

SITE 2006, Orlando, FL

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

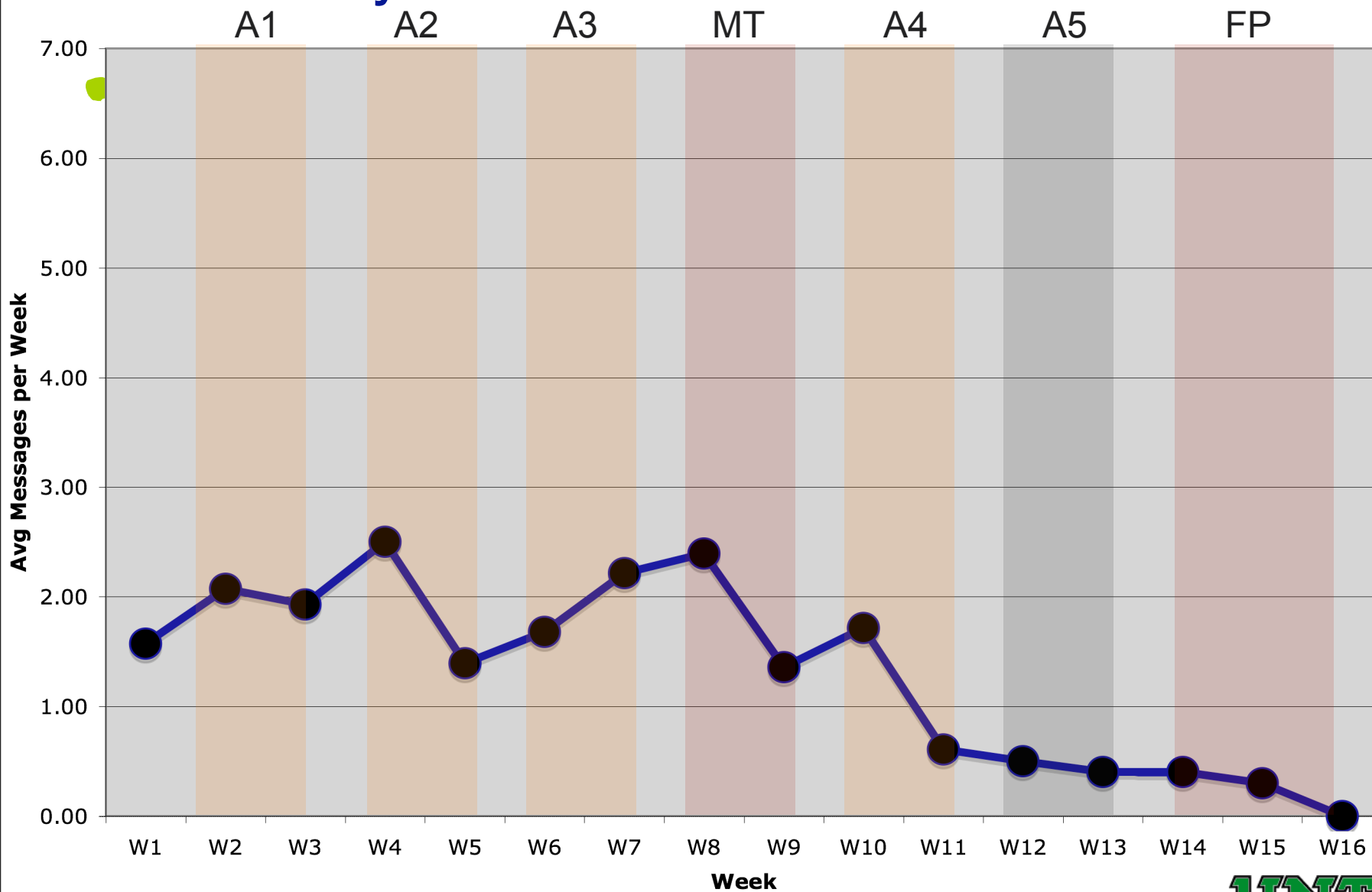
- Multi-User 3D Environment that support Collaborative Groupware and Unified Communications.
- Used since 2002 for selected CECS courses
- Typically used in a blended mode
- Research questions
 - Student satisfaction
 - Learning Outcomes
 - Discourse



The study

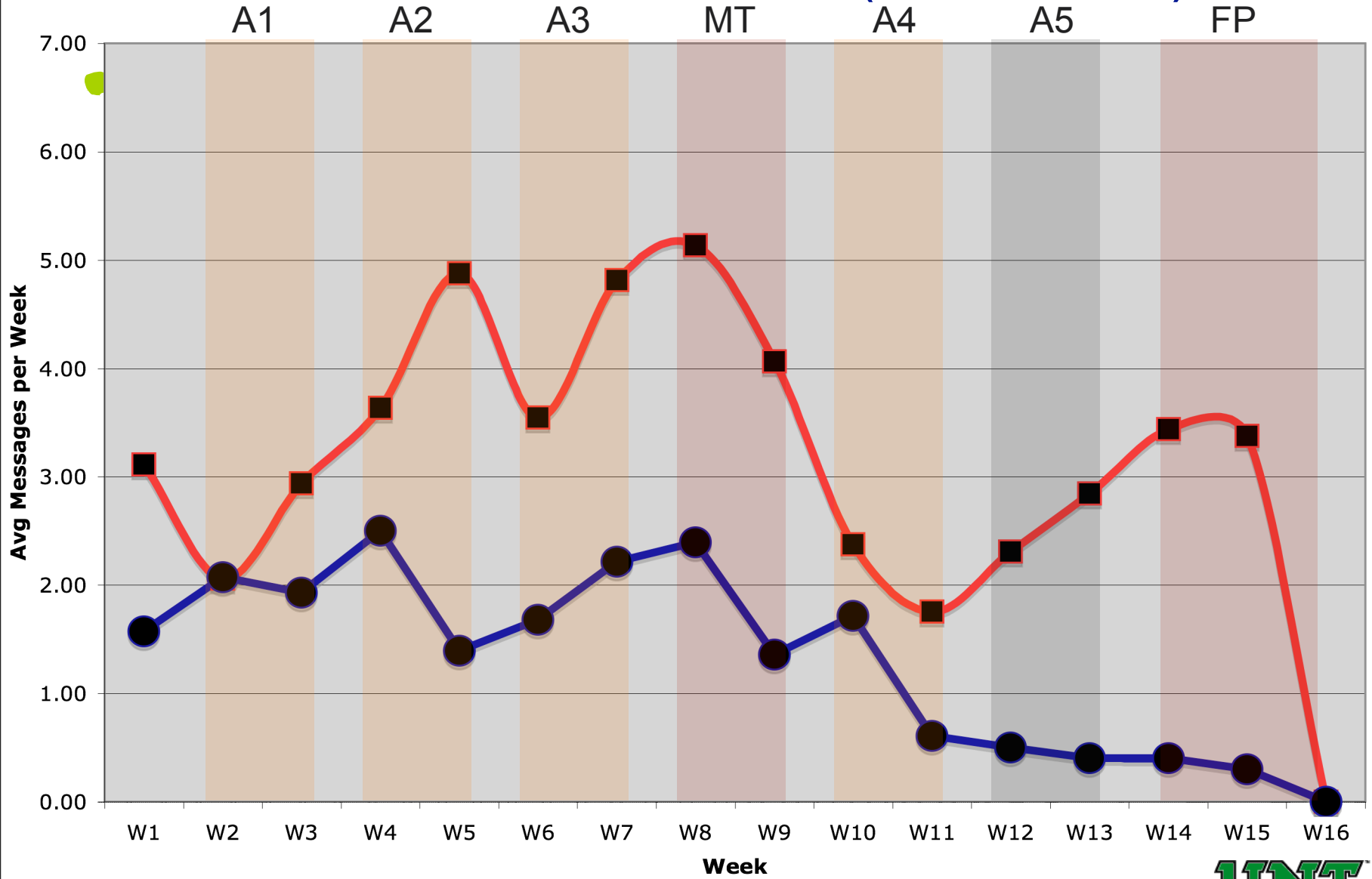
- 102 students used the environment between the fall of 2004 and fall of 2005 in 12 CECS masters courses.
- The courses selected were all blended courses.
 - Meeting a few times in person and using the Internet to facilitate course discussion and delivery.
- The 3D OLE was used for course presentations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

Internet-Only WebCT Course



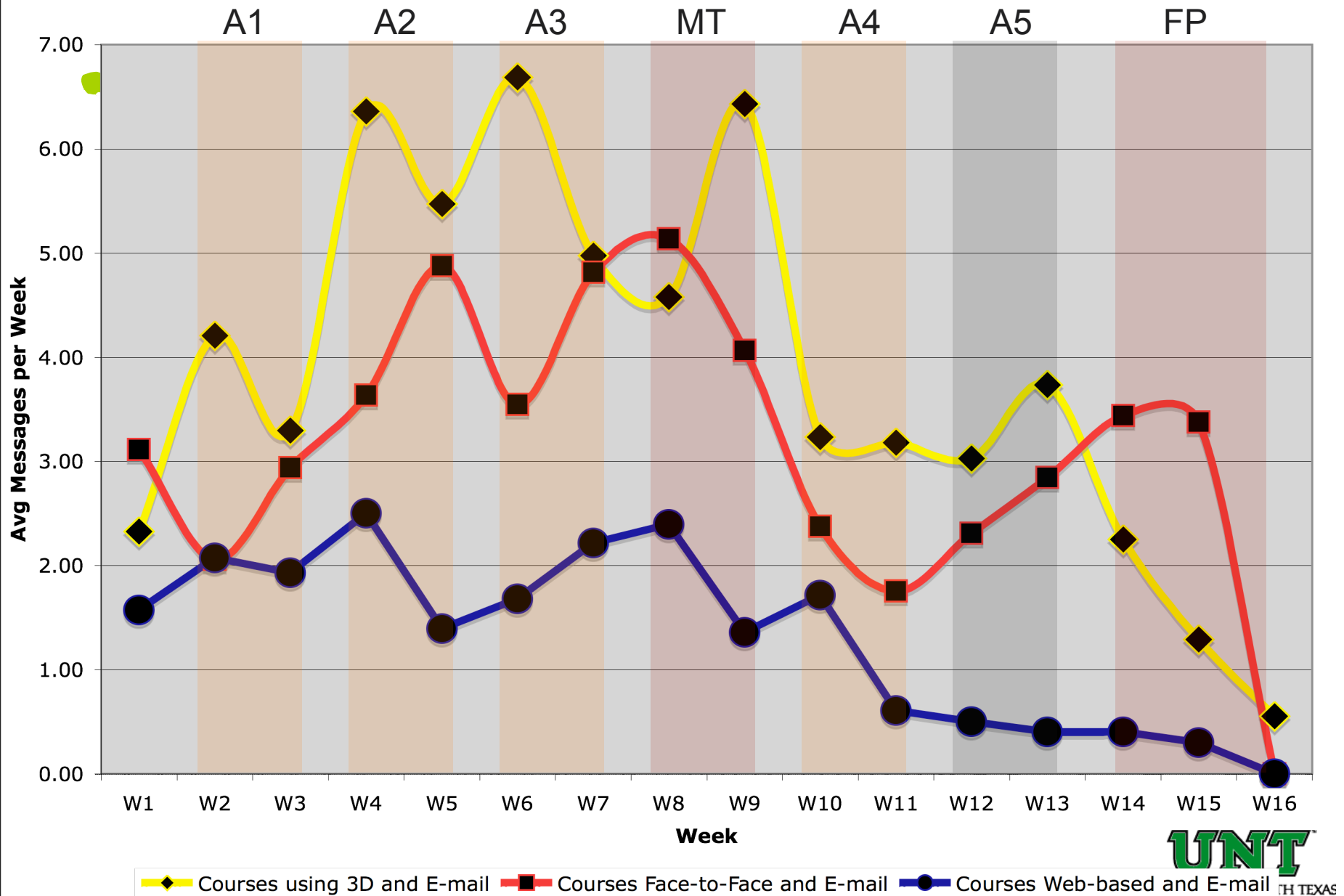
Legend: Courses Web-based and E-mail

+ Internet Extended Course (F2F + Inet)

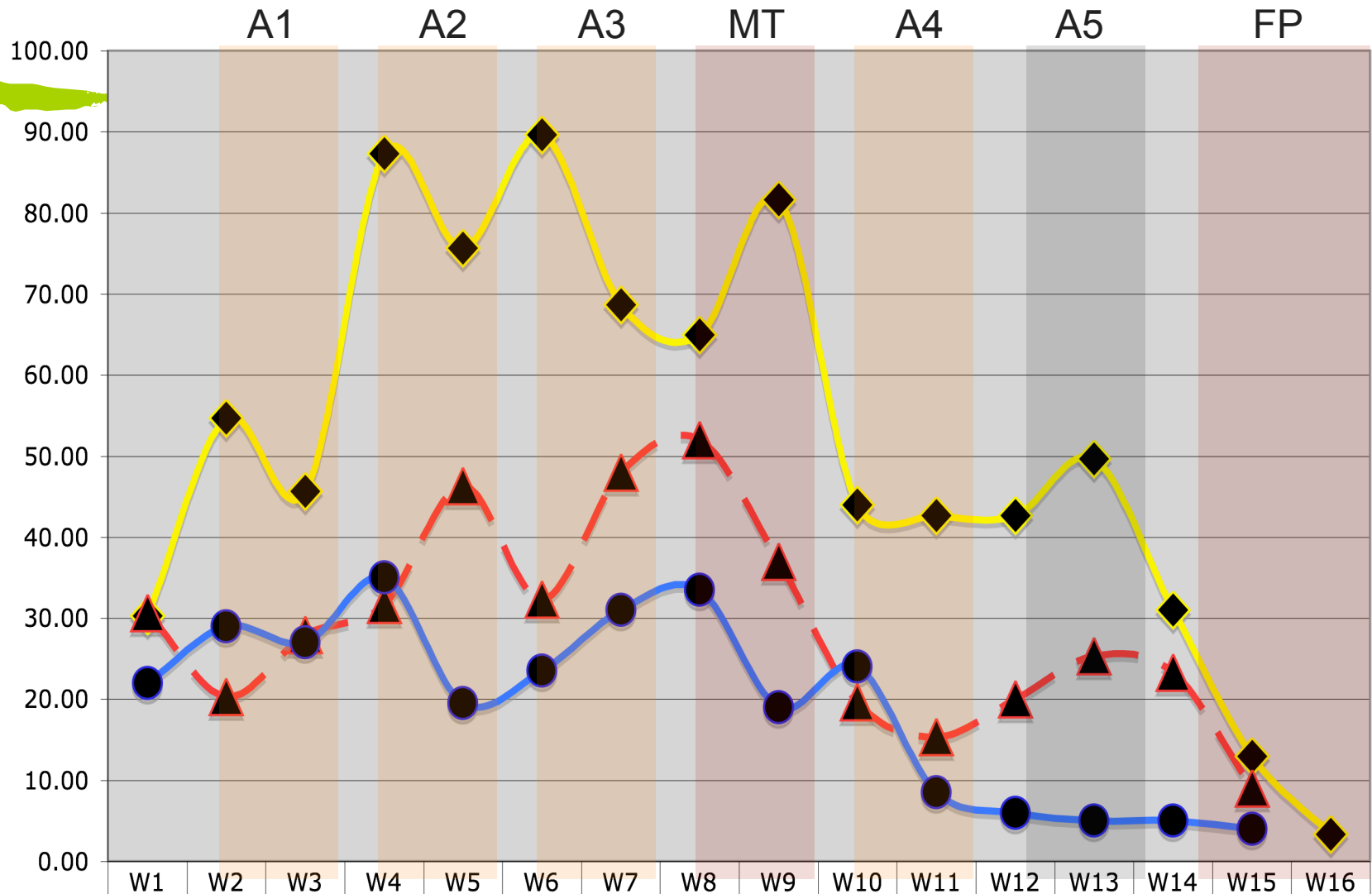


◆ Courses Face-to-Face and E-mail ● Courses Web-based and E-mail

+ 3D OLE with avg of 3 face-to-face meetings



Message Totals



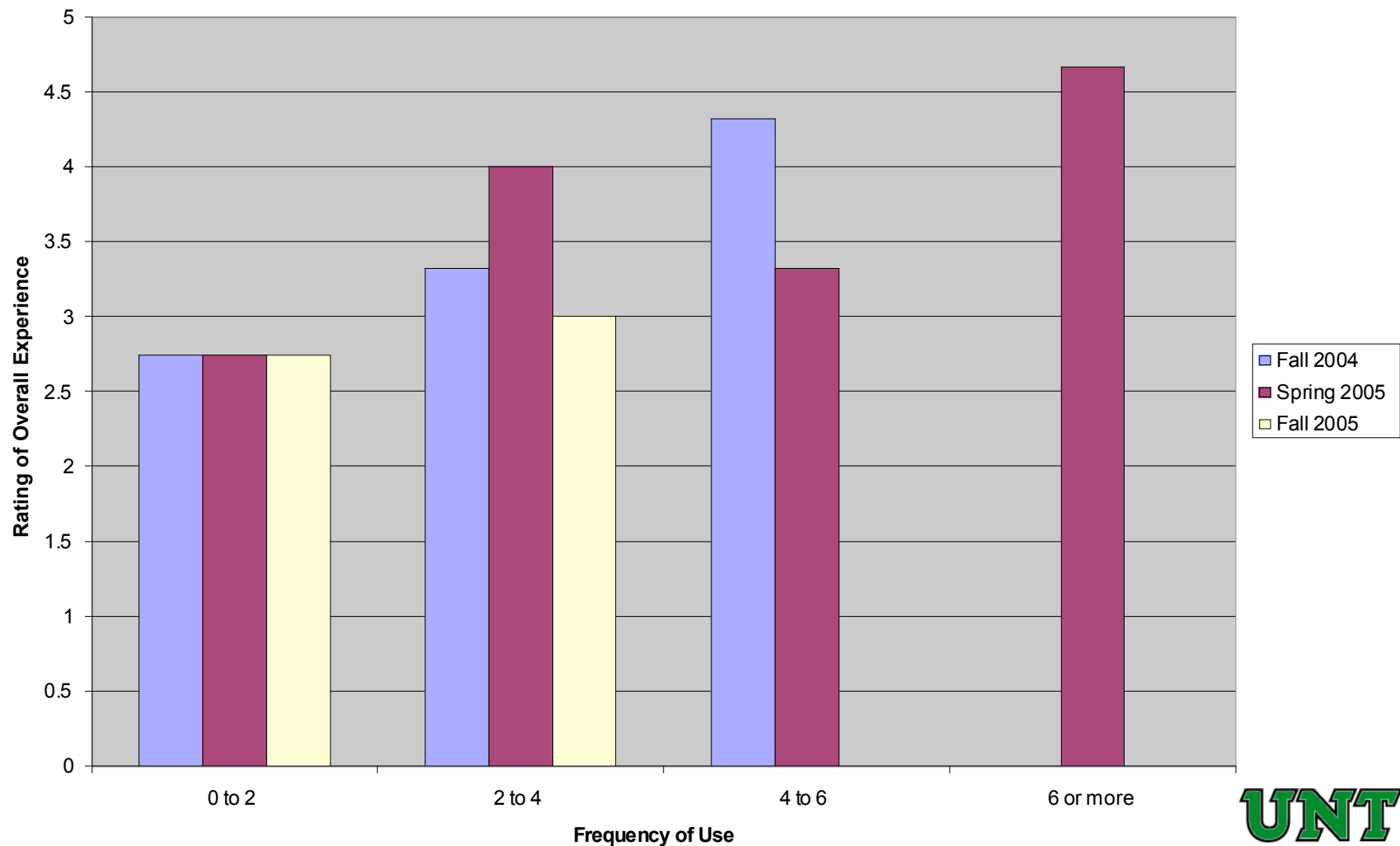
	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16
CRG/List	30.33	54.67	45.67	87.33	75.67	89.67	68.67	65.00	81.67	44.00	42.67	42.67	49.67	31.00	13.00	3.33
F2F/List	30.67	20.33	28.00	31.67	46.33	32.33	48.00	52.00	37.00	19.67	15.33	20.00	25.33	23.33	9.00	4.00
WebCT	22.00	29.00	27.00	35.00	19.50	23.50	31.00	33.50	19.00	24.00	8.50	6.00	5.00	5.00	4.00	4.00

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>