

Learning organizations and quadruple loops of feedback

Part II. Implementation

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ABSTRACT

Corporate implementation of multiple loops of feedback are discussed. Quadruple loops of feedback are compared to the Competing Values Framework. Eighteen characteristics are described that differentiate a Learning Organization from a traditional company. Seven learning strategies are offered for implementing improved learning at the organizational level, not just the individual level. The conclusion is that the Learning Organization is not merely a teaching tool, it is a new way of organizing a company with implications for changes in management, leadership, quality assurance, accounting, marketing, and all the other departments.

KEYWORDS

Learning organization, management, leadership, feedback, self managed teams.

RESUMEN

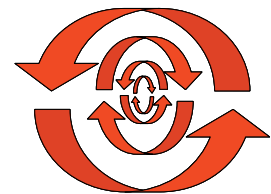
Se discuten los diferentes aspectos involucrados en la implementación corporativa de múltiples niveles de retroalimentación. El esquema de cuatro niveles de retroalimentación se compara con el marco de valores que les competen. Se describen 18 características que diferencian a las organizaciones en aprendizaje de la compañías tradicionales. Se presentan 7 estrategias de aprendizaje para ser implementadas tanto a nivel organizacional como a nivel individual. Se concluye que el concepto de organizaciones en aprendizaje no es meramente una herramienta educativa, sino que es una nueva forma de organizar una empresa con implicantes en lo administrativo, el liderazgo, el aseguramiento de calidad, en los aspectos contables, en el mercadeo y en todos los departamentos.

PALABRAS CLAVE

Organización en aprendizaje, administración, liderazgo, retroalimentación, equipos autoadministrados.

THE LEARNING ORGANIZATION: LEVELS AND COMPETING VALUES

Implementation of the Learning Organization puts the theoretical model of quadruple-loops of feedback into the context of the real world. The Learning Organization is not a stand-alone solution and needs to be integrated with other management models, such as Total Quality Management, distributed leadership,



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re-engineering, diversity theory, knowledge management, and corporate social responsibility. What the Learning Organization model says is that insufficient learning leaves us unable to keep up with change, and the traditional company is not organized for enhanced learning.

One factor for implementation is that in the real world an organization struggles among competing values. Belasen describes the competing values framework for the Learning Organization, which can be applied as a context for the four levels of feedback described in Part I of this article.¹ Organizational values compete because some effort is focused externally on markets, while other effort is focused internally on people and systems. Another axis of opposing values is centralized management efforts that are in conflict with decentralized management. They produce different points of view and different standards of competency.

First Level

The Learning Organization at the first level of single-loop is still able to perform well under certain conditions: stable markets and limited competition. Here the company can have a vertical organizational structure with expertise solely at the top and implementation achieved by individual subordinates learning to take orders down through many layers of management. Standard operating procedures still function in this environment, and centralized management is combined with an internal focus on social and technical systems. Belasen has applied the Competing Values Framework (CVF), shown in figures 1 and 2, to the Learning Organization; the CVF conceptualizes the challenges to management in terms of the need to balance between opposites on two axes: internal/external and centralized/decentralized.² Single-loop feedback is a level of learning adequate for internal processes that are

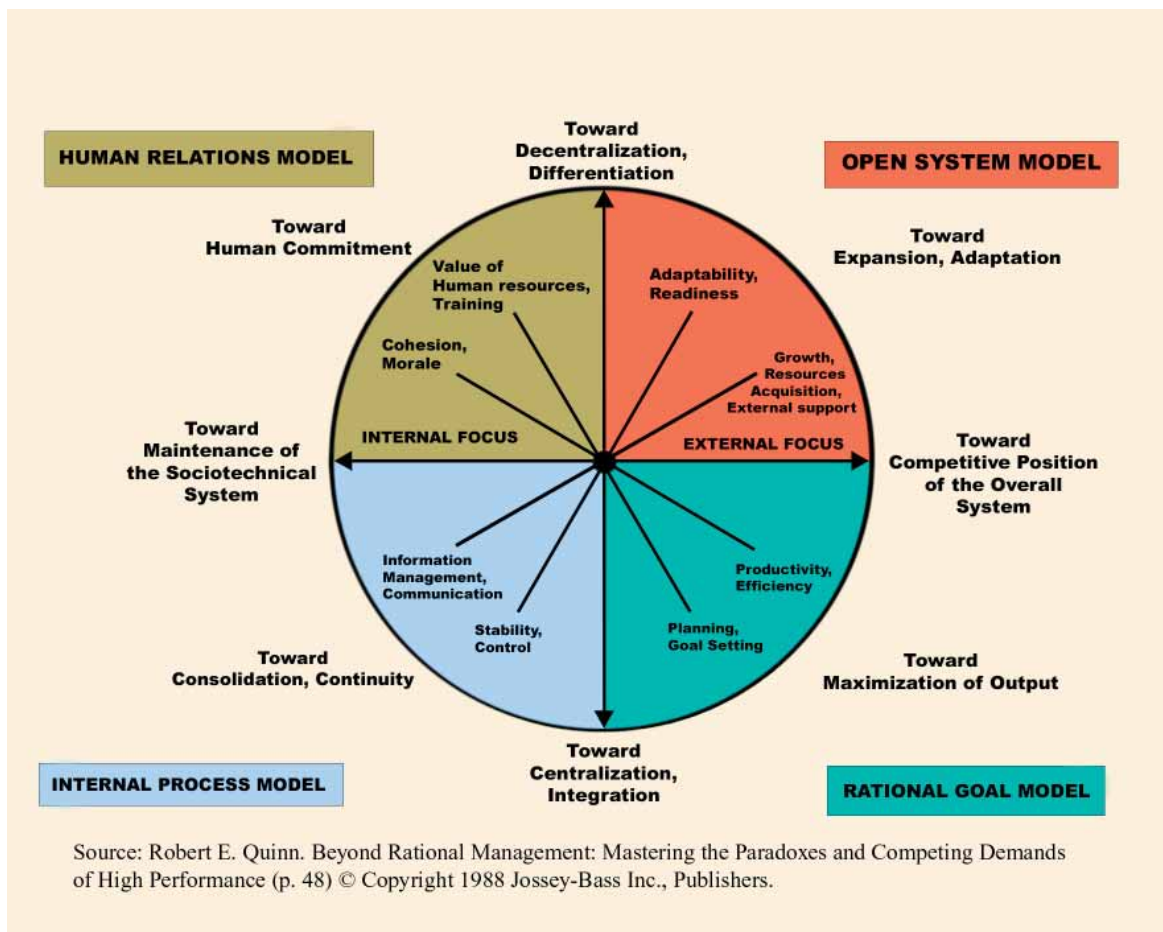


Fig. 1. Competing values framework: Effectiveness criteria.

centralized (Figure 1, lower-left quadrant), where the criteria for effectiveness are only the ability to manage information and the ability to maintain stability as well as impose control.

The Competing Values Framework shows that internal processes that are centralized will tend towards consolidation:

Internal Process Model towards Consolidation, Continuity through centralization and sociotechnical systems:

Effectiveness Criteria (Figure 1)

- Stability
- Information Management

Managerial Competencies (Figure 2)

- Coordinator
- Monitor of Performance

Second Level

At the second level of double-loop feedback the Learning Organization is able to be more flexible and change in the face of new requirements. Here in the CVF, centralization is still used but it is focused more on the external requirements of maintaining a competitive position in a market:

Rational Goal Model, Towards Maximization of Output through centralization and competitive position

Effectiveness Criteria (Figure 1)

- Productivity, efficiency
- Planning, Goal Setting

Managerial Competencies (Figure 2)

- Producer, time management
- Director, Planning

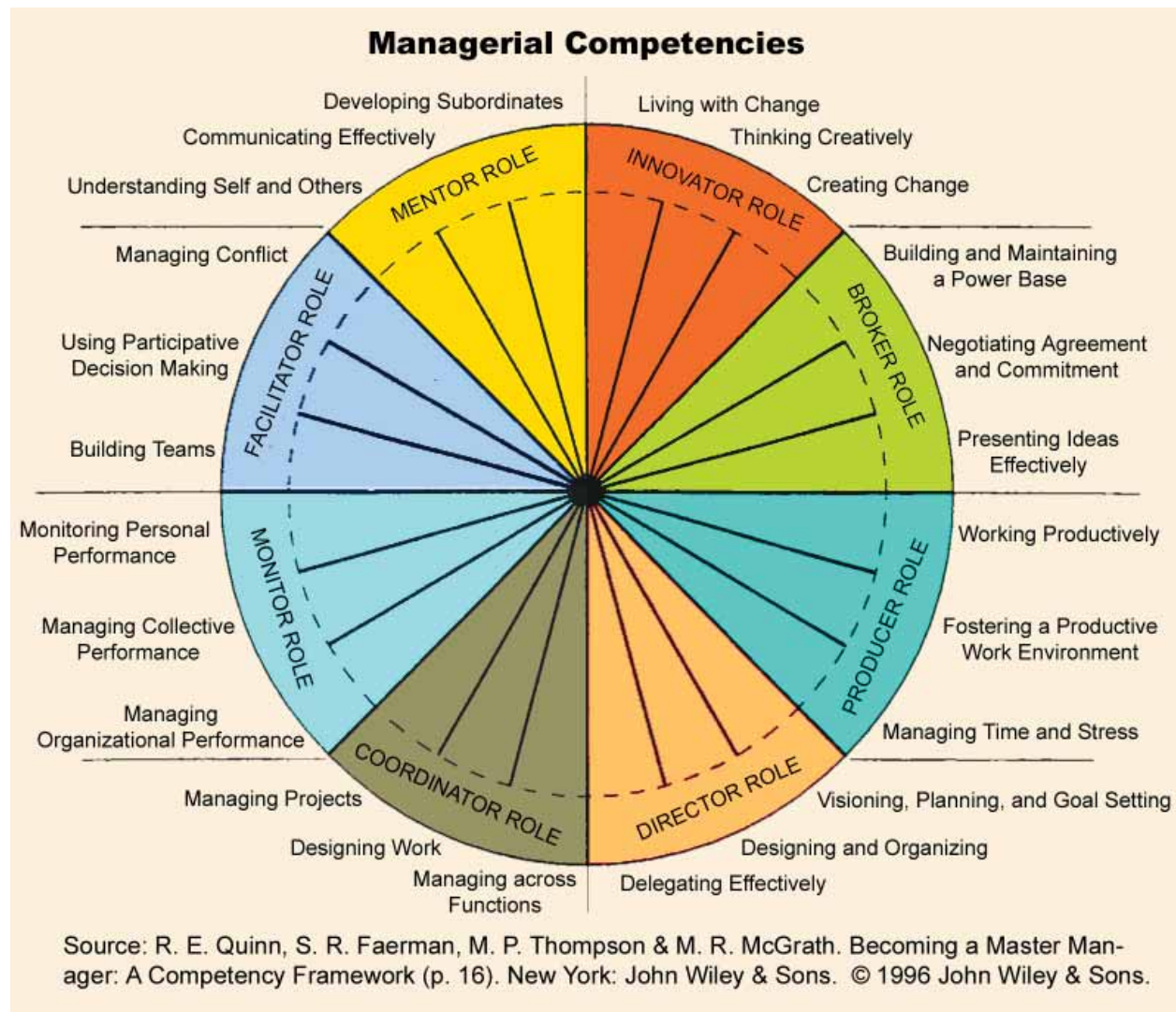


Fig. 2. Competing values framework: Managerial competencies.

The ability to identify and change goals quickly now requires fewer levels of management and considerable teamwork in the horizontal management system. The shift from top-down central control to more horizontal management can be led by a director who sees the benefits of smaller business units in which to centralize the work. Double-loop feedback means learning through re-evaluation of the goals accepted in single-loop feedback. If the business conditions require faster response, the new goals may be set because the pressures of the business environment demand a more distributed leadership to meet the productivity required. For example, Alan Belasen emphasized this transformation in description of what happened at Asea Brown Boveri (ABB) when the former CEO, Percy Barnevik....

...slashed administrative staff by up to 90 percent. Such radical restructuring did not come without protests from unions and governments. ...the Zurich headquarters staff was slashed by 95 percent—from four thousand to two hundred people! Peripheral businesses were dropped, five thousand profit centers were created, and seven layers of management were reduced to four. Finally, he restructured the entire organization creating thirteen hundred companies, some of which had a few as ten employees.³

Implementation of double-loop feedback is the natural condition of a start-up company by entrepreneurs, since the goals are in the process of being formulated. Double-loop feedback becomes more noticeable in practice when an existing organization has established goals that need to be challenged. Changes in goals require rapid learning of implementation strategies or else the organization flounders in confusion about what to do.

Third Level

Triple-loop feedback comes from contact with perspectives from other horizons. At the third level of triple-loop feedback the Learning Organization is able to avoid stagnation and gain vitality that is absolutely required to compete in dynamic markets against world-class companies.⁴ All around the world, customers bring their own diverse values and buying decisions with them as they shop. The Learning Organization needs to be focused on the cultures of its customers just as much as its own processes.

Here in global markets the organization is also dynamic as the multiple viewpoints continually mix and ferment new opportunities. Gary Adkins argues that we need to manage for diversity, which means assuring that different cultures, genders, sexual orientations, races, and other sources of personal identity thrive in a given company because complex, adaptive systems evolve better when there are many alternative options competing in near-chaotic condition:

A plurality of forms of reflection and a perspectives in conversation constitutes the multicultural site of vitality. In it, each person, in dialogue, can speak from their own diverse terms, traditions, aims, and demands, yet, each are molded and influenced within this single mode of conversation where differences can be reconciled. That single mode of conversation is the grammar of conduct with its ethical system within a single horizon of meaning for the company.⁵

Belasen also describes the competing values model as the values shift toward dealing external and competitive factors, but now it means the use of a more decentralized management style:

Open Systems Model towards Expansion, Adaptation through decentralization and competitive position

Effectiveness Criteria (Figure 1)

Adaptability, readiness

Growth, Resource Acquisition, External Support

Managerial Competencies (Figure 2)

Negotiator, Broker,

Innovator, change maker

Triple-loop learning reflects the diversity of the real world. We do not have just one category to provide the context and world-view of a learning perspective. We find differences according to sex, sexual orientation, race, nation, region, religion, and other categories with which people identify. Instead of getting bogged down in conflicts of world-views, the Learning Organization must protect this diversity (without implying that every point of view is equal to other, which would lead to the chaos of relativism). Cross-cultural Knowledge Management means more comprehensive learning of how knowledge changes meaning as we attempt to use it in different cultural horizons.

Fourth Level

At the fourth level the Learning Organization is able to take a leadership position in its field. It does not do much backward-looking benchmarking because it is the benchmark against which others struggle to compete. The fourth level sets the ethical standards, appeals to provisional universal principles, guards against relativism, and develops trust⁶ internally among employees to breed loyalty externally among customers and other stakeholders. This leadership position requires setting new standards, sharing tacit knowledge, adding value by balancing opposing polarities, and learning the implications of these higher-order achievements.

Standards: The quadruple-loop feedback is a level that has the most difficult challenges, the biggest payoff, and the biggest risk. All organizations, whether leaders in their field or not, need some of the quadruple-loop feedback to maintain ethics and integrity. Organizations that perfect quadruple-loop learning in addition to the other three loops will go much further and become leaders in their fields.

Tacit Knowledge: Teamwork takes on a much higher level of responsibility in the Learning Organization. The four feedback loops of learning are the underlying paradigm of dynamic Self-Managed Teams (SMTs). On one hand, academic knowledge helps the Learning Organization with some aspects of quadruple-loop feedback, such as the competency to conceptualize mental models, theory constructs, and alternative disciplines. On the other hand, the real-world Learning Organization can help the academic world to conceptualize the real meaning of what Knowledge Management calls tacit knowledge. Tacit knowledge is a rich component of all bodily skills, whether in sports or in manufacturing, which are important for all single-loop feedback. Tacit knowledge is also a rich component of all theoretical models, which are so important for quadruple-loop feedback.

Polanyi recognized in his own terms that lack of tacit knowledge leads to totalitarianism.⁷ Why? Because tacit knowledge means there are vast streams of histories that exceed our dominion. In terms of Post-modern philosophy, there is a self-deception in believing that we have transparent knowledge: once we believe we have an absolutely

explicit knowledge base, we marginalize and exclude everything (and everybody) that does not fit our current paradigm. David Couzens Hoy described how Modernity tends toward excessive systemization with the illusion that all knowledge can be made “transparent”...

*Enlightenment rationalism leads to the much stronger sense of transparency whereby we do not understand ourselves or our epistemological, moral and social practices unless we can identify and state systematically the rules, principles or beliefs that make them possible. The postmoderns continue to try to think what has remained unthought, but they abandon the idea that the unthought can be made completely transparent.*⁸

In the real world, competitors, customers, artists, politicians, and alternative ideologies frequently challenge academic “ivory tower” knowledge precisely because we cannot learn how to apply knowledge in isolation from its many contexts of implementation.⁹

Adding Value: Shifting to higher levels of feedback implies vertical intelligence: both (1) higher knowledge of overarching principles, values, and rationales, and (2) deeper knowledge of causes, foundational paradigms, and cultural axioms. Ironically, more verticality plays a positive role in knowledge and leadership and proportionally reduces the need for verticality in organizational structure (that is, the increasing number of layers of management). More horizontality plays a positive role in organizational structure by requiring integration of multiple tasks and empowerment of all levels of operations. Horizontality can play a negative role in knowledge if it limits knowledge and leadership to the degree that it emphasizes doing without thinking, which prevents people from understanding assumptions and theory models. Managers need to run the business, balance stakeholder interests,¹⁰ and achieve better than average financial results; ethical leaders also answer the question: How do we change beyond previous frameworks and horizons to add value in qualitatively new ways? Adding value at the lower perspective of the Learning Organization means adding what short-term customers will value, such as price reduction or product quality.



Alan Belasen

Adding value at the higher perspective of the Learning Organization means adding what long-term customers and other stakeholders will value, such as product recyclability and trustworthy commitments. As Carrillo has shown, Knowledge Management can be organized to gain powerful points of leverage through the right emphasis on what constitutes value.¹¹ Higher education needs to lead this change curve, and an example of making values central to management by combining them with ethics can be seen in Spenta University's Master of Administration by Values program.¹² People are not the same as things to be managed. Belasen describes how the implementation in the competing values of decentralization (instead of centralization) and focus on the internal workings of the organization (as opposed to the external focus on markets and competitors), leads to a human relations model:

Human Relations Model towards Human Commitment through decentralization and sociotechnical systems

Effectiveness Criteria (Figure 1)

Value of Human Resources Training
Cohesion, Morale

Managerial Competencies (Figure 2)

Understanding self and others, effective communication, developing people
Team building, participative decision-making

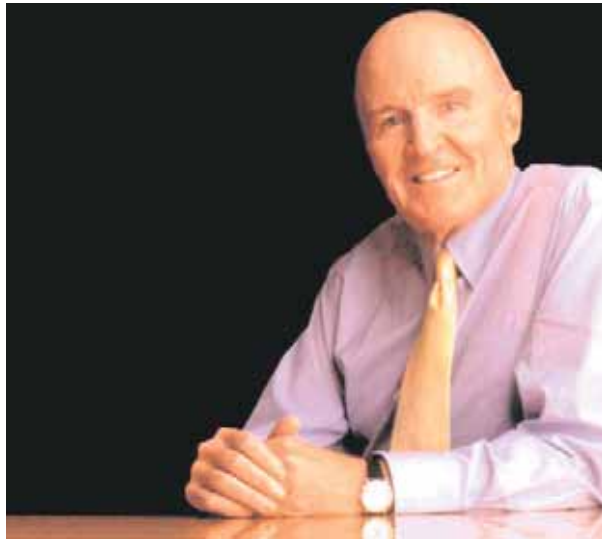
Regression: The shifts to triple- and quadruple-loop feedback are much more complex and probably an inherent requirement to have the kinds of feedback needed to keep up with the increasing

diversity and complexity in the open systems model and the human relations model. If the market is slow and predictable, the Learning Organization faces the complacency factor and might itself get lazy and regress to simpler forms of learning in single-loop feedback (e.g., the US automotive industry in the 1950s and 1960s). If a Learning Organization gets in trouble from market collapse or overwhelming competitors, it faces the fear factor and could also be tempted to abandon high-level learning of triple- and quadruple-loop feedback and instead stick to the rational goal model or even just the internal process model. If a company faces competitors who have the same technology, the Learning Organization can become its main competitive advantage: not having more but learning faster to lead the change curve. The complexity of multiple loops of feedback is necessary for a complex world, yet it can be too much, as Adkins observed:

This post-modern world can be one of constant enchantment and awe in its multifarious hybridity. It can also be terrifying. It takes Emotional Competencies to be able to deal with and navigate change. Without this essential skill set, people can easily become overwhelmed, anxious, resentful and nostalgic for the good old days. And they can become hateful.

With emotional competency, constructed identities in quality relationships on the job empower people.¹³

The Learning Organization is not merely one that increases training of individuals. The Learning Organization (if it will work) also changes the entire dynamic of management, leadership, and strategy. If succeeding in dynamic markets requires SMTs as well as leadership to become distributed among people throughout the organization, then people need to learn rapidly, profoundly, continually, and creatively. The Learning Organization cannot be satisfied with merely knowledge accumulation and transfer; it must also implement the knowledge in effective action, which requires more tacit "know-how" in addition to explicit "know what". Even more importantly, it also must "know why" and create new knowledge through discovery and breakthrough. For example, Jack Welch pushed General Electric into creating and implementing



Jack Welch

new methods and disciplines when he ran into barriers.

There are three key factors: creativity, consciousness, and commitment. People with commitment to organizational success and people with creativity are not easy to find or develop. The most important factor here is their level of consciousness so they are authentic in their commitment to the corporate mission.¹⁴

STRATEGIES TO FOSTER LEARNING

Table I, is a summary of several of the shifts along the lines analyzed by Linda Morris and others regarding what needs to occur when a normal, traditional company shifts into becoming a Learning Organization.¹⁵ The items here for learning are compatible with those used for other reorganizations for streamlining, lean organizations, horizontal management, and transformational leadership.

A company can go about improving learning in a number of ways. Morris realizes that a corporation can approach learning and development of people in various ways. She cites three major strategies to foster learning:

(1) Content Strategies: ways of enhancing individuals through specific plans and courses, which assume that the adult is “fully developed” and only needs to receive new information.

(2) Relational Strategies: ways of linking individuals with their development to the organization with its development, which assumes that the adult is fully developed as an individual but can develop further roles and skills linked to organizational needs

(3) Transformational Strategies: ways of leveraging the higher levels of adult development by having a common core of new cognitive models and operations models. We can further postulate that this approach assumes that the adult is not finished as an individual thereby can develop latent talents or transform to tap unrecognized capacities.

The advantages seen by Morris for the first strategy are that a small company can work flexibly, focus on individuals, and ignore company-wide cultural issues. The advantages for the second strategy are that larger organizations can seek to progressively instill higher levels of competency systematically throughout the organization.

The advantages for the third strategy to foster learning are that individuals are worked with at their own levels, including career planning, and the organization seeks to enhance them beyond those levels. Since the organization is not imposing a global sequence of steps for the employees, the organization needs to maintain its own coherence by adopting a model of thinking which the individuals at their various stages can use.

From the point of view of the NPC,¹⁸ this third strategy allows the organization to seek the common good and assist its employees in the transformations necessary to work towards that goal as well as the corporate mission. In addition to these three, there are other strategies that also assume the “adult” is not ever fully developed so we can foster learning in many ways:

(a) Diversity and Dialogical Strategies: combining relational and transformational strategies through Buber’s concept of authentic dialogue.¹⁹ This means that the organization places a high value on authentic dialogue, and as Adkins emphasized, it also creates a space within which people are safe from persecution and retaliation.²⁰ In addition we need to conceptualize ways of holding open the learning space by receptive

Table I. Characteristics of a traditional organization Vs. a learning organization.

Traditional Corporation	The Learning Organization
<p>Environmental Context The competitive environment is assumed to be relatively slow in changing. Work occurs within one's field of competence and experience.</p>	<p>Rapidly changing societies, markets, customer needs, and competitive challenges make a single, specific competence outmoded too quickly. Work is pushed beyond one's experience: requiring generativity, flexibility, resilience, and adaptability.</p>
<p>Operations The main activity of the organization is assumed to be defined, with an emphasis on standard operating procedures. Learning is practical, on-the-job, occasional and not well focused</p>	<p>The organization is assumed to require frequent increases in the capabilities of the people in it. Learning is conscious and intentionally organized, supported by the organization</p>
<p>The Learner Learning is individual; procedures are dominant because there is a set way of doing things. The main challenge is to get the new employee to get "up to speed" to perform to the known standards of performance</p>	<p>Knowledge building is collaborative and intelligence is collective: what the organization learns is cultivated among all the members because the main challenge is to have all the people in the company capable of creating higher standards of performance. Knowledge management (KM) systems are designed to identify, classify, and allow the retrieval of knowledge throughout the organization. Project teams are common and self-managed teams implement the learning.</p>
<p>The Manager Managers control because they already know what is to be done, and they want to make sure each subordinate does it as they want it done</p>	<p>Managers become teachers and guides because everyone searches for better and better ways of doing things, and managers want to make sure that the subordinates become super-competent at improving and innovating. Managers keep things going in a good direction relative to market demand, customer need and process integration</p>
<p>The Learned The "what" of learning is the individual fact and its use as information organized for a purpose.</p>	<p>The "what" of learning is both information and context, with an emphasis on good interpretations to continually upgrade knowledge.</p>
<p>The Pedagogical Method Learning topics are given by the experts from the top-down, the tasks are broken into sub-sections, labor is divided, and the work is segmented.</p>	<p>Learning comes through questions and processes by those who are learning. The tasks are understood as they flow through the organization so the best processes can be discovered regardless of departmental division. Work is not segmented but rather it is integrated.</p>
<p>Learning Style Passive learning (receiving inputs of data) is emphasized since the assumption is that there is a set of data already complete that then needs to be mastered.</p>	<p>Active learning emphasized since the assumption is that the previously available data is incomplete, will not provide enough information to pursue excellence, and so people will have to continually learn more to achieve excellence.</p>
<p>Learning Goals Objectives are set and departmental procedures used to control the activities since it is assumed that "someone" knows exactly what needs to be done and the only challenge is to do it right. Industrial engineering dominates in manufacturing because the workers are assumed to be lazy and not well enough informed to improve work.</p>	<p>Outcomes are targeted and processes revised to achieve them since the assumption is that no one knows the final best ways of what needs to be done, and the challenge is to explore what is best to do, create new ways of doing it, and then get it right. The competitive environment changes so quickly that workers must be able to re-engineer the standard procedures again and again as products change. Workers are developed so they regain enthusiasm for work and enough competence for continual self-improvement of their work tasks. Double-loop feedback continually re-evaluates the objectives and goals to search for better ways to do things, not just improve the old ways.</p>
<p>Measures of Learning Knowledge is measured by testing because the data is set and the company simply has to check to see if the employee received the inputs correctly.</p>	<p>Learning is monitored by goal attainment because the data is fragmentary, constantly changing and ambiguous</p>
<p>Preparation for Learning Information is disseminated for people to memorize because the data is already organized and set.</p>	<p>Learning to learn is important because the situations to be mastered are continually new, –pattern recognition because the similarities in the innovative to the established knowledge base will shorten the learning curve –action and knowledge generation because by making decisions and taking action you learn more of the implications, generating new knowledge along the way.</p>

Table I. Characteristics of a traditional organization Vs. a learning organization. Continue

Standards for Learning Evaluation based on pre-set standards and simply meeting the standards.	Emphasis on values, what is important, what guides the organization because the business being conducted is constantly being upgraded, improved, changed, so that core competencies are crucial constants. Quadruple-loop feedback is recognized as necessary because principles, values, and a guiding business philosophy provide the flexibility needed for good judgment by agents and team members without constant control from higher levels of authority.
Time Frame for Learning Incremental, short-term competence within limits for relatively well-defined and simple actions in the present. Procedures and policies dominate the learning task.	Long-term development in relation to one's surroundings, progressing to higher capabilities, new frameworks, and the ability to handle complexity, provide unique solutions to ever-changing situations in the organization, the market, and the socio-economic environment of the firm. Everyone becomes an agent to gather and evaluate competitor intelligence. Everyone supports corporate social responsibility.
Assessment of Learning Fear-based measurement: Do it by the numbers, measure, quantify, objectify. All of these metrics serve to alleviate the fear of qualitative judgments and decision making.	Competency-based monitoring: assess, discuss, collaborate, collect exemplary stories, identify guiding symbols. All of these standards require personal courage to evaluate and rely on good judgment.
Cultural Context Cultural homogeneity: satisfaction with the dominant culture and its continuity.	Cultural diversity: managing for increases in diversity to intensify triple-loop feedback in the learning process.
Logic of Learning Instrumentalism: learn through means-ends logic, using means efficiently but not ethically evaluating ends. Ethics is limited to legal compliance. People are treated as means to the corporate ends.	Ethical leadership: treating people as ends in themselves (Kant's categorical imperative) who are necessary to implement the corporate mission; it means evaluating ends in terms of the good; it is both/and logic that guides learning to balance stakeholder interests; it emphasizes sustainability of the common good.
The Learning Space The learning space is physical: it is at the work location in on-the-job training or in a training room. The learning space is assumed to be open when the door is unlocked.	The learning space is conceptual: it is everywhere people have an opportunity to learn. It can explore new ideas through physical or virtual means, using either face-to-face dialogue or virtual, asynchronous mind-to-mind conversations on internet, intranets, and virtual learning communities. Holding open the learning space is considered an ethical responsibility and an important factor in business vitality so that people are excited to be able collaborate on collective learning, people hold open the learning space by encouraging one another, exploring new conceptual territories, and maintaining mutual respect through authentic dialogue. Members of the open learning space must feel optimistic that they will improve through participation in the learning process. Adkins also identifies characteristics of a safe space for diversity. ¹⁶
Learning Level The learning level is practical.	The learning level is theoretical and practical. Theory is recognized as essential to advanced knowledge and the ability to pursue new knowledge. Knowledge creation is as important as knowledge acquisition. The corporate learning space becomes an internal university. Where necessary, formal education is supported outside the organization and alliances are made with other knowledge-based organizations, such as professional publications, professional societies, research centers, etc.
Tools of Learning Information capture: written procedures, data base, data processing, one-way media such as print or televised announcements.	Knowledge capture: data, text, expertise, and wisdom. Two-way media such as dialogue, online discussions, feedback methods, physical and virtual communities.

attitudes, active listening, collaboration, and the use of what Nonaka called knowledge creation skills.²¹ Distributed leadership also supports the dialogical strategy with people in self-managed teams (SMTs) exploring new opportunities

together. The underlying scientific theory is that rich variations in options are needed for shifts from near-chaotic conditions to breakthroughs into higher-order re-organizations of achievement.²²

- (b) Narrative and Symbolic Strategies: the collection and creation of the carriers of corporate culture and history of the organization. The use of symbolic strategies recognizes, as Cory and Underwood described, that the stories believed in a company are powerful teaching instruments.²³ Likewise, this strategy recognizes that the beliefs, values, and world-view of the organization are structured at high levels through the symbol systems. Transformational leaders are seen as guardians and transmitters of symbolic systems that embody the values and preserve them through history.
- (c) Knowledge Management (KM) Strategies: these combine content and relational strategies through new communication and collaboration technologies. In addition, KM needs to define well what it is embodying as knowledge, the complexity of which Firestone described well,²⁴ and KM needs to define what is the accounting value of intangibles such as intellectual assets.²⁵ KM does not exist in the abstract; it exists in communities that have their own history and change cycles.
- (d) Hermeneutic Strategies: recognizing that no knowledge is learned independent of contexts and assumptions. Any other strategy or type of learning can be compromised by the wrong context or deep, and often unconscious, assumptions. Therefore, it is imperative to bring to the surface of consciousness the driving factors.



Joseph Firestone

CONCLUSION

Implementation of the Learning Organization requires the use of multi-leveled feedback loops,²⁶ authenticity, the appropriate types of learning, and the appropriate strategies for learning. Why have so many attempts at the Learning Organization failed? With the right choices, implementation still is not easy; it requires commitment throughout the organization: all departments and all levels, not just one department (such as Human Resources) assigned to “do it” to the other departments. The Learning Organization is not merely a grafting of a teaching component onto an existing organization any more than a wing graft will make a man fly. If a man wants to fly, he has to build something new, such as an airplane, which is a new structure for flying. So also the Learning Organization is a new structure for learning.

APPENDIX ONE:

A SUMMARY OF SOME DIFFERENT TYPES OF LEARNING

In light of the many hidden cultural factors involved in the Learning Organization, it is very important to remember some of the different types of learning. Tables II and III are a list offered to suggest some types (column one) and to describe briefly three different applications (columns two-four) of those types of learning discussed in “The Learning Organization, Part I.”

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Table II. Basic types of learning.

Types of Learning	Societal Application	Business Application	Personal Application
Curiosity – The innate drive in animals and humans for trial and error, to seek out the new, to learn about the unknown for little or no external reason	Innovation, variety, inventiveness, new art forms, new approaches in science	Continual improvements in quality, efficiency. New product ideas.	Entertainment, diversity, staying youthful and interested in life.
Classical Conditioning – repeated stimulus and response connected by the rewards which are proximate to them	Social Continuity: re-enforce the old ways of doing things	Economic Continuity: provide a background of shared knowledge that can be taken for granted	Continuity: remain comfortable in doing what society wants you to do, feeling of identity as defined by the society, its roles.
One-Trial Conditioning -- a devastating or overwhelming stimulus occurs and the response learned without need of repetition	Survival -- certain things which are lethal disasters do not have to be experienced several times in order to be learned, e.g., massive fire.	Same as societal application, plus some things in the business world cause business disasters, and they also need to be learned without the requirement of any repetition or the company will fail	Same as societal application
Instrumental Learning Single-loop learning where various stimuli provide various options and the eventual reward defines which are the best stimuli or means to use.	Social Change: sharpen techniques, work to learn means that will achieve goals. The emphasis is on perfecting the means to succeed. The professions are also examples.	Efficiency: making the means of production better and better. Professionalism.	Efficiency: making the skills or means you use in life become better and better. Professionalism.
Systems Learning 1 - - Homeostasis: perceive a feedback signal (single-loop) which allows you to monitor your deviation, accuracy or stability	Social institutions are preserved. Where members deviate from the policy or purpose of the system, the negative feedback allows them to correct course and maintain the integrity of the system	Corporate departments and structures are preserved. The system integrates the complexities of various business functions to pursue the same goal.	Integration, feeling that you are a part of a functioning whole. Identification with something larger and more enduring than yourself.
Systems Learning 2 – Heterostasis: perceive a feedback signal (single-loop) which allows you to change your action.	Social institutions are prevented from crystallizing or becoming incapable of adaptation	Standard operating procedures are recognized for their limitations as well as their benefits. Alternative ways of integrating the business functions are sought.	Deviance, rebellion, chaos are social risks, but they also open up avenues to “out-of-the-box” thinking.

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Table III. Higher-order types of learning.

Principled Learning, Double-loop learning involves reflection on your assumptions. Learning about Ends: e.g., philosophy, theology, ethics: studying and evaluating the principles by which you live and your goals—asking if they are worthwhile.	Society develops a conscience; people evaluate the goals which society tries to hold up for them. Allows people to avoid the mistake of seeking unworthy ends, such as committing themselves to an immoral war or contaminating the environment	Businesses avoid sliding imperceptibly towards illegal, immoral or even unprofitable goals. Maintaining of the course one holds as worthwhile in the light of public scrutiny and the common good. Principled negotiating expands the options of the advisories to unite their common interests. ²⁷	Integrity, personal standards of ethics and values. The ability to stand up against all of the various and conflicting forces in society.
Aesthetic Learning— Triple-loop learning, appreciation of diversity. Growth, expansion of the mind, appreciation of complexity and ambiguity as found in literature, art, music as well as the dramatic events of human history.	Society develops culture, artistic sensibility. People create more. The values and paradigms of the culture are indirectly embodied in art. Artists push the boundaries towards new values. ²⁸	The corporation has more creative and perceptive people who can deal with complexity and new opportunities beyond standard operating procedures. Improve the R&D program. Innovate rather than just improve.	Artistic capacity, greater appreciation and enjoyment. Cultivation of social and personal values. Deeper understanding of the meaning of life. Interest in creating.
Gestalt Learning— People learn through the closing of gestalts, so the unclosed gestalt is an unfinished learning. Unclosed gestalts are common where people do not pursue a situation to the point where it has a natural closure, such as anger at a person that is never understood, resolved, or released.	Socially this type of learning is important because through it many situations become learning situations.	In business gestalt learning can influence whether groups can function well as a team. Unresolved gestalts contain unconscious negative emotions such as resentment and envy. These unconscious emotions drive hidden agendas that undermine cooperation and teamwork.	Personally, gestalt learning contributes to the same increase in cooperation as in other areas. Through successful closing of gestalts, a person can function without hidden agendas that disrupt personal relations in marriage, family, and friendships, as well as business relationships.
Affective Learning—this means there are emotional factors that influence learning.	Socially, people live in relationships that can either support or hinder learning. Encouragement, belief, and trust are some of the positive affects that support learning.	In business, the relationships come to define how an organization functions, so ignorance of those relationships makes learning difficult or impossible because the implementation of knowledge occurs through the relationships. Mentoring, coaching, and other relationships combine explicit knowledge with tacit knowledge found in positive relationships. ²⁹	Personally, affect begins with the first moments of life, which means one feels secure and loved or not. The family and other social contexts build up ones emotive bank account of positive attitude and self image. On the other hand, a deficit in these areas make learning more difficult because low self esteem sets up barriers of discouragement even before one starts to learn.

9. Note: this lack of epistemic transparency is different from the concept of ethical transparency. In ethics, we can achieve transparency by disclosing all the current activities related to a transaction. In epistemology, the lack of complete transparency comes instead from history, which has influences that can never be completely recovered.

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Table III. Higher-order types of learning. Continue

<p>Cognitive/Interpretative Learning-- this type involves constructing and using mental models of external events.</p>	<p>Socially, people construct mental models that are based on what society permits or does not permit. Thus, successful modeling is a big factor in successful socialization or acceptance of the given social reality.</p>	<p>In business, much of the daily learning is a form of model building so the person can understand what the standard operating procedures are. Challenging mental models is a key to helping an organization implement changes that depart from the old ways of doing things.</p>	<p>Personally, mental models begin with the child's experience of his parents and siblings. The models are constructed with greater or lesser degrees of trustworthiness, which affects the person's basic orientation to the world.</p>
<p>Hermeneutic Learning -- this type of learning involves the unconscious as well as conscious application of interpretative assumptions to experience.</p>	<p>Socially, the problem of hermeneutics has worked to the advantage of those who seize the position of the interpreters. In the Middle Ages, priests in the Catholic Church and in the confessional held themselves up as the authorities in interpreting complex laws of God. Driven by conscience, the people were effectively controlled by the priests. In Modernity, the importance of interpretation was denied. In Post-modern era, all knowledge is considered to exist in an historical context and thus open to re-interpretation.</p>	<p>In business, hermeneutics is not readily recognized because there is a demand for "facts" & unambiguous data that Modernity believed were possible. But most events are ambiguous, so the business leader has to deal with complex events in market trends, team projects, strategic alliances, production, research and development. When the executive understands hermeneutic learning, he can interrupt the tacit restrictions placed on his options by old interpretations.</p>	<p>Personally, hermeneutics affect one's life just as fully as in the social setting or the business world. Until one learns the tacit interpretations and assumptions that define and distort one's experience, one cannot life fully and freely.</p>
<p>Spiritual Learning – Quadruple-loop learning, such as transformational learning. Leaping beyond the five-sensory world, contacting higher realities, developing intuition, para-normal capacities. Transformational learning begins after the other types of learning prove insufficient because the student has to go beyond his old forms and find a new basis for perceiving, assimilating and applying what is true.</p>	<p>Society develops religion, non-material values. Altruism stands against self-destructive competition. Recognition of the common good. (1) Tribal religions based on learning of the traditions. (2) Organized religions with formal learning based on doctrine and faith. (3) Advanced spiritual learning based on experience, which leads to the evolutionary type.</p>	<p>The corporation has more cooperative, dedicated, honest, concerned and hard-working employees. People are motivated by higher values than simply money, so the corporation can reward them with opportunities for growth, creativity, and community service. Genius and creative breakthrough are supported by the entire corporate culture.</p>	<p>Spiritual identity, ability to identify with things beyond the transitory realm of the ordinary world. Feelings of awe, joy, forgiveness, grace, hope, and love. Interest in helping others, feeling a unity of humanity. Benefiting from intuitive insight, less fooled by appearances. The opportunity to gain direct experience of the invisible.</p>
<p>Spiritual Learning – Quadruple-loop learning, such as evolutionary learning. This begins after transformational learning has gone as far as it can go. Images such as enlightenment or being born again imply that the species limitations of being human are being transcended, especially in consciousness. This is principled learning on a higher level on which even higher principles can be found. A change in ontological level implies new state of being rather than different types of becoming.</p>	<p>Origins of new religions or new belief systems, sources of a new era. New level of mutual respect across existing religions as we find provisional universal principles to share because they underlie the diversity of religious commitments.</p>	<p>When this level is infrequent, it is where the great man or great woman starts whole new ways of thinking or completely new industries. As it becomes more frequent, it will be the level of creative breakthroughs, self-less teamwork, and bi-directional achievement of both (a) organizational success (the inner direction) and (b) social, cultural, global and trans-global success (the outer direction). In the Learning Organization even ordinary individuals work smarter to achieve extraordinary things.</p>	<p>The spiritually advanced "graduations" take place. As it becomes more frequent, it will be the level in which creative intuition becomes more common, co-creation is based on shared consciousness, and the perceived common good is continually raised to seek the highest good.</p>

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