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

Karl A. Smith
Engineering Education – Purdue University
Technological Leadership Institute/ STEM Education Center/
Civil Engineering - University of Minnesota
ksmith@umn.edu - http://www.ce.umn.edu/~smith

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

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

Top Three Main Engineering Work Activities

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

Civil/Architectural
- Management – 45%
- Design – 39%
- Computer applications – 20%

Characteristics of Effective Teams?

• ?
• ?
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)

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.
### Group Task and Maintenance Roles

<table>
<thead>
<tr>
<th>Group Task Roles</th>
<th>Group Maintenance Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiating</td>
<td>Encouraging</td>
</tr>
<tr>
<td>Seeking Information</td>
<td>Expressing Feelings</td>
</tr>
<tr>
<td>Giving Information</td>
<td>Harmonizing</td>
</tr>
<tr>
<td>Seeking Opinions</td>
<td>Compromising</td>
</tr>
<tr>
<td>Giving Opinions</td>
<td>Facilitating Communications</td>
</tr>
<tr>
<td>Clarifying</td>
<td>Setting Standards or Goals</td>
</tr>
<tr>
<td>Elaborating</td>
<td>Testing Agreement</td>
</tr>
<tr>
<td>Summarizing</td>
<td>Following</td>
</tr>
</tbody>
</table>

### Group Processing

#### Plus/Delta Format

<table>
<thead>
<tr>
<th>Plus (+)</th>
<th>Delta (Δ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Things That Group Did Well</td>
<td>Things Group Could Improve</td>
</tr>
</tbody>
</table>
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

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**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

Ford 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.**

www.bechtel.com
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


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

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 projects 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

<table>
<thead>
<tr>
<th>Percentage of respondents (%)</th>
<th>Why companies focus on building capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>To importance as a fundamental part of our culture</td>
</tr>
<tr>
<td>21</td>
<td>Customer demands</td>
</tr>
<tr>
<td>16</td>
<td>Long-term global trends (eg. shifting market)</td>
</tr>
<tr>
<td>34</td>
<td>Competitors’ capabilities</td>
</tr>
<tr>
<td>9</td>
<td>Short-term external events (eg. economic downturn)</td>
</tr>
<tr>
<td>10</td>
<td>Other</td>
</tr>
</tbody>
</table>

*Respondents who answered “don’t know” are not shown.


Creation Spaces

- 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

*The Power of Pull: How Small Moves, Smartly Made, Can Set Big Things in Motion*
John Hagel III, John Seely Brown, and Lang Davison
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


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, if 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.


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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

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?


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

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**


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**Execution-as-Efficiency vs. Execution-as-Learning**

<table>
<thead>
<tr>
<th>Execution-as-Efficiency</th>
<th>Execution-as-Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaders provide answers.</td>
<td>Leaders set direction and articulate the mission.</td>
</tr>
<tr>
<td>Employees follow directions.</td>
<td>Employees (usually in teams) discover answers.</td>
</tr>
<tr>
<td>Optimal work processes are designed and set up in advance.</td>
<td>Tentative work processes are set up as a starting point.</td>
</tr>
<tr>
<td>New work processes are developed infrequently; implementing change is a huge undertaking.</td>
<td>Work processes keep developing; small changes – experiments and improvements – are a way of life.</td>
</tr>
<tr>
<td>Feedback is typically one-way (from boss to employee) and corrective (“You’re not doing it right.”)</td>
<td>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.</td>
</tr>
<tr>
<td>Problem solving is rarely required; judgment is not expected; employees ask managers when they’re unsure.</td>
<td>Problem solving is constantly needed; so valuable information is provided to guide employees’ judgment.</td>
</tr>
<tr>
<td>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.</td>
<td>Fear cripples the learning process; it inhibits experimentation, lowers awareness of options, and discourages people from sharing and analyzing insights, questions, and problems.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Psychological Safety</th>
<th>HIGH</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comfort zone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Learning zone</strong></td>
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<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Apathy zone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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 functional but the preferred modus operandi is to curry favor rather than to share ideas.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anxiety zone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>