Using technology to build effective student teams

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Why use teams in the classroom?

Offers the potential for:

• engaging students,
• cross-fertilizing ideas, and
• producing deep learning about complex content areas.

Unfortunately, the commitment and contribution to the team/task often varies among students. Negative outcomes include:

• Social loafing
• Conflict
• Trust issues

Why use technology to support classroom teams?

• An additional driver of team projects is to simulate real-world experiences
• Students are going to use technology whether you promote it or not
• Educating students on appropriate technology choices improves outcomes and enhances their learning
Classroom teams Do’s and Don’ts

• Do:
  – Provide team and technology training
  – Require a team contract
  – Provide sufficient time to complete project (extra)
  – Allow for some sort of peer evaluation
  – Instruct teams on explicit choices around when/how technology is used

• Don’t:
  – Let teams pick their technology
  – Allow members to use the peer evaluation as a weapon
  – Miss the opportunity to extract second-order learning
Modes of Working in Groups

<table>
<thead>
<tr>
<th>Same Time</th>
<th>Different Time</th>
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<tbody>
<tr>
<td><strong>Same Place</strong></td>
<td><strong>Different Place</strong></td>
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<tr>
<td>Traditional face-to-face meeting environment with or without technology</td>
<td>Participants join scheduled synchronous meetings with help of technology</td>
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<td>Team members communicate asynchronously using technology</td>
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Classifying collaborative technology

- Communication technology (email, voice mail)
- Conferencing tools (chat, shared apps, teleconferencing)
- Coordination tools (electronic calendars, polling, project management tool)
Research versus Practice

- Comprehensive effort to understand F2F versus virtual environments
- Reality is not a dichotomy
- New research focus – temporal patterning of technology use
Set of useful theories

- Media Richness
- Media Synchronicity
- Diversity and Technology
Technology choice: richness

Understanding Computer-supported Team Processes

Diversity:
- Surface-level Diversity
- Deep-level Diversity

Collaborative Technologies

Diversity Perceptions

Relational Interaction:
- Relational Conflict
- Cohesion

Group Context

Outcomes:
- Performance Satisfaction

Time

Interpreting theoretical/empirical findings

• Technology choice should be driven by fit not preference but supported through training

• Conventional wisdom – teams always benefit from starting out by meeting face-to-face – not born out in academic research, and not just for diverse teams

• Teams may very well benefit from interacting online first, developing an opinion about others’ ideas, and then potentially meeting face-to-face (where necessary, desired, and/or expected)

• Communication context must also pay attention to inclusion (i.e., team communication must include the whole team)
Nuance of real life

• Obviously, collaboration can involve face-to-face meetings AND collaborative technologies. So when do you do each?
  – Meetings (i.e., F2F) are best when consensus reaching is needed
  – Technological interaction is best for working on tasks and reporting progress
Classroom teams Do’s and Don’ts

• Do:
  – Provide team and technology training
    • Technology supported teams must understand feature and the dual task
      (communication and task accomplishment; conveyance and convergence)
  – Require a team contract
    • Develop shared expectations
  – Provide sufficient time to complete project (extra)
    • Online participation takes longer
  – Allow for some sort of peer evaluation
    • Avoid social loafing
  – Instruct teams on explicit choices around when/how technology is used
    • F2F- consensus (convergence)
    • Online – task, communication, conveyance

• Don’t:
  – Let teams pick their technology
    • They will pick what they know, not what they need
Not all problems are solved by adding manpower.

**Motivational Loss: Social Loafing**

- The reduction of individual effort exerted when people work in groups compared to when they work alone is known as **Social Loafing**.

- People carrying out all sorts of physical and mental (brainstorming, evaluating, monitoring & etc.) have been shown to exert less effort when they combine their efforts in a group situation.
Cost of coordination

**Ringelmann Effect**

- The tendency, first documented by Max Ringelmann, for people to become less productive when they work with others. This loss of efficiency increases as group size increases, but at a gradually decreasing rate.
Face-to-face sessions

• Anecdotally, preferred means for teams to build trust and relationships with each other.
• Set up systems for teamwork
• Make decisions
• Research support for:
  – F2F is more satisfying, easier, faster
  – F2F can be harmful for diverse teams
Challenges Facing Virtual Teams

Loss of face-to-face interaction

• Delayed development of shared vocabulary
• Delayed development of trust
• But virtual teams may form swift trust due to:
  • Time pressure
  • Shared goals
  • Clearly specified roles, teammates selected for their expertise and abilities
  • Task-focus
Challenges Facing Virtual Teams

Low social presence –
• Teammates may not feel connected to others on the team
• May mean less comfort, trust and openness

Low information richness –
• Many collaboration technologies are limited in their ability to transmit cues. The fewer cues transmitted the leaner the media.
• Teammates may overcome limitations of the technologies as they come to know each other and the task context

Information Overload -
• Easy communication can lead to too much information to process effectively
• Results in satisficing and less than optimal decision making

To capitalize on the benefits of diversity, teams must address differences in:
• Language
• Culture
• Media use
• Perceptions of the chosen media
Implementation Issues

Training
• Some collaboration technologies may require additional training
• Virtual teams are different from traditional face-to-face teams – training on the idiosyncrasies of virtual teams may be beneficial

Type of Task
• Simple tasks, like brainstorming may need only lean, text-based technologies. More complex tasks need richer media
• Kind of information to be shared – can it be shared via documents or must it be shared through common experience?

Security
• How will information be shared? Through Intranet, Extranet, Internet?
• From where will the teammates be working? From home? From a site location?
• Each of these suggest different security concerns.
Technology and decision making

General belief that technology can help decision makers by reducing satisficing behaviors – resulting in higher quality decisions.

- Promotes, greater search for alternatives
- Simultaneously, reducing information overload

However, technology is more helpful if it “fits” the decision task
Summary: Benefits of Virtual Teams for Organizations

- Greater flexibility
- Saves time and costs
- Increases communication and learning across organization
- Encourages appreciation of diversity