

Preparing and Supporting Students to Work in Teams in NTU Learning Environments

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Nanyang Business School
Nanyang Technological University

Teaching Strategies for Cooperative Learning Workshop

December 12-15, 2011

Session 3-4 – Overview

- Leading Projects Teams – Teamwork and Leadership & Leading Learning
- Decision Making in a Team Environment
- Innovation in a Team Environment

Teamwork Skills

- Communication
 - Listening and Persuading
- Decision Making
- Conflict Management
- Leadership
- Trust and Loyalty

Cooperative Teamwork Skills	Tracking Cooperative Skills
<p>Forming Skills</p> <ul style="list-style-type: none"> • Introduce Group Members • New With the Group • Low Status • Task Force • Low Norms, Lack of Order • No "Put Down's" <p>Norming Skills</p> <ul style="list-style-type: none"> • Share Ideas and Opinions • Ask for Facts and Reasoning • Give Direction to the Group Work team • Encourage positive, provide time for other perspectives • Encourage Extensive Participation • Ask for Help or Clarification • Express Support and Encouragement • Offer Help and Clarification • Praise/Encourage Contributions • Energize the Group • Describe Feelings When Appropriate <p>Performing Skills</p> <ul style="list-style-type: none"> • Monitor Group Work • Seek Approval for Group Work in Summary • Help the Group and Offer Help to Members • Check Understanding by Checking Recitation • Ask Others to Plan for Being Teaching the Lead <p>Adjourning Skills</p> <ul style="list-style-type: none"> • Evaluate Cognitive Growth and Reasoning • Critique Ideas and Reasoning of Members • Differentiate Ideas and Reasoning of Members • Integrate Ideas into Single Response • Ask for Justification on Conclusions • Extend Answers • Probe for Aiding in-depth Questions • Generate Further Answers • Test Results by Checking the Group's Work 	<ol style="list-style-type: none"> 1. Help students use the skills to learn the skills. 2. Help them learn how to use the skills. 3. Encourage them to practice the skills. 4. Help them reflect on, practice, and refine use. 5. Help them perceive and work in situations. <p>Monitoring, Observing, Intervening, and Processing</p> <p>Monitor to prevent students from repeating errors. Observe for appropriate teamwork skills. Probe for use and remind students to use them if treatment. Intervene if necessary to help group solve problems or teamwork problems.</p> <p>Process to evaluate continuous growth in how well they learned and cooperated in order to continue automatic integration and improve when needed.</p> <p>Ways of Processing</p> <p>Positive Feedback</p> <ol style="list-style-type: none"> 1. Have volunteer students tell the class something they learned that helped them learn better. 2. Have all students tell their partners something they learned that helped them learn better. 3. Set the class helpful behaviors on the table. <p>Group Analysis</p> <ol style="list-style-type: none"> 1. Have a group of your group of table which helped you learn and work well together. 2. Have a group of your group of table which helped you learn and work better over time. <p>Cooperative Skill Analysis</p> <ol style="list-style-type: none"> 1. Ask your table of the top cooperative skill: Group, Help, Goal, Ready work. 2. Describe how you will encourage each other to practice the larger skill next time. <p>Start "Did your partners give you good feedback?"</p> <p>End "Did your partners give you good feedback?"</p>

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Design team failure is usually due to failed team dynamics
(Leifer, Koseff & Lenshow, 1995).

It's the soft stuff that's hard, the hard stuff is easy
(Doug Wilde, quoted in Leifer, 1997)

Professional Skills

(Shuman, L., Besterfield-Sacre, M., and McGourty, J., "The ABET Professional Skills-Can They Be Taught? Can They Be Assessed?" Journal of Engineering Education, Vo. 94, No. 1, 2005, pp. 41–55.)

How Should Colleges Prepare Students To Succeed In Today's Global Economy?

Based On Surveys Among Employers And Recent College Graduates

Conducted On Behalf Of:
The Association Of American Colleges And Universities

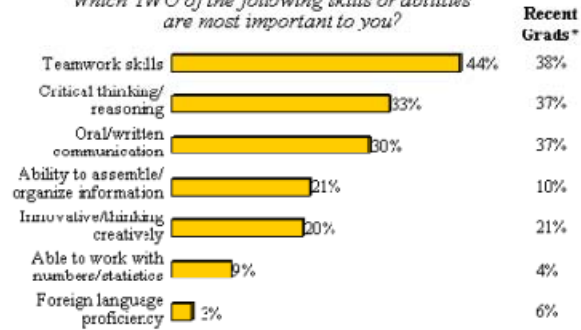
By Peter D. Hart Research Associates, Inc.

December 28, 2006

Peter D. Hart Research Associates, Inc.
1720 Connecticut Avenue, NW
Washington, DC 20009

Most Important Skills Employers Look For In New Hires

Which TWO of the following skills or abilities are most important to you?



* Skills/abilities recent graduates think are the two most important to employers

<http://www.aacu.org/advocacy/leap/documents/Re8097abcombined.pdf>

Top Three Main Engineering Work Activities

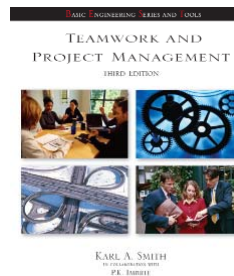
Engineering Total

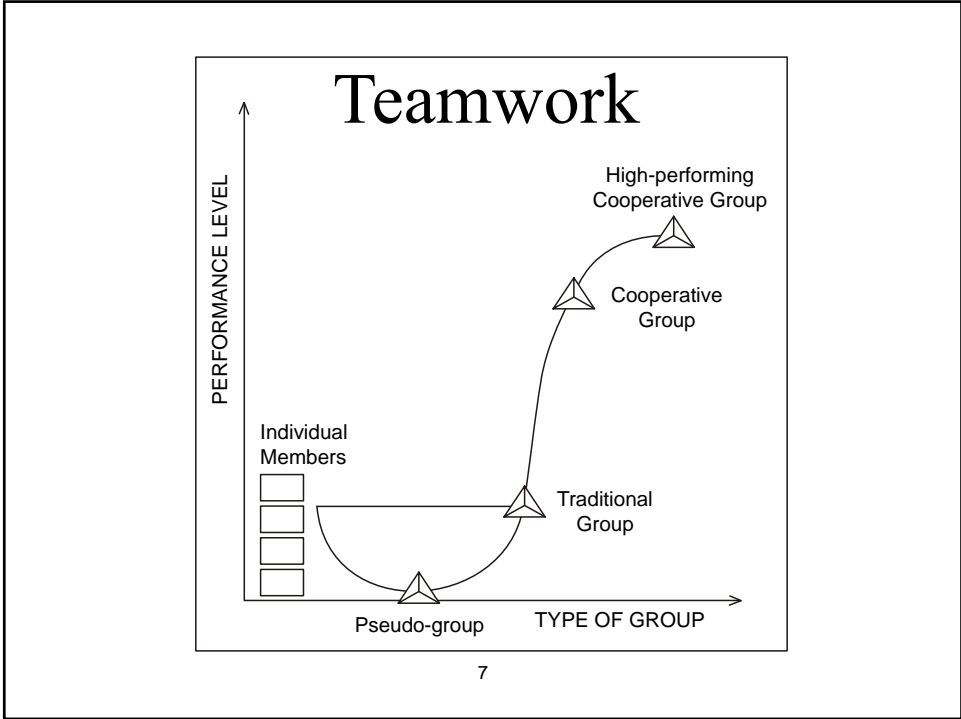
- Design – 36%
- Computer applications – 31%
- Management – 29%

Civil/Architectural

- Management – 45%
- Design – 39%
- Computer applications – 20%

Burton, L., Parker, L., & LeBold, W. 1998. U.S. engineering career trends. *ASEE Prism*, 7(9), 18-21.





Characteristics of Effective Teams?

- ?
- ?

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A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable

- SMALL NUMBER
- COMPLEMENTARY SKILLS
- COMMON PURPOSE & PERFORMANCE GOALS
- COMMON APPROACH
- MUTUAL ACCOUNTABILITY

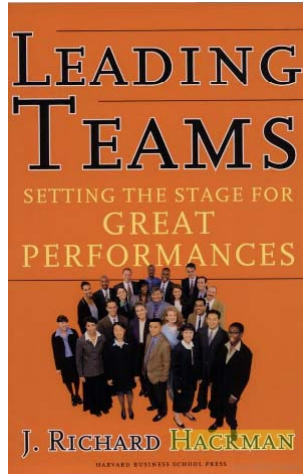
--Katzenbach & Smith (1993)
The Wisdom of Teams

Six Basic Principles of Team Discipline

- Keep membership small
- Ensure that members have complimentary skills
- Develop a common purpose
- Set common goals
- Establish a commonly agreed upon working approach
- Integrate mutual and individual accountability

Katzenbach & Smith (2001) *The Discipline of Teams*

Hackman – Leading Teams



- Real Team
- Compelling Direction
- Enabling Structure
- Supportive Organizational Context
- Available Expert Coaching

Team Diagnostic Survey (TDS)

<https://research.wjh.harvard.edu/TDS/>

Real Team

- clear boundaries
- team members are interdependent for some common purpose, producing a potentially assessable outcome for which members bear collective responsibility
- at least moderate stability of membership

Compelling Direction

- Good team direction is:
 - challenging (which energizes members)
 - clear (which orients them to their main purposes)
 - consequential (which engages the full range of their talents)

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Enabling Structure

- Key structural features in fostering competent teamwork
 - Task design: The team task should be well aligned with the team's purpose and have a high standing on "motivating potential."
 - Team composition: The team size should be as small as possible given the work to be accomplished, should include members with ample task and interpersonal skills, and should consist of a good diversity of membership
 - Core norms of conduct: Team should have established early in its life clear and explicit specification of the basic norms of conduct for member behavior.

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Group Task and Maintenance Roles

Group Task Roles	Group Maintenance Roles
Initiating	Encouraging
Seeking Information	Expressing Feelings
Giving Information	Harmonizing
Seeking Opinions	Compromising
Giving Opinions	Facilitating Communications
Clarifying	Setting Standards or Goals
Elaborating	Testing Agreement
Summarizing	Following

Group Processing Plus/Delta Format

Plus (+) Things That Group Did Well	Delta (Δ) Things Group Could Improve

Team Charter

- Team name, membership, and roles
- Team Mission Statement
- Anticipated results (goals)
- Specific tactical objectives
- **Ground rules/Guiding principles for team participation**
- Shared expectations/aspirations

Code of Cooperation

- EVERY member is responsible for the team's progress and success.
- Attend all team meetings and be on time.
- Come prepared.
- Carry out assignments on schedule.
- Listen to and show respect for the contributions of other members; be an active listener.
- CONSTRUCTIVELY criticize ideas, not persons.
- Resolve conflicts constructively,
- Pay attention, avoid disruptive behavior.
- Avoid disruptive side conversations.
- Only one person speaks at a time.
- Everyone participates, no one dominates.
- Be succinct, avoid long anecdotes and examples.
- No rank in the room.
- Respect those not present.
- Ask questions when you do not understand.
- Attend to your personal comfort needs at any time but minimize team disruption.
- HAVE FUN!!
- ?

Adapted from Boeing Aircraft Group Team Member Training Manual

Ten Commandments: An Affective Code of Cooperation

- Help each other be right, not wrong.
- Look for ways to make new ideas work, not for reasons they won't.
- If in doubt, check it out! Don't make negative assumptions about each other.
- Help each other win, and take pride in each other's victories.
- Speak positively about each other and about your organization at every opportunity.
- Maintain a positive mental attitude no matter what the circumstances.
- Act with initiative and courage, as if it all depends on you.
- Do everything with enthusiasm; it's contagious.
- Whatever you want; give it away.
- Don't lose faith.
- Have fun

Ford¹⁹ Motor Company

Bechtel Leadership Covenants

- **Treat Bechtel colleagues with mutual respect, trust, and dignity** and believe they are acting in the best interest of the company.
- **Help each other**; ask for and give help and welcome it freely (it is not a sign of weakness). Go out of the way to provide extra support to fellow employees.
- **Share experiences and lessons learned**, both successes and failures.
- **Communicate early, honestly, and completely** with all who have a direct interest in the subject. Listen to others' points of view.
- **Earn trust** by accepting and honoring agreements, keeping promises, and discussing needed changes before acting.
- **Work to understand Bechtel Group, Inc. goals and strategies** and proactively support them through discussions, communications, and actions (for example, sharing resources).
- **Never undermine colleagues** directly or indirectly.
- **Work jointly to resolve disagreements** in good faith. If necessary, go to a higher authority together, then accept and support the solution.
- **Contribute constructively** by exercising the highest level of professional and ethical behavior.
- **Promote continuous use of the covenants.**

Leadership

Characteristics of Admired Leaders (people you know and have worked with)

Take 2 minutes and list the characteristics
that come to mind for leaders you admire

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Characteristics of Admired Leaders

<i>Characteristic</i>	<i>1993 U.S. Percentage of People Selecting</i>	<i>1987 U.S. Percentage of People Selecting</i>
Honest	87	83
Forward-looking	71	62
Inspiring	68	58
Competent	58	67
Fair-minded	49	40
Supportive	46	32
Broad-minded	41	37
Intelligent	38	43
Straightforward	34	34
Courageous	33	27
Dependable	32	32
Cooperative	30	25
Imaginative	28	34
Caring	27	26
Mature	14	23
Determined	13	20
Ambitious	10	21
Loyal	10	21
Self-controlled	5	13
Independent	5	13

James M. Kouzes & Barry Z. Posner. 1993.
*Credibility: How leaders gain and lose it, why
people demand it.* San Francisco: Jossey-Bass.

Distributed Actions Approach to Leadership

Leadership is any action that helps a group achieve its goals AND maintain cooperative relationships among members.

Task AND Maintenance

Collins – Level 5 Leadership

- **Level 5** Level 5 Executive – Builds enduring greatness through a paradoxical combination of personal humility plus professional will
- **Level 4** Effective Leader – Catalyzes commitment to and vigorous pursuit of a clear and compelling vision; stimulates the group to high performance standards
- **Level 3** Competent Manager – Organizes people and resource toward the effective and efficient pursuit of predetermined objectives
- **Level 2** Contributing Team Member
- **Level 1** Highly Capable Individual

Collins – Good to Great & Built to Last

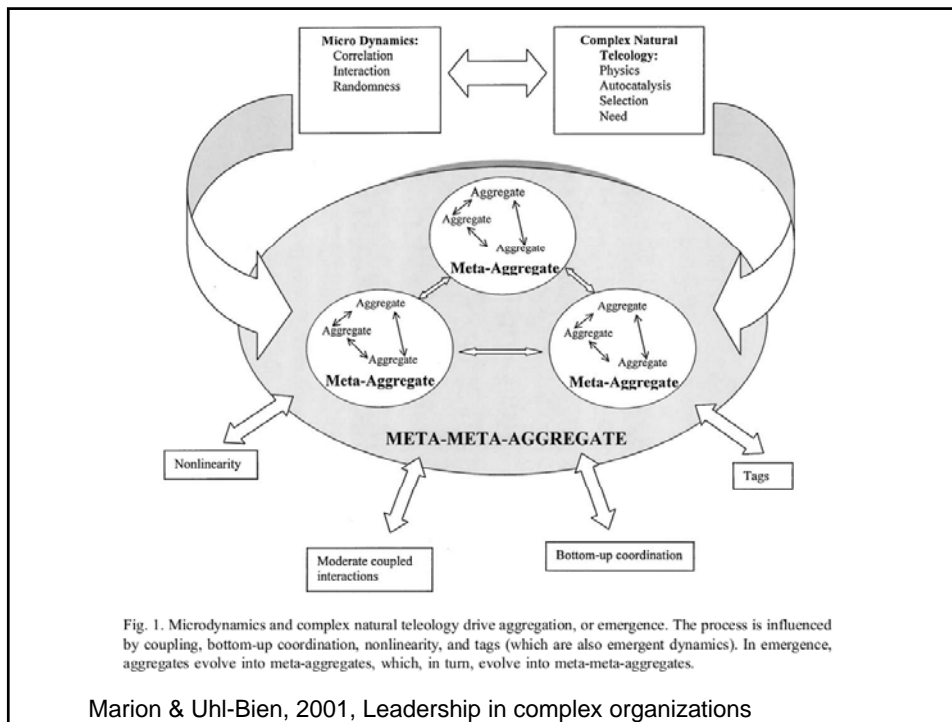
- **Check out jimcollins.com for discussion questions to deepen understanding of:**
 - Level 5 Leadership
 - First Who
 - Confront the Brutal Facts
 - Hedgehog Concept (the Three Circles)
 - What it can be best at, How its economics work best, What ignites its people's passions.
 - Culture of Discipline
 - Technology Accelerators

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Complexity Leadership Theory

- Drivers of innovation in adaptive leadership
 - Collective identity formation
 - Tension
- Measuring the space between
 - Identifying and bracketing the events, episodes, and interactions of interest
 - Capturing these events or interactions as data in a systematic way
 - Gathering individual/agent level data that describe interaction cues over time
 - Modeling these data in ways that highlight their longitudinal and relational qualities
 - Analyzing these data in terms of their relational qualities and longitudinal dynamics

Lichtenstein, et al., 2006. Complexity leadership theory



Nobody in Charge by Harlan Cleveland Leadership for the Management of Complexity

- A lively intellectual curiosity – because everything is related to everything else
- A genuine interest in what other people think and why they think that way
- A feeling of responsibility for envisioning a future that's different from straight-line project of the present
- A hunch that most risks are there not to be avoided but to be taken
- A mindset that crises are normal, tensions can be promising, and complexity is fun
- A realization that paranoia and self-pity are reserved for people who *don't* want to be leaders
- A sense of *personal* responsibility for the *general* outcome of your efforts
- A quality of “unwarranted optimism”

New Leadership Competencies

The Leader's Handbook (Scholtes, 1998)

1. The ability to think in terms of systems and knowing how to lead systems.
2. The ability to understand the variability of work in planning and problem solving.
3. Understanding how we learn, develop, and improve; leading true learning and improvement.
4. Understanding people and why they behave as they do.
5. Understanding the interaction and interdependence between systems, variability, learning, and human behavior; knowing how each affects the others.
6. Giving vision, meaning, direction, and focus to the organization.

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The Ten Commitments of Leadership (Kouzes & Posner, 1987)

Challenging the Process

1. Search for Opportunities
2. Experiment and Take Risks

Inspiring a Shared Vision

3. Envision the Future
4. Enlist Others

Enabling Others to Act

5. Foster Collaboration
6. Strengthen Others

Modeling the Way

7. Set the Example
8. Plan Small Wins

Encouraging the Heart

9. Recognize Individual Contribution
10. Celebrate Accomplishments

The Seven Habits of Highly Effective People (Covey, 1989)

Be Pro-Active: Take the initiative and the responsibility to make things happen.

Begin With an End in Mind: Start with a clear destination to understand where you are now, where you're going, and what you value most.

Put First Things First: Manage yourself. Organize and execute around priorities.

Think Win/Win: See life as a cooperative, not a competitive arena where success is not achieved at the expense or exclusion of the success of others.

Seek First to Understand: Understand then be understood to build the skills of empathic listening that inspires openness and trust.

Synergize: Apply the principles of cooperative creativity and value differences.

Renewal: Preserving and enhancing your greatest asset, yourself, by renewing the physical, spiritual, mental and social/emotional dimensions of your nature.

Leading Learning

- Key aspects on leading or orchestrating learning for yourself and for others?
 - Your experience
 - Senge's ideas?
 - Garvin's ideas?
- Rationale for Focusing on Learning?

Building Organizational Capabilities

Exhibit 1

Why companies focus on building capabilities

% of respondents¹ n = 1,375

Reason organization focused on a specific skill (eg, sales and pricing, leadership)



¹ Respondents who answered "don't know" are not shown.

Exhibit 6

A strategic priority

How high a priority is capability building within your company's strategic agenda currently?

By group that sets the capability building agenda¹



¹ Respondents who answered "don't know" are not shown.

https://www.mckinseyquarterly.com/Organization/Strategic_Organization/Building_organizational_capabilities_McKinsey_Global_Survey_results_2540

Creation Spaces

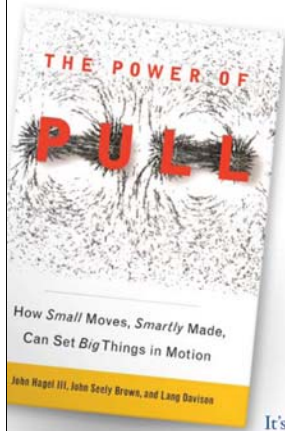


How *Small Moves, Smartly Made,*
Can Set *Big Things* in Motion

John Hagel III, John Seely Brown, and Lang Davison

- Creation spaces differ from learning organizations
 - They emerge as ecosystems across institutions rather than within a single institution, so they reach a more diverse set of participants
 - They are not primarily focused on learning – their goal is to drive more rapid performance improvement, and learning occurs as a byproduct

Deloitte.

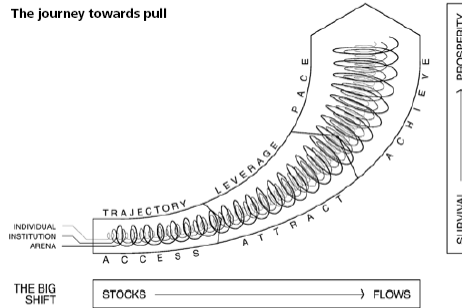


It's in your hands.

What are the elements of a successful journey toward pull?

- The right *trajectory*—the direction in which you're headed
- Sufficient *leverage*—the ability to mobilize the passions and efforts of other people
- The best *pace*—the speed at which you progress

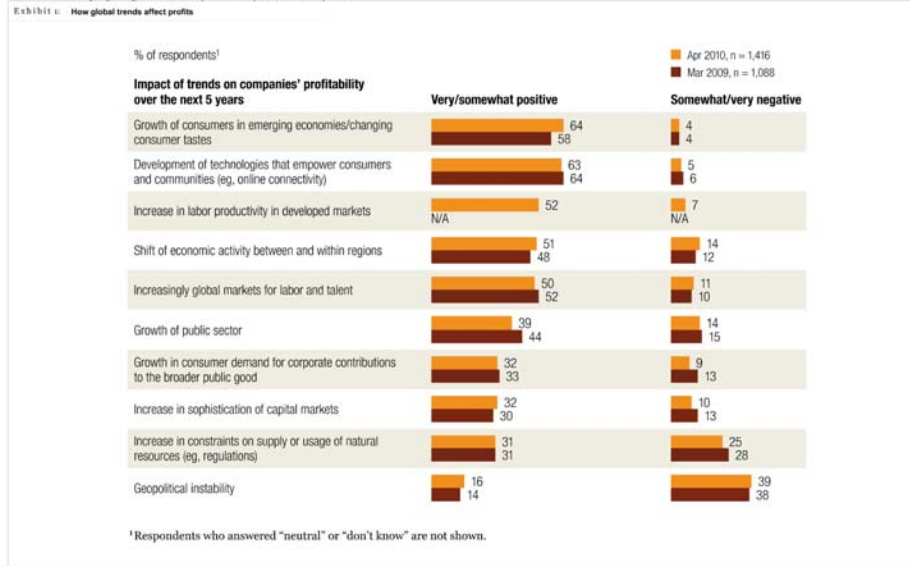
The journey towards pull



Hagel III, J., Brown, J.S., & Davison, L. (2010). *The Power of Pull*. New York, NY: Basic Books. Design by Havilland Studio, Palo Alto, Calif., and Lahaina, Hawaii.

http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/TMT_us_tmt/us_tmt_ce_PowerofPull10pages_04132010.pdf

Five forces reshaping the global economy: McKinsey Global Survey results



https://www.mckinseyquarterly.com/Strategy/Globalization/Five_forces_reshaping_the_global_economy_McKinsey_Global_Survey_results_2581#1

The Art & Practice of the Learning Organization
Peter Senge (In Ray & Rinzler, 1993)

1. **Building Shared Vision.** The idea of building shared vision stresses that you never quite finish it--it's an ongoing process.
2. **Personal Mastery.** Learning organizations must be fully committed to the development of each individual's personal mastery--each individual's capacity to create their life the way they truly want.
3. **Mental Models.** Our vision of current reality has everything to do with the third discipline--mental models--because what we really have in our lives is constructions, internal pictures that we continually use of interpret and make sense out of the world.
4. **Team Learning.** Individual learning, no matter how wonderful it is or how great it makes us feel, is fundamentally irrelevant to organizations, because virtually all important decisions occur in groups. The learning unit of organizations are "teams," groups of people who need one another to act.
5. **Systems Thinking.** The last discipline, the one that ties them all together, is systems thinking.

Senge, Peter. 1990. *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.

Ray, Michael & Rinzler, Alan. (Eds). 1993. *The new paradigm in business: Emerging strategies for leadership and organizational change*. Los Angeles: Tarcher/Perigee.

Learning Organization

A learning organization is an organization skilled at creating, acquiring, interpreting, transferring, and retaining knowledge, and at purposefully modifying its behavior to reflect new knowledge and insights – David Garvin

Garvin, David. 2000. *Learning in action: A guide to putting the learning organization to work*. Cambridge, MA: Harvard Business School Press.

Learning Organization – Litmus Test

1. Does the organization have a defined learning agenda?
2. Is the organization open to discordant information?
3. Does the organization avoid repeated mistakes?
4. Does the organization lose critical knowledge when key people leave?
5. Does the organization act on what it knows?

Garvin (2000) p. 15.

Learning Organization – The Learning Process

- Stages of learning
 - Acquiring Information
 - Interpreting Information
 - Applying Information
- Learning Disabilities
 - Biased Information
 - Flawed Interpretation – illusory correlation, illusory causation, the illusion of validity, framing effects, categorical bias, availability bias, regression artifacts, hindsight bias
 - Inaction
- Supportive Learning Environments
 - Recognize and Accept Differences
 - Provide Timely Feedback
 - Stimulate New Ideas
 - Tolerate Errors and Mistakes

Garvin (2000) p. 20-43.

Learning Organization – Types of Learning

Intelligence

Gathering Intelligence

Search

Inquiry

Observation

Experience

Reflection and Review

Experiential Learning

Problems that Stimulate Learning

1. They are significant (the issues matter to people in the organization)
2. They are complex (the solution is not obvious)
3. They are multifunctional (participants must work across boundaries)
4. They involve difficult people issues (the problems are organizational as well as technical)
5. They are action-oriented (the goal is to do something, not simply analyze a situation)
6. They are ill-structured (participants must frame and define problems as well as solve them)
7. They involve surprises (neither the data nor the results are completely predictable)

Experimentation

Garvin (2000) p. 20-43.

Execution-as-Efficiency	vs.	Execution-as-Learning
Leaders provide answers.		Leaders set direction and articulate the mission.
Employees follow directions.		Employees (usually in teams) discover answers.
Optimal work processes are designed and set up in advance.		Tentative work processes are set up as a starting point.
New work processes are developed infrequently; implementing change is a huge undertaking.		Work processes keep developing; small changes – experiments and improvements – are a way of life.
Feedback is typically one-way (from boss to employee) and corrective (“You’re not doing it right.”)		Feedback is always two-way: The boss gives feedback in the form of coaching and advice; team members give feedback about what they’re learning from doing the (ever-changing) work.
Problem solving is rarely required; judgment is not expected; employees ask managers when they’re unsure.		Problem solving is constantly needed, so valuable information is provided to guide employees’ judgment.
Fear (of the boss or of consequences) is often part of the work environment and generally does not appreciably harm the quality of execution; it may even motivate effort and attentiveness in those facing an otherwise dull task.		Fear cripples the learning process: It inhibits experimentation, lowers awareness of options, and discourages people from sharing and analyzing insights, questions, and problems.

Edmonson-Competitive_Advantage_of_Learning-HBR-2008.pdf

Does Psychological Safety Hinder Performance?

Psychological safety does not operate at the expense of employee accountability; the most effective organizations achieve high levels of both, as this matrix shows.

		Accountability for Meeting Demanding Goals	
		LOW	HIGH
Psychological Safety	HIGH	<p>Comfort zone</p> <p>Employees really enjoy working with one another but don't feel particularly challenged. Nor do they work very hard. Some family businesses and small consultancies fall into this quadrant.</p>	<p>Learning zone</p> <p>Here the focus is on collaboration and learning in the service of high-performance outcomes. The hospitals described in this article fall into this quadrant.</p>
	LOW	<p>Apathy zone</p> <p>Employees tend to be apathetic and spend their time jockeying for position. Typical organizations in this quadrant are large, top-heavy bureaucracies, where people fulfill their functions but the preferred modus operandi is to curry favor rather than to share ideas.</p>	<p>Anxiety zone</p> <p>Such firms are breeding grounds for anxiety. People fear to offer tentative ideas, try new things, or ask colleagues for help, even though they know great work requires all three. Some investment banks and high-powered consultancies fall into this quadrant.</p>

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