Employing a Cognitive Theory of Collaboration to Guide Team Process and Tool Selection*

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Agenda

- Benefits and Downfalls of Teamwork
- Utility of a Cognitive Theory of Collaboration
- Defining Knowledge Categories
- Using Knowledge Categories for Team Process and Tool Selection
- Summary
Teams and Teamwork

- Team Types
  - Action teams
  - Planning teams
  - Thinking teams
- Benefits
  - Leverage resources
  - Increase productivity
  - Improve efficiency
Team Failures

- Three causes of failure in teams
  - Lack of resources
  - Lack of motivation
  - Lack of knowledge
Approach to Cognitive Failures in Teams

- Define Knowledge Requirements
  - Team members must know what they need to know (Liang, 1995)
  - Knowledge must be distributed among members of a team (Wegner, 1987)
  - Taskwork v. Teamwork (Canon-Bowers, 1993)
  - Collaborative dialog generates knowledge (Argote, 2000)
Cognitive Theory: Knowledge Enablers

- Objective: Identify knowledge gaps
- Twelve Enablers
  - 6 Planning and team readiness Enablers
  - 6 Real-time task, team and situation assessment enablers

<table>
<thead>
<tr>
<th>Planning/ Team Readiness</th>
<th>Real Time Assessment</th>
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<tbody>
<tr>
<td>• Goals</td>
<td>• Other’s activities</td>
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<tr>
<td>• Plan</td>
<td>• External situation</td>
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<td>• Dependencies</td>
<td>• Task progress</td>
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<td>• Team Familiarity</td>
<td>• Mutual understanding</td>
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<td>• Business Rules</td>
<td>• Plan viability</td>
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<td>• Task experience</td>
<td>• Decision factors</td>
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Utility of the Cognitive Theory of Collaboration

- Organizes crucial team knowledge into categories
- Help Teams:
  - Diagnose knowledge gaps
  - Recognize behavioral symptoms
  - Identify potential risks
  - Review recommendations
  - Track progress over time
Employing a Cognitive Theory of Collaboration

- Methods
  - Education of knowledge requirements and enablers
  - Collaboration Advisor™
  - Objective Metrics Evaluation (Noble and Kirzl, 2003)

- Important Factors
  - Involve full team
  - Multiple evaluations
Application of Cognitive Theory to Tool and Process Selection

- Objective: Select a tool or process that will help put the missing knowledge in to place
- Knowing your problem enables you to know your ideal solution
- Tools and processes both attempt to fix problems
- Avoid wasting resources on the wrong remedy
From Problems to Solutions

Example 1

- Symptoms:
  - Team is missing deadlines
  - Team members duplicating work

- Related Knowledge Enabler
  - Task Progress
  - Other’s activities

- Process Solutions
  - Schedule weekly team meetings
  - Post task status board in common meeting area

- Tool Solutions
  - Employ task tracking software
From Problems to Solutions (cont.)

Example 2

- Symptoms:
  - Information is not being shared
- Related Knowledge Enabler
  - Business Rules
- Process Solutions
  - Identify field experts within team
- Tool Solutions
  - Adopt knowledge management repository
Summary

- Cognitive gaps in teams can lead to failure
- Being aware of cognitive aspects of collaboration can reduce risk of failure
- Cognitive theory of collaboration organizes knowledge into categories
- Teams can recognize symptoms and risks, diagnose problems and identify requirements for needed solutions
- Team diagnosis can guide tool and process selection to put needed knowledge in place