Accelerating Online Text-based Discourse via 3D Online Learning Environments

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The main points

- Adding a 3D online learning environment to existing text-based communications used for course discussion
  - accelerates rapport
  - greatly increases number exchanges
  - increases depth of discourse
  - sustains discourse longer over the semester
- Cognitive Scaffolding accelerates rapport building (presence)
3D Online Learning Environment

- Multi-User 3D Environment that support Collaborative Groupware and Unified Communications.
- Used since 2002 for selected CECS courses
- Typically used in a blended mode
- Research questions
  - Student satisfaction
  - Learning Outcomes
  - Discourse
The Initial Study

- Comparing courses taught using the same discourse requirements and similar assignments between the fall of 2004 and fall of 2005.
  - Internet Only, Web LMS (no face to face, no 3D OLE)
  - Internet Extended (multiple face to face and Internet Tools)
  - 3D OLE (3 face to face, 3D OLE, and Internet Tools)
- Each type consists of three or more courses over the 3 long semesters.
Avg Message Totals by Delivery Type

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Internet Extended (multi f2f + Inet)
+ 3D OLE (3 f2f meetings, 3D OLE, Inet)
Initial Discourse Analysis

• Internet Only (LMS)
  • The *majority of postings were only fulfilling the required discourse* parts of the assignments.
  • Students were more likely not to complete discourse assignments at the end of the semester.
  • The majority of postings not related to assignments are “Information Requests” from students to the Instructor.

• Face to Face Internet Extended
  • The *majority of postings were follow-up discussions* that went beyond the minimum requirements of the assignment.
  • The majority of messages not related to assignments, were messages between students - helping each other.

• 3D OLE and Limited Face-to-Face
  • The *majority of messages were students helping each other.*
  • Followed by students discussing course topics beyond the minimum requirements of the assignment.
  • Students were answering questions faster than the Instructor, who was answering postings within 4-8 hours.
Frequency of use impacts satisfaction

Figure 3: Frequency of Use Relative to Rating of Overall Experience

- Fall 2004
- Spring 2005
- Fall 2005
Cognitive Scaffolding

- Text-based communications alone requires extended contact between participants to build trust and connection - then significant discourse happens. Research shows this takes between 10-18 weeks.
- The 3D environment like video conference or meeting face-to-face increases what I am defining as cognitive discourse scaffolding.
- Cognitive Discourse Scaffolding
  - Mechanism to more quickly build discourse communities (Rapport)
  - Building trust
  - Creating Mental Images/Maps
Future direction

• Implement the 3-D OLE with WebCT delivered courses to see impact without face-to-face interaction that this study had.
Contact Information

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