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

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Jassawalla, A., Sashittal, H., & Sashittal, A. (2009). Students' perceptions of social loafing: Its antecedents and consequences in undergraduate business classroom teams. *Academy of Management Learning & Education*, *8*(1), 42-54.

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

	Same Time	Different Time
Same Place	Traditional face-to-face meeting environment with or without technology	Team members communicate asynchronously using technology
Different Place	Participants join scheduled synchronous meetings with help of technology	Team members communicate asynchronously using technology

Source: Boundaryless Facilitation: Leveraging the Strengths of Face-to Face and Groupware Tools to Maximize Group Process, Metasystems Design Group and Catalyst Consulting Team.

Classifying collaborative technology

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

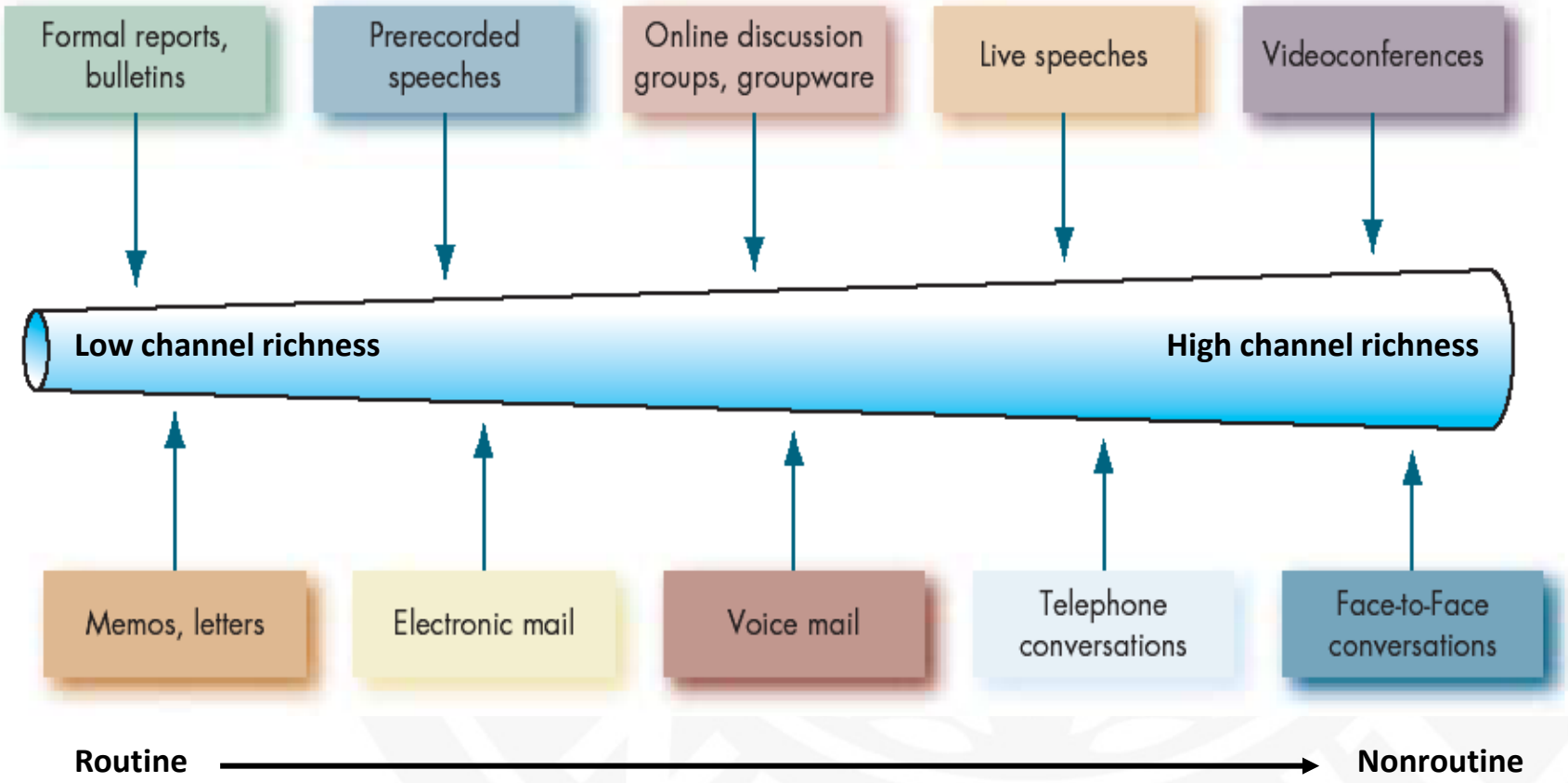
Research versus Practice

- 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



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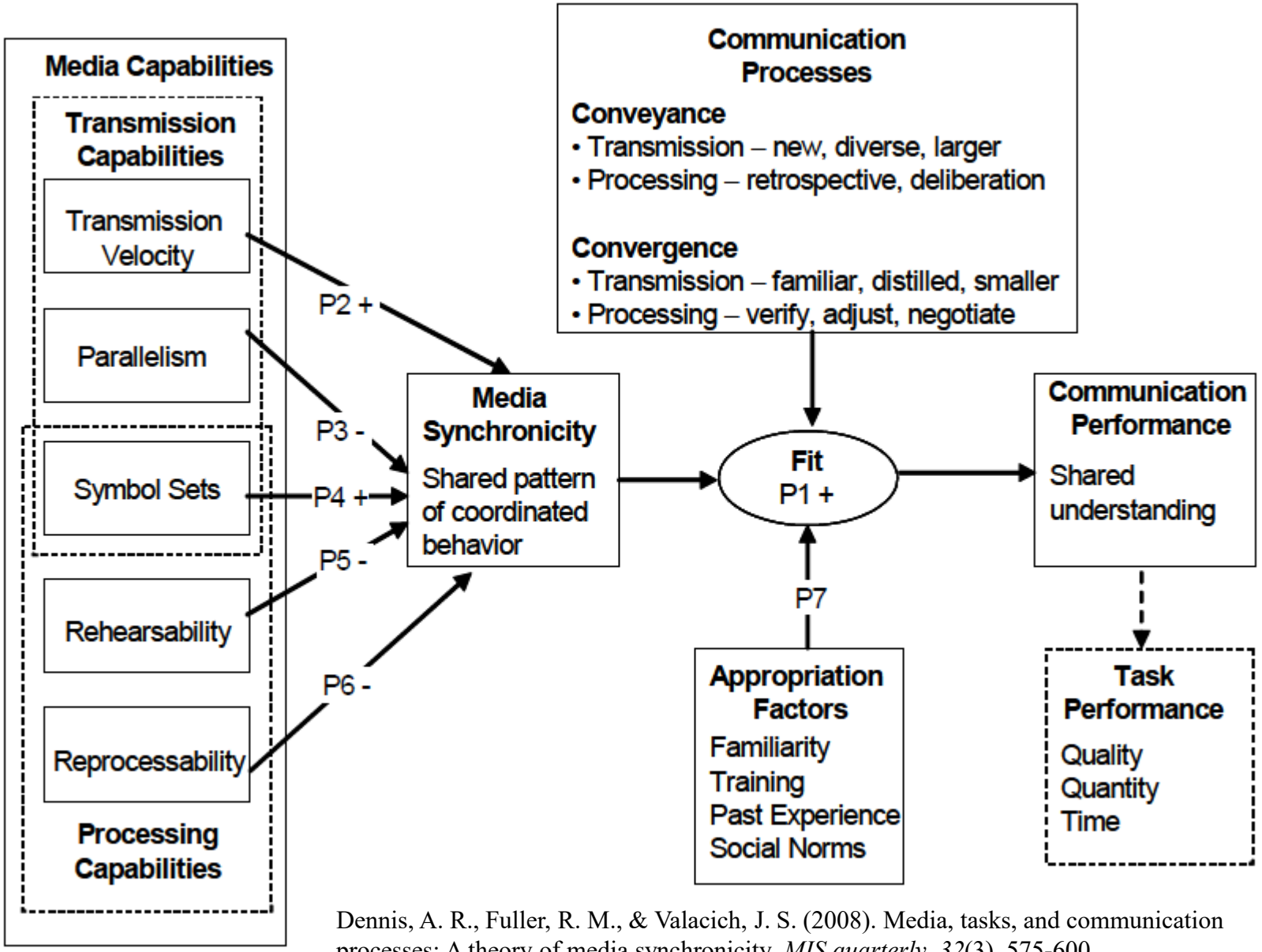
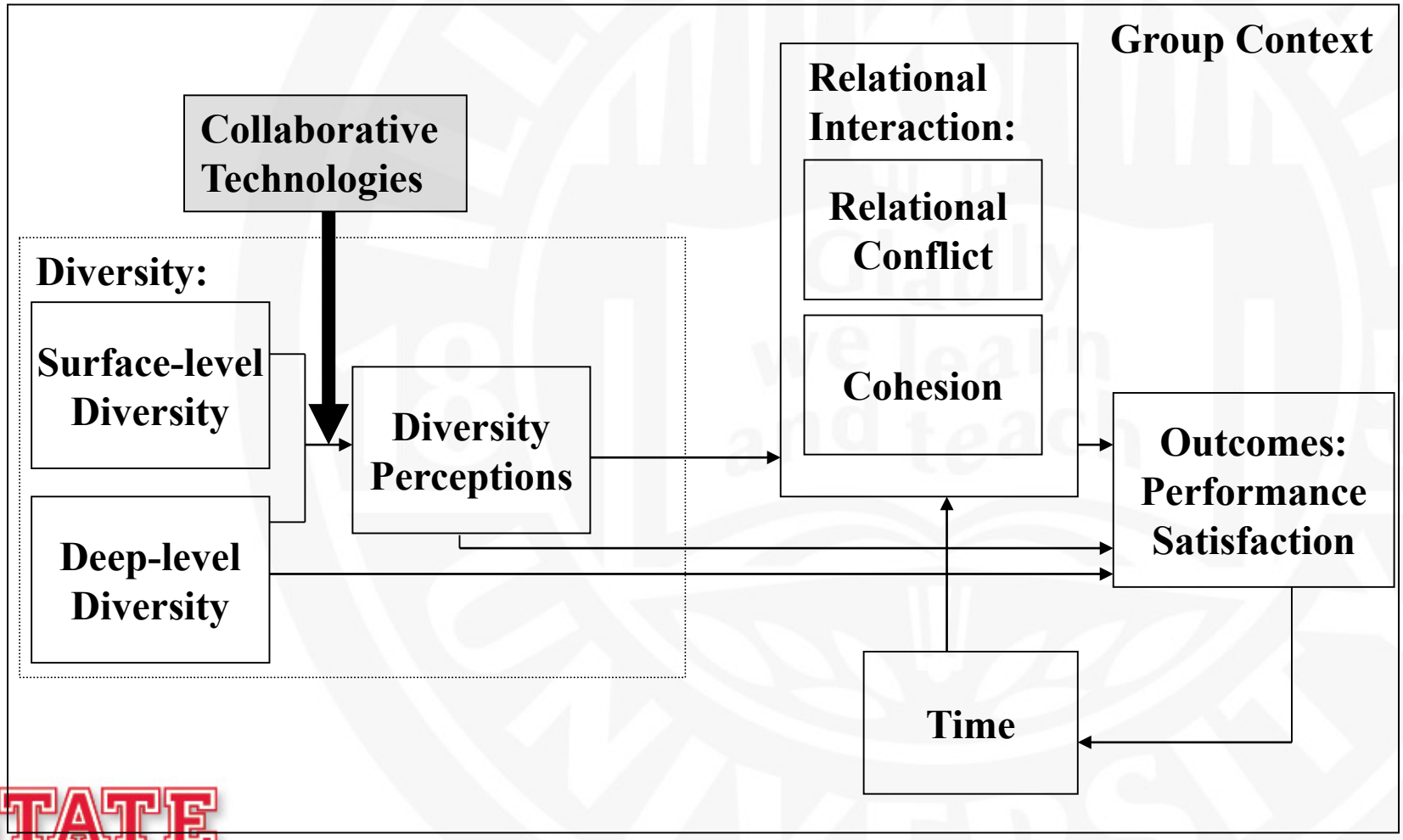
Source: Based on R.H. Lengel and D.L. Daft, "The Selection of Communication Media as an Executive Skill," *Academy of Management Executive*, August 1988, pp. 225–32; and R.L. Daft and R.H. Lengel, "Organizational Information Requirements, Media Richness, and Structural Design," *Managerial Science*, May 1996, pp. 554–72. Reproduced from R.L. Daft and R.A. Noe, *Organizational Behavior* (Fort Worth, TX: Harcourt, 2001), p. 311.

Technology fit: Synchronicity



Dennis, A. R., Fuller, R. M., & Valacich, J. S. (2008). Media, tasks, and communication processes: A theory of media synchronicity. *MIS quarterly*, *32*(3), 575-600.

Understanding Computer-supported Team Processes



Carte, T., & Chidambaram, L. (2004). A capabilities-based theory of technology deployment in diverse teams: Leapfrogging the pitfalls of diversity and leveraging its potential with collaborative technology. *Journal of the Association for Information Systems*, *5*(11), 4.

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.

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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.

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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