram. If a photograph is divided in half, you get two different images. If you divide a hologram, you get two identical, although smaller, images. Every time the hologram is divided, you get smaller images of the original whole. The organization should look like this hologram. Each person should share the same picture of the organizational goals and purpose. This is shared vision. Each member is a co-creator and partner in the outcome. The basis of fostering shared vision is believing that the leader does not, or cannot, juxtapose this vision upon the organization. Using all the disciplines in concert to develop the vision together

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[17] Senge, The Fifth Discipline, 5-10.

[18] An aside from anthropology. The Native Americans believed that manhood began with vision. The youth left the tribe to go on a vision quest. He went to a place of seclusion and his days fasting, praying, and smoking. Eventually a vision of some sort occurred, after which the young man returned to the tribe and consulted the medicine man, who interpreted the vision. The young man then spent the rest of his life looking for the fulfillment of that vision. Leaders for the tribe were selected based in part on the strength and number of their visions.

creates it.[19]

The trap of vision is in failing to distinguish between detail complexity and dynamic complexity. Most administrators have high levels of knowledge about the inner working of their organization. Their vision immediately entails plans as to how various parts of the organization should function. This is a reduction pitfall, where the leader begins to focus on the details of the organization. It also virtually assures that the other members of the organization will not immediately "buy-in" or adopt the vision. Dynamic complexity is a function of systems thinking, where the leaders focus on the impact of the system over time, leveraging themselves against delays in the system.

The third step grows from creating shared vision and promoting systems thinking in the organization, as the members foster the creative tension necessary to change. Creative tension is a product of a vision of where you want to be pulling against a clear picture of current reality. Creative tension pulls the organization to change in some direction. The pressure is equally great to increase your current position as it is to lower your expectation (called "eroding goals").[20] Once creative tension is generated, one or the other will change. The goals will erode unless two things are done. First, the goal must be anchored through shared vision and a collective commitment to make it happen. It will not happen if only the leader wants it. Second, the "anchors" that bind the organization to its current position must be removed. This is done through systems thinking throughout the organization, focusing on the "whys" instead of the "who's", and deciding what things to release. The members of the organizations must see themselves as capable of determining their own reality by the things they do.[21]

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[19] Ibid, 212.

[20] Ibid, 152-53.

[21] Senge, "Building Learning Organizations," 35.

Although they have been presented as a step-wise process, the disciplines are only effective if they are developed in concert. Creating shared vision and creative tension should be viewed as the initial extrinsic indicator of organizational change. Personal mastery and team learning allow the visions to grow and change as the organization learns. Systems thinking are the fifth of the disciplines and tie them all together. "By enhancing each of the other disciplines, it continually reminds us that the whole can exceed the sum of its parts."[22]

Cultural Change Through Leadership

Senge offers an extensive framework for the disciplines required of a learning organization. The leader's responsibility is to practice these disciplines and encourage them throughout the organization. Thus the leader will become an agent of cultural change. It is also important to know how this culture is embedded into an organization so the leader can focus on the activities required to embed a new one.

Organizations are groups of individuals who share some common attribute (criteria for selection) and whose behaviors are governed by common rules, policies and structures (both implicit and explicit). As these individuals function within this framework, their behaviors, actions, and decisions are dictated by their assumptions and influenced by the structures in the form of "mental models."[23] The initial assumptions for an organization begin with the founder's values, which are cognitively transformed to beliefs. Through repeated interactions these beliefs become assumptions.[24] Senge calls this a

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[22] Senge, The Fifth Discipline, 12.
[23] Senge, The Fifth Discipline, 52-55.

[24] Schein, 15-16.

reinforcing system, where the assumptions dictate what the leaders measure and observe, the results of which strengthen the value and belief system.[25]

The leader must therefore intervene into the reinforcing system to inculcate the disciplines into the organizations mental models. This intervention is the embedding of culture. Schein lists 10 mechanisms for embedding culture, 5 primary and 5 secondary. They are as follows:

Primary Embedding Mechanisms

1. What leaders pay attention to, measure, and control.
2. Leaders reactions to critical incidents and organizational crises.
3. Deliberate role modeling, teaching, and coaching by leaders.
4. Criteria for allocation of rewards and status.
5. Criteria for recruitment, selection, promotion, retirement, and excommunication.[26]

Secondary Embedding Mechanisms Embedding Mechanisms

1. The organizations design and structure.
2. Organizational systems and procedures.
3. Design of physical space, facades, and buildings.
4. Stories, legends, myths, and parables about important events and people.
5. Formal statements of organizational philosophy, creeds, and charters.[27]

The leader can use the art and artifacts of the organization as visible means of building the learning

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[25] Senge, The Fifth Discipline, 42-45.

[26] Schein, 224-25.

[27] Ibid, 237.

disciplines.

It is crucial to the success of the endeavor to hear the message being sent by the visible structures of the organization. Team learning and proactive-ness will never be practiced if the rewards system promotes individuality and reactive-ness. Worse yet, the leader will be perceived as having a incongruent belief system by rewarding the things that need to be changed and ignoring the things that have changed. By focusing on the artifacts and their interrelations to culture, the leader can create an environment that automatically reinforces and supports a new belief system.

One of the most important exercises that the leader can use is that of planning. The leader must use this time to focus on the systemic issues and relationships of the organization and not on event fixations. It is during these times that the signals are sent repeatedly to the organization of values, goals, missions, and visions. By having the members "focus on issues in a certain way, leaders can get across their own view of how to look at problems."[28]

Dutch Royal Shell developed one method of this planning. In order to address and formalize manager's mental models, they adopted a system of scenario planning, during which they had to consider how they would manage under different alternative paths into the future.

> This offsets the tendency for managers to implicitly assume a single future. When groups of managers share a range of alternative futures in their mental models, they become more perceptive of changes in the business environment and more responsive to those changes.[29]

These were later shared throughout the organization as alternate strategies. The key to any planning tool is uncovering the fundamental assumptions that members of an organization use to address daily issues.

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[28] Schein, 226.

[29] Senge, The Fifth Discipline, 188.

"The ultimate content of the plan may not be as important as the learning that goes on during the planning process."[30] The organization must be able to learn and the leader able to teach in order to be successful. This is the essence of a learning organization.[31]

The planning sessions become a primary channel for practicing the five disciplines. By considering alternatives, the members learn to exercise the personal mastery required to uncover their own mental models. Focusing on the interrelationships and the systems involved, they can remove fear of having the "wrong" answer, and therefore begin to learn as a team. Using alternate futures clarifies both shared vision and current reality, maintaining the creative tension. Most of all, these sessions "enhance the capacity for innovation and creativity, of crafting strategy and designing policy and structure through assimilating new disciplines."[32]

Organizational Learning Disabilities

According to Senge, a team of managers with I.Q.'s above 120 can have a collective I.Q. of 63.[33] While the individuals seem to learn well enough by himself or herself, the team, or collective unit, has a learning disability. It is absolutely essential that these issues be addressed if the organization is to succeed. Chris Argyris states that the smartest people in organizations, or the ones who are expected to be the best learners, are usually the poorest learners.[34]

Most people see learning as problem solving, which most intelligent people do well. A team

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[30] Schein, 226.

[31] Denton and Wisdom, 69.

[32] Senge, The Fifth Discipline, 11.

[33] Ibid, 9.

learning disability usually has at its root a different problem, that of being able to examine one's own behaviors. There is a defensive reasoning process that enables people to mentally justify their behavior within the context of their organizational structure. Most people believe they are doing well and most problems are outside of their control. Each person has his own theory of action (mental model) that is used as a set of rules with which to determine daily interactions. Argyris says the problem is that most peoples "espoused theory" is different than their "theory-in-use." Even when they try to improve their actions, they continue to act in ways that make improvement impossible.[35]

Personal mastery is the discipline required to unearth these differences. Using systems thinking provides a different perspective that allows looking at your own actions as a part of a system as opposed to being detached. Senge says that most of our organizational learning disabilities come from event fixation, or describing the world in terms of the events that have occurred. Reality can be viewed at "three distinct levels: events (reactive), patterns of behavior (responsive), and systemic structure (generative)."[36] By seeing the world in cause and effect types of relationships (events), the people defensively remove themselves as part of the problem.

As a leader, one of the most important changes to the organization is to remove the fear often associated with learning. In order to honestly express opinions and assumptions, people must feel secure in their environment. Without this security, the members of the organization will mask their

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[34] Chris Argyris, "Teaching Smart People How to Learn," Harvard Business Review (1991), 99.

[35] Ibid, 100.

[36] Senge, "The Leader's New Work: Building Learning Organizations," 12.

feelings and will not risk having the "wrong" answer.[37]

Defensive reasoning can become a boon to team learning by recognizing when learning is *not* occurring. One of the most important skills of team learning can be the ability to recognize when learning is *not* taking place, or when people are *not* reflecting on their assumptions, and especially when people are *not* exposing their own thinking to collective inquiry. Strong defensive routines typically indicate especially difficult and important issues. The ability to recognize when these issues are *not* being discussed is essential to develop.[38]

Transition to the New World to the New World

Moving from an organization driven by scientific management and a reduction perspective to a high performance learning organization is difficult at best for all those involved. An essential part of the process is managing the transition. An interesting model is one of history's greatest and best-known change agents - Moses.[39]

Transitions are broken into three parts. First, letting go of the things that were appropriate to the old world. Second, transitioning the psychological wilderness between the old world and the new world. Third, beginning anew, with the beliefs and attitudes that fit the new world.[40]

Moses exemplified all the elements of change with a model of how to deal with them. He

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[37] Deming, 59-61.

[38] Ibid, 256.

[39] William Bridges, "Getting Them Through the Wilderness: A Leader's Guide to Transition," New Management, 50.

[40] Ibid.

created a vision of the Promised Land and a clear picture of the reality they faced in Egypt. This creative tension caused the people to share the desire to change. He protected the people from the plagues that beset the country as a result of the unrest. He led the people through the wilderness, establishing temporary structures and using the world's first OD consultant, Jethro, to manage the transition. "Moses is a valuable example of a leader who could not only break the bondage of the past and convey the vision of a future, but also get the people through the wilderness that intervened."[41]

Today's leader will not be as successful as Moses in the area of summoning divine intervention but will face many of the same challenges. The leader will be building an organization that can carry itself through to a new world with new ways of doing things through a desire to change and learning about themselves. It will be a demanding process that not all will be able to accomplish.

Human beings are learning machines from birth. The intrinsic joy of learning is innate but does not seem to appear in organizations. Through many years, structures and fears have been built that effectively shut down this desire while people are operating within the confines of our structures. Learning has been measured exclusively in terms of organizational throughput in many organizations.[42] In the future, work must be seen as a "set of interrelated issues or questions presented simultaneously to the system by its environment."[43] Such change will require addressing old beliefs and deep-seated fears of failure.

What will it take to change? To put it bluntly, the shift will not occur if it is not within us.

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[41] Ibid, 55.

[42] Linda Argote and Dennis Epple, "Learning Curves in Manufacturing," Science (1991), 924.

[43] James C. Taylor, "An Action Basis of Social Theory Looking at the Product of our Work: New Paradigm for Designing Effective Organizations" (Ottowa: 1989), 15.

It cannot be faked. It cannot be achieved by public declarations. If at some basic level, we do not genuinely value and truly desire to live life as learners, it will not happen. My experience is that it can only be caused by small groups of thoughtful leaders who truly desire to build an organization where people are committed to a larger purpose and to thinking for themselves. Such thoughtful groups then must be willing to become models of continually learning, with all the vulnerability and uncertainty that implies. They become lead users of new learning tools and approaches.[44]

[44] Senge, "Building Learning Organizations," 37.

Appendix A

Problems of External Adaptation and Survival of External Adaptation and Survival

1. Mission and Strategy - Obtaining a shared understanding of core mission, primary task, manifest and latent functions.
2. Goals - Developing consensus on goals, as derived from the core mission.
3. Means - Developing consensus on the means to be used to attain the goal, such as the organization structured, division of labor, reward system, and authority system.
4. Measurement - Developing consensus on the criteria to be used in measuring how well the group is doing in fulfilling its goals, such as the information and control system.
5. Correction - Developing consensus on the appropriate remedial or repair strategies to be used if goals are not being met.[45]

The Problems of Internal Integration Problems of Internal Integration

1. Common Language and Conceptual Categories - If members cannot communicate with and understand each other, a group is impossible by definition.
2. Group boundaries and Criteria for Inclusion and Exclusion - One of the most important areas of culture is the shared consensus on who is in and who is out and by what criteria one determines membership.

[45] Edgar Schein, Organizational Culture and Leadership (San Francisco, Jossey-Bass, 1985), 52.

3. Power and Status - Every organization must work out its pecking order; its criteria and rules for how one gets, maintains, and loses power; consensus on this area is crucial to help members manage feelings of aggression.

4. Intimacy, Friendship, and Love - Every organization must work out its rules of the game for peer relationships, for relationships between the sexes, and for the manner in which openness and intimacy are to be handled in the context of managing the organizations tasks.

5. Rewards and Punishment - Every group must know what its heroic and sinful behaviors are; what gets rewarded with property, status, and power; and what gets punished in the form of withdrawal of the rewards, and ultimately excommunication.

6. Ideology and Religion - Every organization, like every society, faces unexplainable and inexplicable events, which must be given meaning so that members can respond to them and avoid the anxiety of dealing with the unexplainable and uncontrollable.[46]

[46] Edgar Schein, Organizational Culture and Leadership (San Francisco, Jossey-Bass, 1985), 66.

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