Using Course Collaboration to Enhance Team Performance

2012 S&T Mini Educational Research Grant

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High Level View

- **Purpose:** Better understand team effectiveness by using inductive teaching methods

- **Implementation:**
  - BUS 421: teambuilding (TB) and TB skills through active learning, team-based learning, and TB skills assessments
  - BUS 427: inductive learning, team-based learning, and team effectiveness assessments

- **Assumptions:**
  - (1) the development activity (BUS 421) and performance (BUS 427) will be linked, and
  - (2) enhanced performance will occur as a result of the development activity.

- **Hypothesis:** If barriers which prevent effective team performance are removed, then improvement occurs.

- **Expectations:** Enhancing student engagement and professional development
Background

• Teams (or groups) in organizations became a hot topic in the 1940s (Mayo, 1993)

• 80% of companies with a headcount over 100 say half of their employees are on at least one team (Beyerlein & Harris, 1998)

• Inductive teaching and learning are also increasing in popularity as classroom approaches (Prince & Felder, 2007; Olin, n.d.)
Inductive vs Deductive Teaching

• Deductive (direct teaching)
  - More structured, instructor presents ideas and concepts, and students undertake tasks to practice the concepts
  - Instructor centered
  - Generalization $\rightarrow$ Specific Example

• Inductive (discovery or inquiry teaching)
  - Students observe, questions encouraged, instructor finds opportunities to explore before learning concepts
  - Student centered
  - Specific Examples $\rightarrow$ Generalization
Benefits to Using Teams in Organizations

• Increase in performance & efficiency *(Ray & Bronstein, 1995; Klein et, 2009; Ancona, 1990; Orsburn, et al. 1990;)*

• Better quality decisions *(Manz & Sims, 1993)*

• Wider range of skills and experience *(Kernaghan & Cooke, 1990; Mennecke & Bradley, 1998)*

• Sense of commitment *(Hick, 1998)*

• Correlation with team goal commitment and team effectiveness *(Aubè & Rousseau, 2005)*
Benefits to Using Teams for Student Projects

• Provide opportunities for students to explore typical workplace activities

• Increase student performance on team projects (Sullivan, 2011)

• Enable students to differentiate themselves based on experiential teamwork (e.g., job hunting)
Identified Team Problem Areas*

- Free riding or social loafing
- Deteriorating communication
- Decreased motivation
- Goal setting issues
- Role clarification
- Inexperienced team leaders
- Conflict resolution
- Interpersonal relations
- Problem solving including creative problem solving techniques

*(Forman and Katsky, 1986; McCorkle et al, 1999).
Methodology

**BUS 421 (Bachman)**
- Teambuilding (TB) module development
- TB activity (1st 3 wks)
- Semester long SL project
- 8 TB skills assessments
- Instructor analysis

**BUS 427 (Lin)**
- Team Project (Case Studies) Development
- 3-3 wk team projects following TB activity
- 3 cycles of assessments
- Instructor analysis
Methodology (Con’t)

• BUS 421 Team Background
  – Self-selection
  – 2 teams (7 to 8 members)
  – Mix of gender, age, working status, distance status, UG degree

• BUS 427 Team Background
  – Assigned
  – 4 teams (3 to 4 members)
  – At least 1 member was a distance student
  – At least 1 member was a full time working student
  – Mix of gender, age, UG degree
  – 1 control group (all members were in BUS 421)
BUS 421: Teambuilding and Leadership

- Teambuilding Components (3 week module)
  - Lecture, Discussion, Small and Large Group Activities, Simulation
  - Semester long service learning project (2 teams)
    - Mission, Goals, Gantt chart
    - Bi-weekly Status Reports
    - Presentation and Paper

- 8 Post course assessments (currently being analyzed)
  - Team Effectiveness (2 types)
  - Team Values
  - Team Meeting Effectiveness
  - Team Motivation
  - Team Problem-solving
  - Team Decision-making
  - Team Roles
Simulation

• Two teams were assigned the task of building a prototype vehicle for Mars exploration
  – Part 1-Individuals complete assigned tasks, with no assistance from others
  – Part 2-Individuals are permitted to work together

• Learning Outcomes
  – Experience the difference between a team and a group of individuals
  – Articulate issues with responsibilities in different settings
  – Realize the importance of continual communication within the team
BUS 427: Managerial Finance

• Assessments (3 successive cycles)*
  – Team Work (13 items)
    • Scored on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree)
  – Level of Cohesion (5 items)
    • Scored on a 5 point scale ranging from 1 (not at all) to 5 (very much)
  – Goal Achievement (2 items)
    • Scored on a 5 point scale ranging from 1 (strongly disagree) to 5 (strongly agree)

• Respondents scored teams and themselves

• Average scores (individual and individual team data is being analyzed)

*Deeter-Schmelz, Kennedy, Ramsey (2002)
<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Works toward the understood goal of the team</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributes to an informal, comfortable, and tension-free work</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>environment</td>
<td></td>
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<tr>
<td>Is enthusiastic about working with the team and exhibits high morale</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Follows through on commitment</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Takes pride in the team’s work</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shows interest in other team members’ achievements</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Readily accepts feedback on performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourages others to achieve at high levels</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td><strong>Is able to stay focused on team tasks</strong></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Is sensitive to the feelings of others</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is eager to try new approaches</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Is able to resolve conflict effectively</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Exhibits open lines of communication with other students</td>
<td></td>
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</tr>
</tbody>
</table>

**Key:**

- * ≥ 20% disagreement
- * ≥ 27% disagreement
- * ≥ 30% disagreement
Level of Cohesion

<table>
<thead>
<tr>
<th>Item: To what extent...</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the students in your project team friendly?</td>
<td>13%</td>
<td>14%</td>
<td>7%</td>
</tr>
<tr>
<td>Are the students in your project team helpful to you in getting your job done?</td>
<td>14%</td>
<td>28%</td>
<td>21%</td>
</tr>
<tr>
<td>Do the students in your project take a personal interest in you?</td>
<td>20%</td>
<td>28%</td>
<td>21%</td>
</tr>
<tr>
<td>Do you trust the members of your immediate team?</td>
<td>13%</td>
<td>28%</td>
<td>14%</td>
</tr>
<tr>
<td>Do you look forward to being with the members of your team?</td>
<td>7%</td>
<td>35%</td>
<td>28%</td>
</tr>
</tbody>
</table>

- Survey 2 has decreased level of cohesion in 4 of 5 areas
- Next step: Explore correlations for each team
Goal Achievement

<table>
<thead>
<tr>
<th>Item: To what degree do you disagree/agree with the following statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did your team achieve its set goals?</td>
<td>13% 3.80 x̄</td>
<td>28% 3.64</td>
<td>14% 3.93</td>
</tr>
<tr>
<td>Did your team achieve the goals you had hoped to achieve?</td>
<td>14% 3.47</td>
<td>35% 3.43</td>
<td>14% 3.86</td>
</tr>
</tbody>
</table>

- Similar results as shown for Cohesion (previous slide)
- Survey 2: Bimodal distribution for Q1 and increased disagreement for both questions
Summary of Preliminary Results
BUS 427

- **Teamwork (13 items)**
  - 3 items show higher levels of disagreement across all 3 surveys

- **Level of Cohesion (5 items)**
  - Survey 2 - significant increased disagreement in 4 of 5 items

- **Goal Achievement (2 items)**
  - Survey 2 - increased disagreement for both items

*Deeter-Schmelz, Kennedy and Ramsey (2002)*
BUS 427 Intervention

• Warning signs:
  – 2 of 3 members wanted to be assigned to another team after 1st assignment
  – Complaints
  – Asking for help
  – 2nd assignment (3 reports)
Intervention (Con’t)

Identified Team Problem Areas
• Free riding or social loafing
• Deteriorating communication
• Decreased motivation
• Goal setting issues
• Role clarification
• Inexperienced team leaders
• Conflict resolution
• Interpersonal relations
• Problem solving including creative problem solving techniques
Intervention (Con’t)

• Administered survey to determine level of dysfunction (trust, conflict, commitment, accountability, results)
• Across the board dysfunction
• Group therapy
• Individual therapy
• 3rd cycle-highest assignment grade (most difficult case)
Next Steps for Study

• Looking closer at Survey 2
• Doing correlations & further analyses using demographic information
• Analyze individuals and teams
• Adding written item/grade components (BUS 427)
• Analyzing 8 post course assessments (BUS 421)
• Adding written item/grade components (BUS 421)
References

THANK YOU FOR YOUR ATTENTION

QUESTIONS?
ADDITIONAL SLIDES
# Budget

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials and Supply</strong></td>
<td>Teambuilding Books, Teambuilding Construction Kit, Communication Kit, Teamwork and Team Roles Assessment, Team Roles Activity Kit</td>
<td>$2000</td>
</tr>
<tr>
<td><strong>Summer Support</strong></td>
<td>Class Preparation &amp; Project Development</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Student Assistant</strong></td>
<td>Help Instructors Prepare Class Exercise and Collect Data: $8/hr<em>10hrs/week</em>15 weeks</td>
<td>1,200</td>
</tr>
<tr>
<td><em>Student Assistant (BIT Dept)</em></td>
<td>Help Instructors Collect and Analyze Data $8/hr<em>10hrs/week</em>15 weeks</td>
<td>1,200</td>
</tr>
<tr>
<td><strong>Total Budget</strong></td>
<td></td>
<td>$5,400</td>
</tr>
<tr>
<td><strong>Total Funding Request</strong></td>
<td></td>
<td>$4,200</td>
</tr>
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</table>
## Deliverables

<table>
<thead>
<tr>
<th>Area</th>
<th>Event</th>
<th>Deliverable</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 421</td>
<td>Teambuilding Modules (Mars Rover Activity) (8/30 to 9/13)</td>
<td>Self-inventory (Before)</td>
<td>8/29/2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-inventory (After)</td>
<td>9/19/2012</td>
</tr>
<tr>
<td>BUS 427</td>
<td>Team Project Cycle 1 (9/17 to 10/1)</td>
<td>Survey/ Written Items</td>
<td>10/8/2012</td>
</tr>
<tr>
<td></td>
<td>Team Project Cycle 2 (10/15 to 10/29)</td>
<td>Survey/ Written Items</td>
<td>11/5/2012</td>
</tr>
<tr>
<td></td>
<td>Team Project Cycle 3 (11/5 to 11/26)</td>
<td>Survey/ Written Items</td>
<td>12/3/2012</td>
</tr>
<tr>
<td>Grant</td>
<td>Progress Report to CERTI</td>
<td>Midterm Results</td>
<td>1/7/2013 (2/22/2013)</td>
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<tr>
<td></td>
<td>Education Research Symposium</td>
<td>Presentation</td>
<td>3/15/2013</td>
</tr>
<tr>
<td></td>
<td>Report to VPAA</td>
<td>Final Results</td>
<td>8/31/2013</td>
</tr>
</tbody>
</table>
Degree Program

- 33% Dual enrolled undergraduate plus MBA
- 60% MBA
- 7% MBA plus Other S&T Graduate Program (Degree or Certificate)
Student Status

- Full Time: 35%
- Part Time: 35%
- Distance: 30%
Employment Status

- Part Time: 33%
- Full Time: 47%
- Not Employed: 20%