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

Greg Jones, PhD
University of North Texas

http://courseweb.unt.edu/gjones
The main points

- Adding the use of a 3D online learning environment to existing text-based communications used for course discussion greatly increases, by as much as 4x, the amount of discourse.

- Student satisfaction and overall experience using the 3D OLE is tied to the amount of usage during the semester.

- Cognitive Scaffolding accelerates rapport building
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 study

- 102 students used the environment between the fall of 2004 and fall of 2005 in 12 CECS masters courses.
- The courses selected were all blended courses.
  - Meeting a few times in person and using the Internet to facilitate course discussion and delivery.
- The 3D OLE was used for course presentations and open discussions.
Internet-Only WebCT Course

Week

W1 W2 W3 W4 W5 W6 W7 W8 W9 W10 W11 W12 W13 W14 W15 W16

Avg Messages per Week

A1 A2 A3 MT A4 A5 FP

Courses Web-based and E-mail
+ 3D OLE with avg of 3 face-to-face meetings
Message Totals

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Initial Discourse Analysis

• Internet Only (LMS)
  • The majority of postings were only fulfilling the 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
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

Dr. Greg Jones
Dept. of Technology and Cognition
University of North Texas
gjones@unt.edu
http://courseweb.unt.edu/gjones