

Just a Lot of Bonk: 10+ Years of Technology Research, Results, and Reflections



**Curtis J. Bonk,
Indiana University**

<http://php.indiana.edu/~cjbonk>



10 Stories for 10+ Years

1. 1993-1994: Peace, dude, hop off the return key, save me some stress."
2. 1995: What if Vygotsky had lived to 100...
3. 1996: Do not ride your bike to work.
4. 1997: Look out for the Russians...
5. 1998: Do you believe in the power of sharing?
6. 1999-2000: Do you want to be target practice?
7. 2001: You were in, but you were never there.
8. 2002: Who needs a TICKIT?
9. 2003: Where is Disneyland?
10. 2004-2005: Data at your fingertips.

**Story #1 (1994): "Peace, dude, hop
off the return key, save me some
stress."**



Taxonomy: Level of Collaborative Tool (Bonk, Medury, & Reynolds, 1994)

- Level 0: Stand Alone Tools
- Level 1: E-mail and Delayed Messaging Tools
- Level 2: Remote Access/Delayed Collab Tools
- Level 3: RT Dialoguing and Idea Gen Tools
- Level 4: RT Collaboration (text only)
- Level 5: Cooperative Hypermedia
- Level 6: Tools That Don't Fit Nicely

Web Conferencing Tools

- VaxNOTES
- NiceNet
- WebCrossing
- Sitescape Forum
- COW
- FirstClass
- WebCT, Blackboard, Virtual U, etc.



Research on Electronic Cases

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. RT vs. Delayed Collab • Groups Preset by Major • Tchr Generated Cases • Local/Univ. Networks • Limited Instructor Mentoring | <ol style="list-style-type: none"> 2. Web-Based Conference • Grps Formed on Interest • Student Gen. Cases • World Wide Web • Extensive Instructor and Peer Mentoring |
|--|---|



Study #1: 1993/1994

(Bonk, Hansen, Grabner, Lazar, and Mirabelli, 1998)

- **Two Semester: VAXNotes vs. Connect**
- **Two Conditions: (1) Real-time vs. (2) Delayed**
- **Subjects = 65 secondary ed majors**
(5 grps: PE, Foreign Language, Social Studies, English, Math)
- **Mentors = limited instructor commenting**
- **Procedures:**
 - (1) Respond to 4 cases in small groups
 - (2) Respond to peer comments

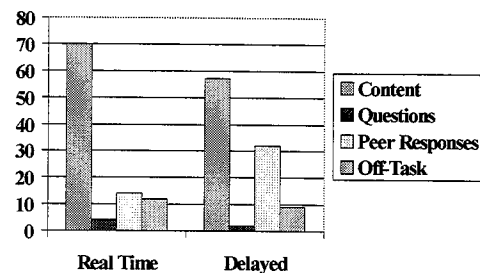
Research Questions: Study #1

1. What social interactions occur in real-time & delayed?
2. How code electronic social interaction patterns?
3. How do case size & complexity affect grp processing?
4. Do RT or delayed foster > discuss depth & quality?
5. Do shared experiences stimulate grp intersubjectivity?

Some Findings From Study #1

- **Delayed Collab > Elaboration**
 - 1,287 words/interaction vs. 266 words/interaction
- **RT Collab > Responses**
 - 5.1 comments/person/case vs. 3.3 comments/person
- **Low off-task behaviors (about 10%)**
- **Rich data, but hard to code**
- **Students excited to write & publish ideas**
- **Minimal q's and feedback**
- **Interaction inc. over time; common zones**
- **Some student domination**

Study #1. 1993-94



Example of real-time dialogue:

- **Come on Jaime!! You're a slacker. Just take a guess. (October 26, 1993, Time: 11:08:57, Ellen Lister, Group 5).**
- **How might he deal with these students? Well, he might flunk them. He might make them sit in the corner until they can get the problem correct...I don't know. (Um...hello...Jaime where is your valuable insight to these problems?) (October 26, 1993, Time: 11:19:37, Ellen Lister, Grp 5).**

Example of Delayed Dialogue:

Joyce's new system offers a wide variety of assessment forms. These different forms complement the diverse learning and test taking abilities of her students. Joyce seems to cover the two goals of classroom assessment with her final exam—to increase learning and increase motivation. Students will increase their learning because they will not just remember information to regurgitate on an exam, but instead they will store these items in their long-term memory and later may be able to make a general transfer. Joyce will increase student motivation because she has deviated from the normal assessment method expected by her students.

Joyce's test will probably be both reliable and valid considering that she implemented three different forms of tests. Joyce's test also might reduce test anxiety. If her students know what to expect on the test (they even wrote the questions) they more than likely will be less anxious on exam day... (January 31, 1994, Time: 19:28, Sarah Fenway, Language Group.)

Larry

- Entertaining,
- Creative and controversial,
- Indirectly intimidating,
- One who set own agenda,
- Very articulate and witty.

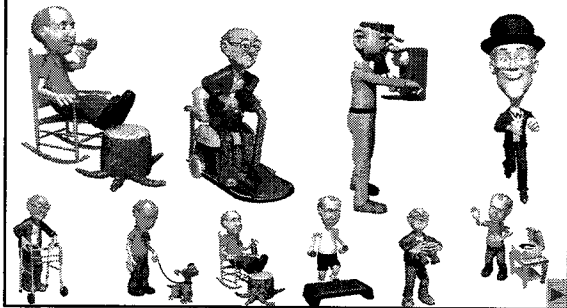


Sample of Larry's Comments....

- "Peace, dude, hop off the return key, save me some stress."
- "I am currently preparing my anti-groupwork support group."
- "I've noticed several people writing and saying that they would have done this or that brilliant or intuitive thing. I personally am brilliant or intuitive and I think other could use a little humility. This Karen's made some mistakes, but we all make mistakes, and when (dare I say), we are in her shoes, we should expect to make some of the same ones that confound her."



Story #2 (1995): What if Vygotsky had lived to 100...?

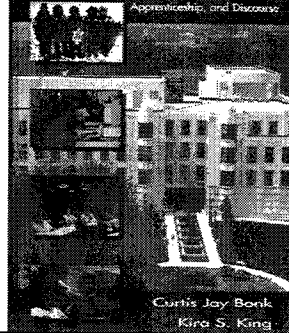


1994-1996 Computer Conferencing and Collaborative Writing (CCW) Group at Indiana



ELECTRONIC COLLABORATORS

Learnar-Content Technologies for Library, Apprenticeship, and Distance



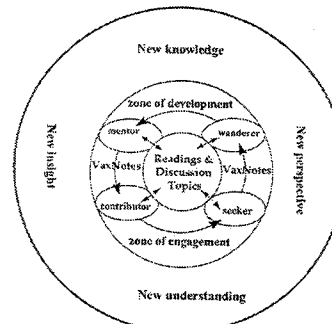
Curtis Jay Bank
Kira S. King

Sample Projects

1. Peer scaffolded support with technology.
2. Critical thinking with tech supports.
3. PBL situations and role play
4. Scaffolded learning from the Arctic.
5. Forms of online e-mail assistance.
6. Bring experts to teach at any time.
7. Online case learning and exam preparation.
8. Alternating class and online activities.
9. Roles in electronic discussions.
10. Structure electronic role play.



Patterns of Knowledge Construction in Electronic Discussion (Zhu, 1998)



Adventure Learning
 Purpose: engage in adventurous study of the global environment. (e.g., Telepresence or virtual fieldtrips, ask an expert forums, cross-classroom collaboration, debate forums, online communities, MayaQuest, the Jason Project)

Adventure Learning Findings (Bonk & Sugar, 1998)

Amount of Mentoring

Task Structuring	5%
Feedback	25%
Questioning	35%
Cog Structuring	18%
Instructing	15%
Management	3%

Knowledge	35%
Conceptual	25%
Application	15%
Procedural	10%
Attitudinal	15%

Aspects within Aspects (Cooney, 1998)

%contributed idea units within types of discourse

Chat Box - Content	~25%
Chat Box - Task	~15%
Chat Box - Off-task	~10%
Web - Content	~25%
Web - Task	~15%
Web - Off-task	~10%
Free Med - Content	~25%
Free Med - Task	~15%
Free Med - Off-task	~10%

Implications: Build Courses Based on Sociocultural Principles (Bonk, 1998)

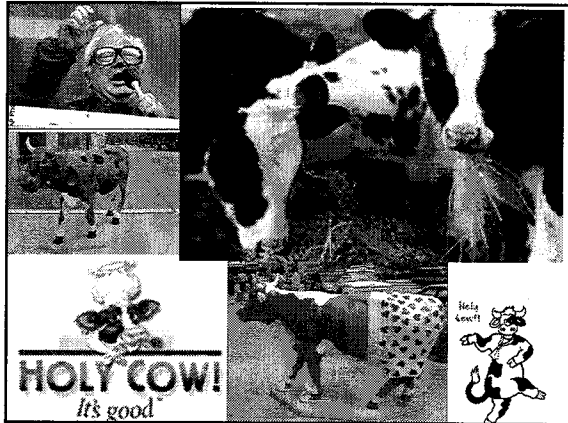
Smartweb Activities <ul style="list-style-type: none"> • Weekly Chapter Activ • Starter-Wrapper Disc • Personal Profiles • Student Portfolios • Feedback on Portfolios • Links Prior Semesters • Field Reflections • Field Observ Case Disc • Café Latte 	Sociocultural Link <ul style="list-style-type: none"> • Connect to Experience • Recip Teach & Dialogue • Build Intersubjectivity • Dynamic Assessment • Scaffolding within Zones • Modeling and Legacy • Apprentices Learning • Scaffolded & Authentic • Shared Knowledge
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Story #3 (1996): Do not ride your bike to work.

Conferencing On Web (COW) (1996-2000)

Three Basic Levels:

1. Conference (public or private)
2. Topic (e.g., special education)
3. Conversation (e.g., reading rewards)



Purpose of COW Project

- Students in field experiences write cases
- Teachers and students from around the world provide electronic mentoring
- Authentic cases and mentoring transform learning environment
- Helps preservice teachers understand the role of technology in education

The Center for Excellence in Education (CEE)
at Indiana University

the city web's
COW
CONFERRING
ON THE WEB

Welcome to COW. This system was graciously donated. We hope you enjoy it!

If you would like to use COW, click the "Enter COW" button and use guest as the login name and cow as the password.

If you have questions or comments, please contact Steve Adkins at adkins@indiana.edu.

[About COW](#) [Enter COW](#) [Lobby](#)

Finland_Cases_Fall98

You are the instructor for this class. (Conference Management) is available.

Oulun yliopisto
UNIVERSITY OF JYVÄSKYLÄ

(Click on the security logo above to see this web site.)

Welcome to the Finland Conference! It has been created for you to exchange questions, answers, and ideas with other students, faculty and teachers during your field experience. You can also return to the conferences for Finland_Cases_Fall98 and the International class.

Some of the topics listed below are RESTRICTED to other students, faculty or teachers. Some topics are PUBLIC and anyone may participate. The Dr. Our Site and Steve Adkins will act as the "moderator" in this conference, and they can read ALL messages.

[New!](#) A [chat](#) system has been created to help you become familiar with this online system and program.

Topic:

[Number](#) [New](#) [Topic](#) [Home](#)

Indiana_Cases_Fall98 - Microsoft Internet Explorer

Address: http://www.indiana.edu/cee/cow/cow/now/cow/indiana_Cases_Fall98

topics:

Number	New	Topic Name
100	1	Bad Global Problems
102	76	Ilkka's Questions-Answers
103	86	Classroom Management-Questions and Answers-Feedback
109	8	Elementary Cases, Math-Science
106	13	Elementary Cases, Reading-Writing
108	5	Elementary Cases, Social Studies-Other
110	94	Elementary Cases, Math-Science
111	25	Elementary Cases, Math-Science
112	7	Elementary Cases, Math-Science
113	74	Elementary Cases, Math-Science
114	19	Elementary Cases, Math-Science
116	10	Elementary Cases, Math-Science
118	31	Elementary Cases, Math-Science
120	76	Elementary Cases, Math-Science
122	33	Elementary Cases, Math-Science
123	3	Elementary Cases, Math-Science
124	16	Elementary Cases, Math-Science
125	21	Elementary Cases, Math-Science
126	2	Elementary Cases, Math-Science
127	11	Elementary Cases, Math-Science
130	0	Elementary Cases, Math-Science
132	0	Elementary Cases, Math-Science
134	30	Elementary Cases, Math-Science
136	1	Elementary Cases, Math-Science

Finland_Cases_Fall98 Topic 202 - Microsoft Internet Explorer

Address: http://www.indiana.edu/cee/cow/cow/now/cow/Finland_Cases_Fall98

(Conference Management) is available.

by Maarit Sasavakunnas (maarith)

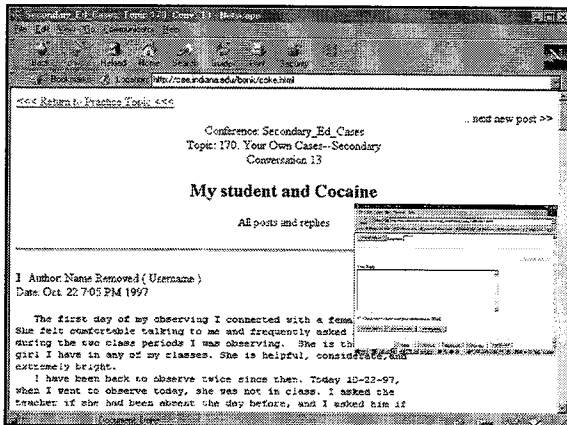
Date: Sep 10 11:50 PM 1998

To [add a case](#), click on one of the "conversations" listed below.
 To [add a case](#), click on the [New](#) button.

Recent Conversations for Finland_Cases_Fall98, Topic 202: [COWSearch]

Number	Total	New	Conversation
5	11	0	WIKIILIN KÄYTTÖOHJEET - OMA KÄYTTÖKÄSIKIRJA
6	11	0	OPETTAJAN KÄYTTÖOHJEET
7	11	0	OPETTAJAN KÄYTTÖOHJEET
8	11	0	OPETTAJAN KÄYTTÖOHJEET
9	11	0	OPETTAJAN KÄYTTÖOHJEET
10	11	0	OPETTAJAN KÄYTTÖOHJEET
11	11	0	OPETTAJAN KÄYTTÖOHJEET
12	11	0	OPETTAJAN KÄYTTÖOHJEET
13	11	0	OPETTAJAN KÄYTTÖOHJEET
14	11	0	OPETTAJAN KÄYTTÖOHJEET

conversation number Size days ago



Problems Solved By COW

- Student isolation in field experiences
- Lack of community/dialogue among teacher education participants
- Disconnectedness between class and field experience
- Limited reflective practices of novice teachers
- Need for appreciation of multiple perspectives

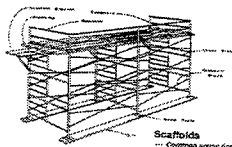
Quantitative Methods

Average results for prior to TITLE (TITLE):

- Participants per semester: 130 (>300)
- Cases per semester: 230 (624)
- Cases per student: 1.75 (same 1.80)
- Average responses per case: 4.5 (3.9)
- Average words per case: 100-140 (198)

Frequent Case Topics

Topic	Number of Cases
Management	312
Motivation	185
Instructional Approaches	178
Individual Differences (special education and gifted)	152
Hot Topics (e.g., teacher burnout, violence in school, corporal punishment, and drugs and alcohol)	83
Development (physical, cognitive, and social/emotional)	70
Behaviorism and Social Learning Theory	57



Types of Heavy Scaffolding:

1. Social Acknowledgement
2. Questioning
3. Direct Instruction
4. Modeling/Examples
5. Feedback/Praise
6. Cognitive Task Structuring
7. Cognitive Elaborations/Explanations
8. Push to Explore
9. Fostering Reflection/Self Awareness
10. Encouraging Articulation/Dialogue Prompting
11. General Advice/Scaffolding/Suggestions
12. Management

Bonk, Angeli, Malikowski, & Supplee, 2001)



Transcript Results

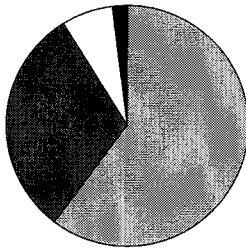
A. Peer Content Talk

- 31% Social Acknowledgments
- 60% Unsupported Claims and Opinions
- 7% Justified Claims
- 2% Dialogue Extension Q's and Stmts

B. Mentor Scaffolding

- 24% Feedback, Praise, and Social
- 24% General Advice and Suggestions
- 20% Scaffolding and Socratic Questioning
- 16% Providing Examples and Models
- 8% Low Level Questioning
- 8% Direct Instruction & Explanations/Elab

Study #3. Fall, 1997



■ Unsupported
■ Social
□ Justified
■ Extension

Bonk, Malikowski, Supplee, & Angeli, 1998

Overall Major Findings

- COW enhanced student learning
 - provided a link between classroom and field; connected to textbook concepts
 - encouraged learning about technology
- COW extended student learning
 - students got feedback from multiple sources and outside their community
 - students saw international perspective
- COW transformed student learning
 - students took ownership for learning
 - students co-constructed knowledge base

Qualitative Themes Continued...

- Students were attracted to cases that...
 - had interesting titles
 - were on familiar topics
 - were on controversial topics
 - they had opinions about
- Peer feedback was appreciated but not deep
- Mentor feedback was apprec. & motivating

Study: COW, Spring 1998

(Bonk, Malikowski, Supplee, & Dennen, 2000)

- Two Month Conference (One Condition)
 - 3 discussion areas (IU, Finland, and Cultural Immersions)
- Subjects = 110 students
(80 US and 30 Finnish students)
- Mentors = 2 AIs, 1 supervisor, 4 coop tchrs, 3 conference moderators.
- Videoconferences + Web Conferences

Finnish Cases Were Longer and more Reflective and Often Co-Authored...

Lets consider a math class in an elementary school as an example. Often a teacher teaches the new subject area and after that pupils practice counting those exercises. When a pupil has finished s/he receives extra exercises, or s/he is asked to do some work in other subjects but s/he is not allowed to continue further in the math book. Should the pupil be allowed to continue further on her/his own if s/he wants to? There is a danger that if s/he continues s/he will make more mistakes than if s/he waits until the teacher has taught the next step in the subject area. However, is it dangerous to do mistakes? Do teachers suppose that outside school there is always someone to tell what to do and how to do it in a right way?

Marya Ford Washington states in her summary: "It is painful to consider that a good portion of America's gifted and talented students spend most of their elementary and middle school careers learning to be average. It is even more painful to admit that they usually succeed." The same seems to apply to Finland. How could we solve this problem? Maarit & Maija

Vertical Mentoring Examples

9. Author: Jerry Cochey (Mentor)

Date: Mar. 11 1:46 PM 1998

To shift from teacher centered classrooms to child centered classrooms and learning takes time, patience and a commitment to the idea that students are responsible for their own learning. Even in this age of enlightenment(?), we think that a quiet, teacher controlled classroom shows learning, while research shows that active, talking, sharing of learning experiences with peers is more productive. Be patient, it takes a long time to have students change to being responsible for their own.

Horizontal Finnish Mentoring

12. Author: Leena Date: Mar. 30 11:52 AM 1998

This case is something I feel very close to. I have been trying struggle with finding ways to be a teacher in a new way, trying to think everything from the students' perspective, to challenge my own old traditions of teaching and try to seek ways which the I could find ways of studying things together with the students. What really puzzles me is that these different "projects" have had such extremely different lives.....What I really don't know yet is how to be a proper supporter of these processes for students... - Leena

Justified Statement (Finnish)

3. Author: Kirsi

Date: Mar. 6 8:11 AM 1998

Why not let the student study math further by himself and the teacher could help him whenever the teacher has time. At least some of the math study books are so designed that one page has examples that teach you how to solve the problem and then on the next page there are exercises. I personally hate being said 'wait' since when I'm interested in something I want to go on and learn more and not wait. This way I think the child learns to be responsible of his own learning. If I quote dear mr Vygotsky here again, the teacher should be sensitive to see where the child's proximate zone of development is and to help him 'over' it. The teacher's task is not to try to keep the child on the level he has reached but to help him learn more if he is interested...

Unjustified Statements (US)

24. Author: Katherine

Date: Apr. 27 3:12 AM 1998

I agree with you that technology is definitely taking a large part in the classroom and will more so in the future with all the technological advances that will be to come but I don't believe that it could actually take over the role of a teacher...but in my opinion will never take over the role of a teacher.

25. Author: Jason

Date: Apr. 28 1:47 PM 1998

I feel technology will never over take the role of the teacher...I feel however, this is just help us teachers out and be just another way for us to explain new work to the children. No matter how advanced technology gets it will never be able to...

26. Author: Daniel

Date: Apr. 30 0:11 AM 1998

I believe that the role of the teacher is being changed by computers, but the computer will never totally replace the teacher... I believe that the computers will eventually make teaching easier for us and that most of the children's work will be done on computers. But I believe that there will always be the need for the teacher.

Indicators for the Quality of Students' Dialogue (Angeli, Valanides, & Bonk, 2003)

ID	Indicators	Examples
1	Social acknowledgement/ Sharing/Feedback	Hello, good to hear from you...I agree, good point, great idea
2	Unsupported statements (advice)	I think you should try this....This is what I would do...
3	Questioning for clarification and extend dialogue	Could you give us more info? ...explain what you mean by...?
4	Critical thinking, Reasoned thinking-judgment	I disagree with X, because in class we discussed....I see the following disadvantages to this approach....

TITLE Network
 Fair Witness: Dr. Curt Bonk (mailto:cbonk@eduserv.nl)
 Welcome to "The Interdisciplinary Teacher Learning Exchange" (ITLE). Note, you can discuss problems seen in schools, write case situations, ask for feedback, or joke with peers in the cafes.
 Topics:

Number	New	Topic Name
100	50	The Interdisciplinary Cafe
200	60	Class Management-General & Class Planning
210	166	Class Management-Instructional & Behavior Issues
220	59	Class Management-Real Educational Strategies/Plans
250	39	Classroom Management for Classroom - working on best practices
270	28	Classroom Management-Instructional Strategies
280	60	Classroom Management-Instructional Strategies-Working on Best Practices
300	60	Classroom Management-Instructional Strategies-Working on Best Practices
320	60	Classroom Management-Instructional Strategies-Working on Best Practices
340	60	Classroom Management-Instructional Strategies-Working on Best Practices
360	60	Classroom Management-Instructional Strategies-Working on Best Practices
380	60	Classroom Management-Instructional Strategies-Working on Best Practices
400	60	Classroom Management-Instructional Strategies-Working on Best Practices
420	60	Classroom Management-Instructional Strategies-Working on Best Practices
440	60	Classroom Management-Instructional Strategies-Working on Best Practices
460	60	Classroom Management-Instructional Strategies-Working on Best Practices
480	60	Classroom Management-Instructional Strategies-Working on Best Practices
500	60	Classroom Management-Instructional Strategies-Working on Best Practices
520	60	Classroom Management-Instructional Strategies-Working on Best Practices
540	60	Classroom Management-Instructional Strategies-Working on Best Practices
560	60	Classroom Management-Instructional Strategies-Working on Best Practices
580	60	Classroom Management-Instructional Strategies-Working on Best Practices
600	60	Classroom Management-Instructional Strategies-Working on Best Practices

Cases for Undergraduate Educational Psychology Classes
 These are cases originally written by students during the field observation in real schools in 1997-98, which have been reorganized for this web site by Gary & Katrina Dayton.
 Note: These are directly linked to chapters in the upcoming edition of the Shauman, J. and Biehler, R. F. (2000). *Psychology Applied to Teaching*, sixth edition. Dr. Bonk will be a technology contributor to this edition.
 Chapter 1: Applying Psychology to Teaching
 Case A: How do you spell enormous? (online discussion for Case 1.A)
 Case B: The results are in, so listen up! (online discussion for Case 1.B)
 Chapter 2: Stage Theories of Development
 Case A: Too formal or not too formal? (online discussion for Case 2.A)
 Case B: A little assistance, please. (online discussion for Case 2.B)
 Chapter 3: Age-Level Characteristics
 Case A: Who does popularity hurt? (Case feedback) (student feedback) (online discussion for Case 3.A)
 Case B: Girls to the left, boys to the right. (online discussion for Case 3.B)
 Chapter 4: Understanding Student Differences

Chapter 9: Cognitive Learning Theories and Problem Solving

Case A: Making things meaningful.

Case Introduction/Commentary

Cognitive theories of learning stress the importance of making learning meaningful. It is not enough for teachers to simply present their material. Rather, cognitive theories believe that teachers have an obligation to help students engage the material so that students can develop their own meaning. The following case exemplifies cognitive learning theory.

Case from Preservice Teacher

I am observing an eighth grade science class. The teacher does some fun things. The last time I went there they were studying the difference between living things and non-living things. One of the students said that all living things move. The teacher continued with the discussion obtaining different answers from a variety of students. A little later into the discussion, the teacher decided to test the statement - all living things move. It was the teacher's intent to prove that not only living things move. The teacher asked for the students who had not washed their hair that day to come to the front of the room. Once they were there, he had each student shake his or her head over two pieces of cardboard that had caughor in between them. Then he shook the cardboard over a coin dish with water in it. When the caughor fell the water in behind the hair were busy swimming.

Online Discussion: Case A in Chapter 9

[Post a New Message | Subscribe | Search | Personal Display]

Welcome!

Message Index

All Messages



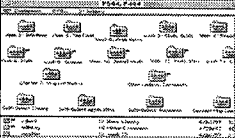

5 of 6 Messages Displayed
(Previous 70 added during)

- [great teacher](#)
Last Message: Wednesday, 14 April 1999, at 8:59 p.m.
- [Missing Living Organisms?](#)
Sent: Wednesday, 10 March 1999, at 10:33 a.m.
- [Missing Living Organisms?](#)
Case: Wednesday, 10 March 1999, at 11:22 a.m.
- [Re: Missing Living Organisms?](#)
Re: Wednesday, 10 March 1999, at 7:58 a.m.
- [Re: Missing Living Organisms?](#)
In Reply To: Wednesday, 10 March 1999, at 7:45 p.m.
- [Re: Missing Living Organisms?](#)
From: Wednesday, 10 March 1999, at 8:44 p.m.

Caseweb Visions

- Intros, Expert Commentaries, Reviews
- Expanded and Shrunken Case Views
- Hyperlink Options
- Conceptual Labels—chapters, themes, ideas
- Role Taking Options
- Mentoring Scaffolds/Questions
- Forced Counterpoints
- Sample Mentor and Peer Feedback
- Case Comparison Statistics

Story #4 (1997): Look out for the Russians...

Spring of '97 (FirstClass)

Content Analysis of Online Discussion in Ed Psych
(Hara, Bonk, & Angeli, 2001, Instructional Science)

Purpose and Questions of this Study

- To understand how graduate students interact online?
- What are inter patterns with starter-wrapper roles?
- What is role of instructor in weekly interactions?
- How extensive is social, cog, metacog commenting?
- How in-depth would online discussions get?
 - And can conferencing deepen class discussions?

Dimensions of Learning Process (Henri, 1992)

1. **Participation** (rate, timing, duration of messages)
2. **Interactivity** (explicit interaction, implicit interaction, & independent comment)
3. **Social Events** (stmts unrelated to content)
4. **Cognitive Events** (e.g., clarifications, inferencing, judgment, and strategies)
5. **Metacognitive Events** (e.g., both metacognitive knowledge—person, and task, and strategy and well as metacognitive skill—evaluation, planning, regulation, and self-awareness)

Graduate Course Findings

• Participation

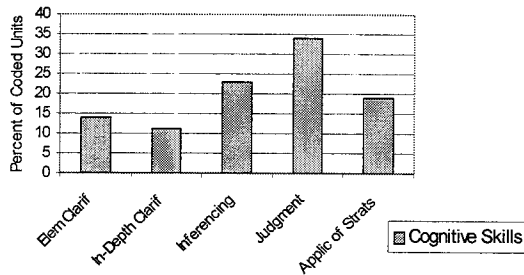
- + Most participated once/week
- + Student-centered & depend on starter
- + Posts more interactive over time
- + Lengthy & Cognitively Deep
 - Ave post: 300 words & over 18 sentences
 - From 33 words to over 1000 words
- Some just satisfied course requirements

Findings Continued

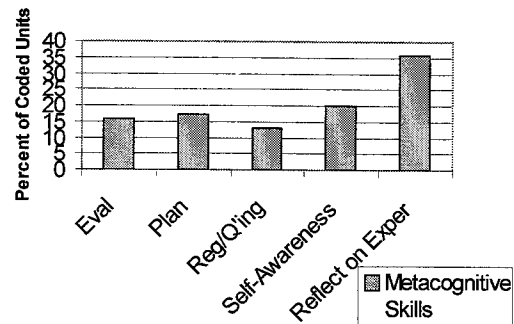
(see Henri, 1992)

- **Social** (in 26.7% of units coded)
 - social cues decreased as semester progressed
 - messages gradually became less formal
 - became more embedded within statement
- **Cognitive** (in 81.7% of units)
 - More inferences & judgments than elem clarifications and in-depth clarifications
 - Cog Deep: 33% surface; 55% deep; 12 both
- **Metacognitive** (in 56% of units)
 - More reflections on exper & self-awareness
 - Some planning, eval, & regulation & self q'ing

Cognitive Skills Displayed in Online Conferencing



Metacognitive Skills Displayed in Online Conferencing



Surface vs. Deep Posts

(Henri, 1992)

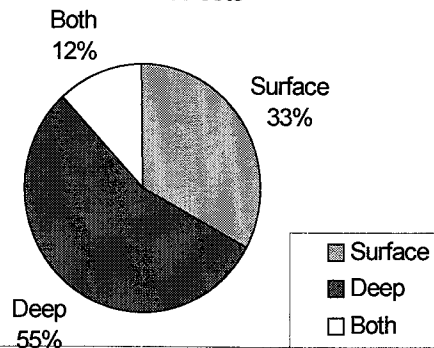
Surface Processing

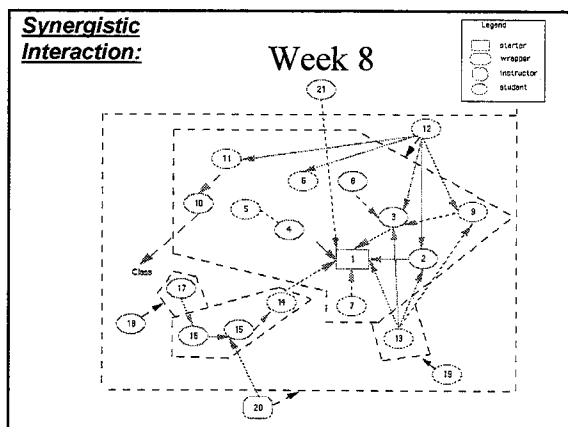
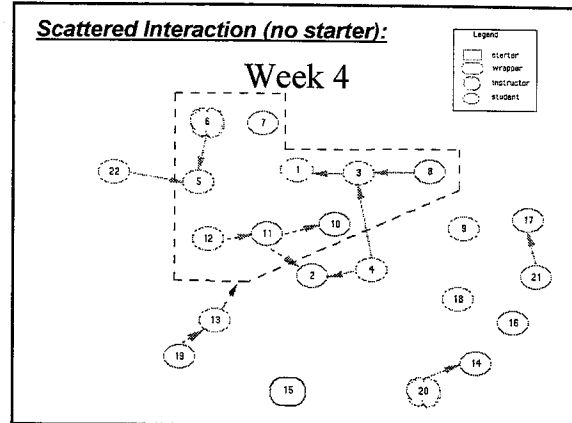
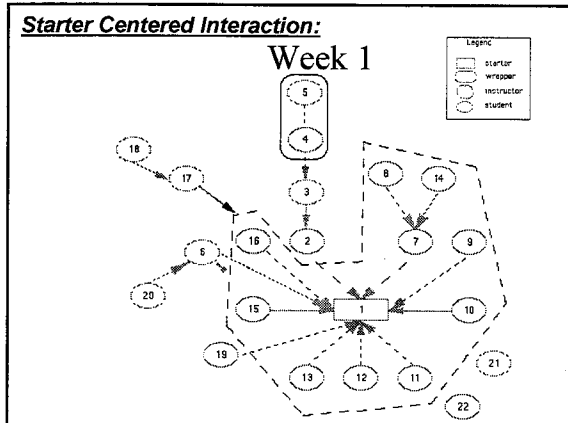
- making judgments without justification,
- stating that one shares ideas or opinions already stated,
- repeating what has been said
- asking irrelevant questions
- i.e., fragmented, narrow, and somewhat trite.

In-depth Processing

- linked facts and ideas,
- offered new elements of information,
- discussed advantages and disadvantages of a situation,
- made judgments that were supported by examples and/or justification.
- i.e., more integrated, weighty, and refreshing.

Level of Cognitive Processing: All Posts





- ## Recommendations
- **Structure online discussions**
 – e.g., get them to use subject line better.
 - **When done, have them print out transcripts!**
 – Can take the class with them when done!
 - **Realize that diff conferencing software and features serve diff instructional purposes**

Story #5 (1999): Do you believe in the power of sharing?



1999 Study of the World Lecture Hall Matrix of Web Interactions (Cummings, Bonk, & Jacobs, 2002)

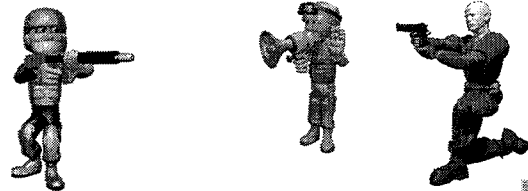
- Instructor to Student:** syllabus, notes, feedback
to Instructor: Course resources, syllabi, notes
to Practitioner: Tutorials, articles, listservs
- Student to Student:** Intros, sample work, debates
to Instructor: Voting, tests, papers, evals.
to Practitioner: Web links, resumes
- Practitioner to Student:** Internships, jobs, fieldtrips
to Instructor: Opinion surveys, fdbk, listservs
to Practitioner: Forums, listservs

Table 2
Percent of online syllabi with different options for communication flow among instructors, students, and practitioners/experts

	To students	To instructors	To practitioners/experts
From instructor	Assignment schedule (20%) Class roster (10%) Lecture notes/PowerPoint slides (43%) Web links (70%) Instructor profiles (70%) Post or publish current student work (14%) Within-course discussions or electronic conferences (65%) Outside of course discussions (5%) Personal profiles (10%)	Online syllabi (10%) Web forums or discussions on course material (4%) Lecture notes/activities (43%) Journal reflections (6%) Online quizzes/less (38%) Reflective electronic minute papers (0%) Session evaluations (3%) Instructor email feedback (84%) Course feedback (0%)	Online tutorials (3%) General information (1%) Virtual professional development communities (0%)
From students			Web links (12%) Resumes on the Web (0%)
From practitioners/experts	Jobs (0%) Virtual field trips (5%)		

Story #6 (2000): Do you want to be target practice?

Bonk, C. J., & Wisner, R. A. (2000). *Applying collaborative and e-learning tools to military distance learning: A research framework*. (Technical Report #1107). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.



Some of the Research Gaps (Bonk & Wisner, 2000)

1. Variations in Instructor Moderation
2. Online Debating
3. Student Perceptions of e-Learning Envir.
4. Dev of Online Learning Communities
5. Time Allocation: Instructor and Student
6. Critical Thinking and Problem Solving Applications in Sync/Asynchronous Envir
7. Peer Tutoring and Online Mentoring:
8. Student Retention: E-learning and Attrition
9. Graphical Representation of Ideas
10. Online Collaboration

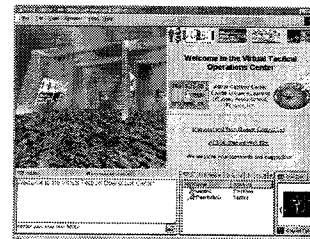
Problems and Solutions (Bonk, Wisner, & Lee, 2003)

- | | |
|--|-----------------------------------|
| 1. Tasks Overwhelm | ➤ Train and be clear |
| 2. Confused on Web | ➤ Structure time/dates due |
| 3. Too Nice Due to Limited Share History | ➤ Develop roles and controversies |
| 4. Lack Justification | ➤ Train to back up claims |
| 5. Hard not to preach | ➤ Students take lead role |
| 6. Too much data | ➤ Use Email Pals |
| 7. Communities not easy to form | ➤ Embed Informal/Social |

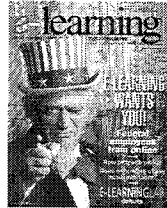
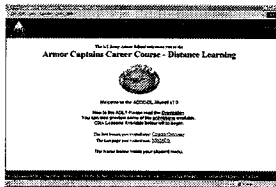
Benefits and Implications (Bonk, Wisner, & Lee, 2003)

- | | |
|--|--|
| 1. Shy open up online | ➤ Use async conferencing |
| 2. Minimal off task | ➤ Create social tasks |
| 3. Delayed collab more rich than real time | ➤ Use Async for debates; Sync for help, office hours |
| 4. Students can generate lots of info | ➤ Structure generation and force reflection/comment |
| 5. Minimal disruptions | ➤ Foster debates/critique |
| 6. Extensive E-Advice | ➤ Find Experts or Prac. |
| 7. Excited to Publish | ➤ Ask Permission |

Orvis, K. L., Wisner, R. A., Bonk, C. J., & Olson, T. (2002). Communication patterns during synchronous Web-based military training in problem solving. *Computers in Human Behavior*, 18(6), 783-795.



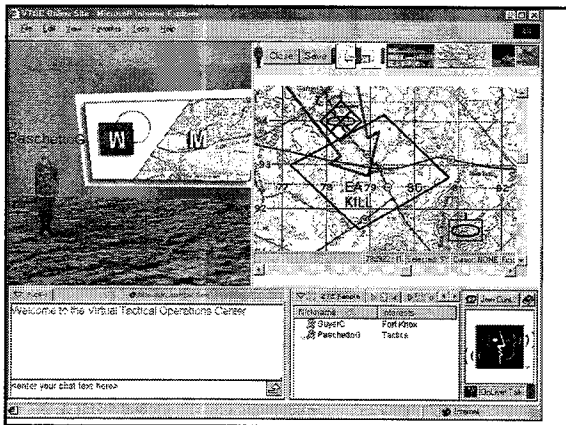
**Study #1: Synchronous Chat Analysis
(explored learner online problem solving)**



Orvis, K. L., Wisher, R. A., Bonk, C. J., & Olson, T. (2002). Problem-solving exercises in military training: Communication patterns during synchronous Web-based instructions. *Computers in Human Behavior*.

Three Phases of AC3-DL

- I. Asynchronous Phase:** 240 hours of instruction or 1 year to complete; must score 70% or better on each gate exam
- II. Synchronous Phase:** 60 hours of asynchronous and 120 hours of synchronous; Virtual Tactical Operations Center (VTOC) (7 rooms; 15 people/extension (chat, avatars, audio conferencing)
- III. Residential Phase:** 120 hours of training in 2 weeks at Fort Knox



Previously Reported Results

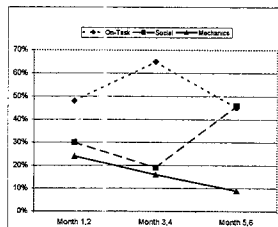
Sanders & Burnside (2001); Sanders & Guyer (2001)

- Completed coursework in less time than correspondence course.
- Positive attitudes
- Covered add'l content not in correspondence
- More likely to make decisions
- Develop greater sense of team identity
- Greater planfulness, confidence, tactical proficiency, and leadership skills.
- Problems encountered: time, drill time conflicts, tech problems, family responsibilities, no compensation

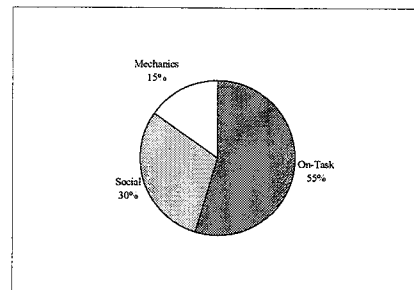


Study #1. Overall frequency of social, mechanical, and on-task interactions across chat categories (6,601 chats).

(Note: conducted focus groups, interviews, q'ers, chat transcript analyses, document analyses)



Overall frequency of interactions across chat categories (6,601 chats).



On-Task Problem Solving Mayer & Wittrock (1996); Sternberg (1997)

- "Terrain does not allow for effective maneuver of your element"
- "Harder to detect a liquid agent in rain"
- "Rain can also degrade optics on weapon systems"
- Remember in the BDE OPORD-the BDE CMDR wants this to occur at about this time"

Social Interactions

- "Kids are great we made breakfast for Mom (wife)"
- "Did you go out for a run last night?"
- "Tell her I said happy mothers day"
- "3 miles in 24 mins all hills"
- "If God had meant for us to run, he wouldn't have given us tanks"



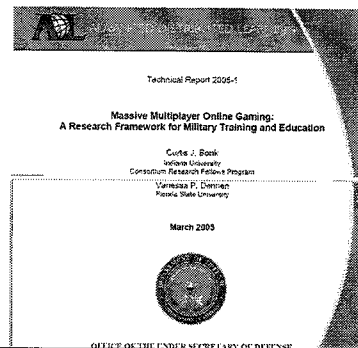
Study #2 Reflections on Blended

Bonk, C. J., Olson, T., Wisher, R. A., & Orvis, K. L. (2002). Learning from focus groups: An examination of blended learning. *Journal of Distance Education, 17*(3), 97-118.

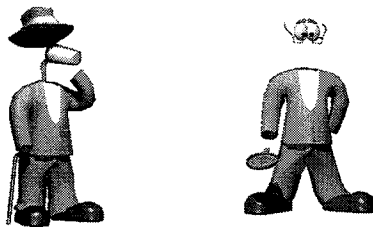
- Some Keys: feedback, smaller modules, need instructor facilitation, use basic tech, move from async to sync, better orientation sessions
- Enjoyed the course, excellent technologies
- Favored sync over asynchronous
- All noted ways to address high attrition
- Perceived training transfer, active learning
- Learned to work as a team
- High individual and collective efficacy

Bonk, C. J., Olson, T., Wisher, R. A., & Orvis, K. L. (2002). *Reflections on blended learning: The Armor Captains Career Course*. (Research Note #2002-13). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Massive Gaming (2003-2005)



Story #7 (2001): You were in, but you were never there.



Cross-Cultural Comparisons of Online Collaboration Among Pre-Service Teachers in Finland, Korea, and the US

Kim, K. J., & Bonk, C. J. (2002). Cross-cultural comparisons of online collaboration among pre-service teachers in Finland, Korea, and the United States. *Journal of Computer-Mediated Communication, 8*(1), see <http://www.ascusc.org/jcmc/vol8/issue1/kimandbonk.html>.



Sample & Data Sources



- In Spring 1998:
 - Finland: 30 students and 5 instructors
 - USA: 88 students and 7 instructors
- In Fall 1998
 - Korea: 21 students and 1 instructor
- A content analysis using Curtis & Lawson's coding scheme to describe utterances in online collaboration.
 - Post collaboration questionnaire, interviews, video conference

Behavior Categories	Codes	Description
Planning	GS	Group Skills
	OW	Organizing Work
	IA	Initiating Activities
Contributing	HeG	Help Giving
	FBG	Feedback Giving
	RI	Exchanging Resources and Information
	SK	Sharing Knowledge
	CH	Challenging Others
Seeking Input	EX	Explaining or Elaborating
	HeS	Helping Seeking
	FBS	Feedback Seeking
Reflection/ Monitoring	EF	Advocating Efforts
	ME	Monitoring Efforts
Social Interaction	RM	Reflection on Medium
	SI	Social Interaction

Online Collaboration Behaviors by Categories

Behavior Categories	Conferences (%)		
	Finland	U.S.	Average
Planning	0.0	0.0	0.0
Contributing	80.8	76.6	78.7
Seeking Input	12.7	21.0	16.8
Reflection/ Monitoring	6.1	2.2	4.2
Social Interaction	0.4	0.2	0.3
Total	100.0	100.0	100.0

Online Collaboration Analysis (Korea)

Behavior Categories	Code	Korean	
		Code totals	Code percent
Planning	GS	0	0
	OW	0.0	0.0
	IA	0	0
Contributing	HeG	2	2
	FBG	1.3	1.3
	RI	44	44
	SK	28.4	28.4
	CH	2	2
Seeking Input	EN	1.3	1.3
	HeS	1	1
	FBS	0.6	0.6
Reflection/ Monitoring	EF	36	36
	ME	3	3
Social Interaction	RM	1.9	1.9
	SI	15	9.7
Total		155	100.0

← Sharing Knowledge

← Advocating efforts

← Social Interaction

Findings from the Quantitative Analysis

- Low participation rate of instructors across all the groups.
 - A majority of utterances fell into the "contributing" category.
 - Cross-cultural differences in "Seeking Input," "Reflection/ Monitoring," and "Social Interaction" behaviors.
 - Differences in the intercultural participation levels across cultures.

Differences in Reflection Behaviors (monitoring effects)

- A Finnish case on student motivation (ME)

"As a result of this discussion so far, we have made some conclusions dealing with students' motivation to learn. We agree that it is impossible to motivate students deliberately. There is not any specific act that can be used to increase students' motivation. According to McCombs, almost everything that teachers do in the classroom has a motivational influence on students ... Intrinsic motivation and self-regulation strategies are also important and these can be supported by successful external supports...."

Differences in Feedback Seeking & Giving

- A U.S. case on disciplinary problems (FBS)

"One day I come into teach the class and one of the twenty students is very quiet. He seemed alright at the time of teaching, but towards the end he just starts crying for no reason... The questions that were raised in my head were: 1. How involved should I get?, 2. Should I call the family and tell them what happened?, 3. Should I tell the other teachers and see what we all can do?"

Differences in Social Interaction Behaviors

- Social Interactions Among Korean students

- Well, like a cup of coffee, may this new thing be relaxing (I am praying now). It must be the beginning, so I am happy now. I wonder whether someone would reply to me. I am a little bit nervous 'cause I am not so familiar with Web conferencing.

- Sister Sunny, take care of yourself, and I hope your health will be good soon. I'm not accustomed to Web conference, either, but it is a good chance to participate. Please, cheer up!

- Thank you for your interest in my health, but I'm all right now. Just before, my long message to you has gone by my slight mistake, so I am sad (crying). And, sorry for my late reply to you.

Communication Styles & Culture

- **Low context communication**
 - Focuses on explicit verbal message
 - U.S. Finland, and most of the Western cultures
- **High context communication**
 - emphasizes how intention or meaning is conveyed through the context (e.g., social roles, positions, etc.)
 - Korea and most of the Asian cultures
- **Importance of social interaction in the high context communication culture**

Findings from the Qualitative Analysis

- U.S. students more action-oriented and pragmatic in seeking results or giving solutions.
- Finnish students were more group focused as well as reflective and theoretically driven.
- Korean students were more socially and contextually driven.

Implications

- Instructors have a key role in facilitating effective cross-cultural communication (e.g. social interaction activities for students from high context cultures).
- Instructional designers and software developers need to build learning tools that address learner needs from different cultures (usability tests in different cultures).
- Online learners need prior examples or case transcripts highlighting cultural differences in communication styles.

Story #8 (2001): Who needs a ticket?

The Pedagogical TICKIT: Teacher Institute for Curriculum Knowledge about the Integration of Technology (1998-2003)

Curt Bonk

Lee Ehman

Emily Hixon


Lisa Yamagata-Lynch

John Keller




Indiana University




TICKIT Program Features



- Teachers in rural schools
- Inservice teacher education
- Cohorts of 4-6 teachers per school
- Six hours of graduate credit
- Blended model (e.g. on-line and site-based interactions)
- Action research
- Academic Year Duration

TICKIT Goals




- Knowledge, skill, & confidence
- Thoughtful integration of technology
- Leadership cadres in schools
- Link schools and university
- Help schools capitalize on their technology investments



TICKIT Teachers




Goal Statement



"Obviously, I'm technologically in the Dark Ages. My students are so computer savvy that I feel I must at least attempt to catch up with them." – Debbie White, North Gibson, summer 2002

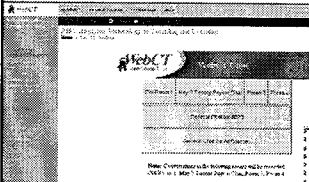



TICKIT Model




TICKIT Program Elements	Changes/Outcomes		
Reporting	Individual TICKIT Teachers	School	Students
Reporting <small>Self-Report TICKIT Teachers Colleagues</small>	Knowledge Skills Confidence Motivation Beliefs	New Models of Technology Integration Colleague Support by TICKIT Cohort Value Added by Technology Integration in Classroom Teaching and Learning	Motivation Learning Quality of Student Work
Reflection and Action Research <small>Assessment of Classroom Projects</small> TICKIT Staff TICKIT Teachers Students			
Classroom Projects <small>Workshops E-Collaboration Coaching</small> Tools Technology Building & Refinement Collaborative Planning Content-rich Support Ongoing Support			
Teachers' Prior: Knowledge Skills Confidence Motivation Beliefs	Other Professional Development Experiences		

Online Interaction



Classrooms from 182 Countries speaking 124 Languages now participating!



Typical TICKIT Training and Projects

Web: Web quests, Web search, Web edit/pub.

– Includes class, department, or school website.

- **Write:** Electronic newsletters, book reviews.
- **Tools:** Photoshop, Inspiration, PowerPoint.
- **Telecom:** e-mail with foreign key pals.
- **Computer conferencing:** Nicenet.org.
- **Digitizing:** using camera, scanning, digitizing.
- **Videoconferencing:** connecting classes.
- **Web Course:** HighWired.com, MyClass.net, Lightspan.com, eBoard.com



Project type	Number of projects (132)
Webquest	64
Electronic newsletters	1
Web editing & publishing	13
Online conferencing, collab, and discussion (includes email and phone)	10
Virtual tours	1
Computer apps (Excel, PP, Word, Internet)	38
Book review	2
Brochure construction	1
Electronic portfolio	2



Example Projects



7th Grade
Cultural Project



Introduction/ Task/ Process/ Resources/ Evaluation/ Conclusion/ Notes to Teachers

INTRODUCTION

Congratulations!

You and your unique group have been highly recommended to create a brochure and PowerPoint presentation that will get tourists excited about your country. We want to focus on areas of uniqueness and on the best restaurants in the area and their costs. We know that tourists are always looking for fun places to eat and popular sites to see. You are the people in your country who are

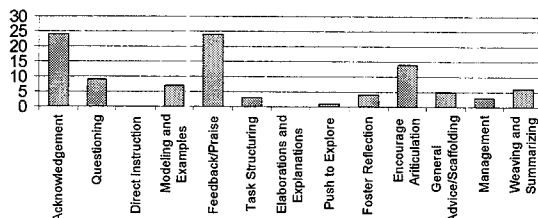
Critical Friend Post Example

"Beverly: Before I forget, I want to thank you again for your invaluable help at the ICE conference. I get used to using a particular piece of equipment or program, and it's hard for me to adapt quickly. You saved the day. One thing I have learned from using technology is that we need to depend upon each other for support. We are all in this boat together."



Forms of Learning Assistance

Figure 1. Forms of Learning Assistance in TICKIT Activities



Findings: Summary

- Feedback, praise, social interaction most frequent
- Critical friends provide peer support, help, social
- Reading reactions & debates more content focus
- Critical friend postings perceived more beneficial
- Reading reactions & debates "just another task"
- Justification: 77% claims unsupported; 20% referenced classroom & other experience
- Depth: ~80% surface level
- Off Task: 7% total; most in critical friend activity



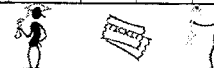
Research Question: Study #2

Do teachers who have been through the TICKIT program differ from teachers who have not on dimensions of computer integration?



TICKIT Results

Factors	Means		t	Sig.	Effect Size
	TICKIT Completers**	TICKIT Applicants**			
1. Technology Integration	74.05	38.25	7.663	.000***	1.81
2. Technology Limitations	11.60**	15.79	-3.281	.002**	.63
3. Technology Resistance	4.37**	7.91	-3.143	.003**	.80
4. Computer Proficiency	25.51	18.84	4.614	.000***	1.20
5. Learner-centered Instruction	18.29	12.40	5.120	.000***	1.22



Relative Impact

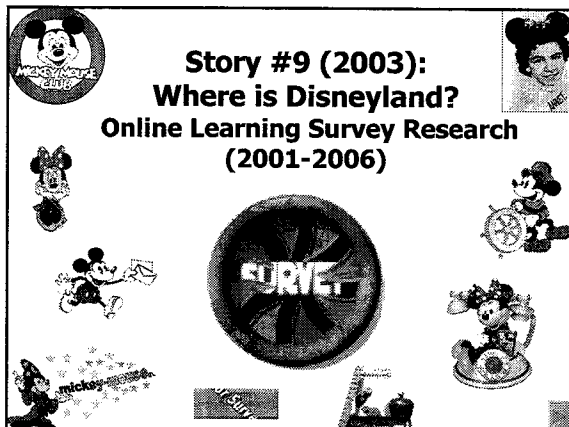
Source of Influence	1 st choice	2 nd choice	3 rd choice	% Ranking this 1, 2 or 3
Peer Teacher Support	3	5	4	15%
Grant Money	0	2	2	5%
Administrative support	4	3	4	14%
Undergraduate Training	0	1	2	5%
Stipends	1	1	0	3%
Curriculum technology integration expectations	3	5	5	18%
Graduate courses outside TICKIT	2	4	4	13%
Personal ambition and interest in technology	34	16	12	78%
Parental and community expectations	1	2	3	8%
TICKIT professional development	15	23	16	68%
In-school professional development other than TICKIT	4	6	15	32%
Conferences, institutes, and other external	5	0	8	38%
Other	5	2	1	10%

TICKIT Teacher Voices

- "This class was very helpful. I gained a lot of confidence as a technology user from this class."
- "The door is now open. I will continue to try to find technological ways to teach them."
- "This was the best program I have ever been involved with as a teacher."

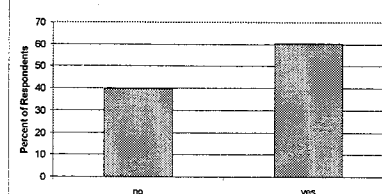


Story #9 (2003): Where is Disneyland? Online Learning Survey Research (2001-2006)

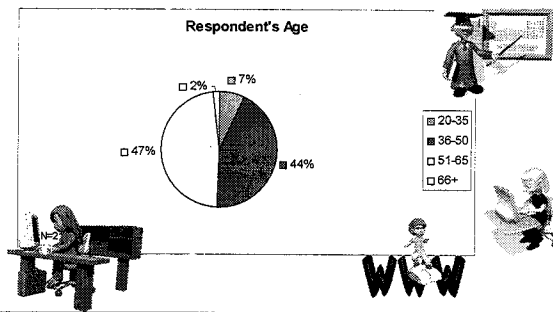


Myth #1. College instructors are loyal.

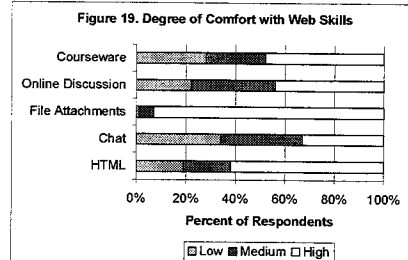
Do You Plan to Teach as a Freelance Instructor in the Future (blended or fully online)



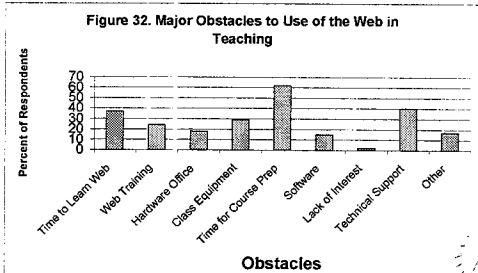
Myth #2.
Young instructors will jump on this.



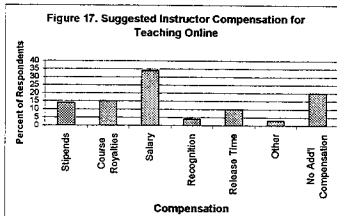
Myth #3.
College instructors will flock to sophisticated technologies.



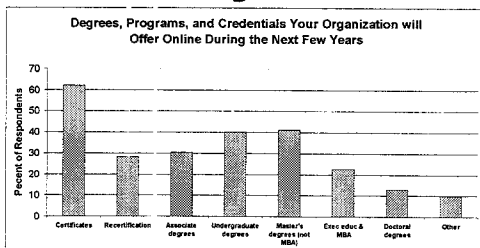
Myth #4.
College faculty just need a little more training to teach on the Web.



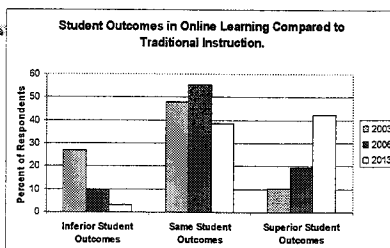
Myth #5.
Shhh...If you don't say anything, college instructor will just do this for free.

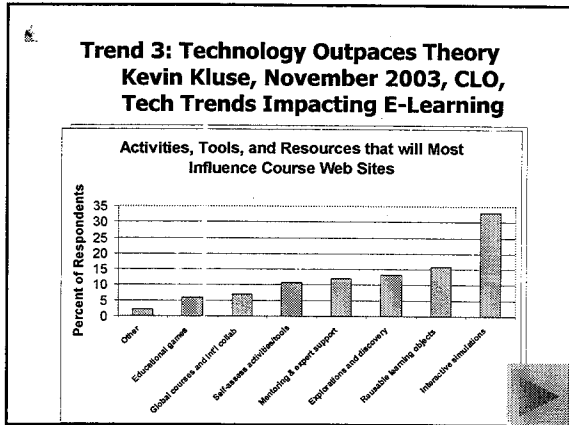


Trend 1: Enrollments Growth in Certificates and Short Programs



Trend 2: Course Quality Issues Become Pervasive (need for quality control police)





Story #10 (2004-2006): Data at your fingertips...

Research on the Online MBA Program, Kelley Direct (KD), at Indiana Univ

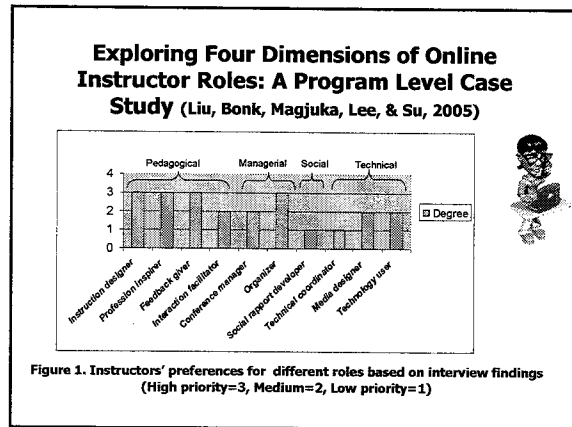
- 12 students in 1999 to 1,000 in 2004
- fully online; 1 week summer residencies
- Use regular on-ground instructors
- Data Collected: Surveys, focus groups, content analysis, interviews, document review, etc.

Kelley Direct Online Programs
Indiana University Kelley School of Business

Roles of Online Instructors

(Bonk, Kirkley, Hara, & Dennen, 2001)

- **Technical**—Train, early tasks, be flexible, orientation task
- **Managerial**—Initial meeting, FAQs, detailed syllabus, calendar, post administrative, assign e-mail pals, gradebooks, email updates
- **Pedagogical**—Peer feedback, debates, PBL, cases, structured controversy, field reflections, portfolios, teams, inquiry, portfolios
- **Social**—Café, humor, interactivity, profiles, foreign guests, digital pics, conversations, guests



Problems within Roles

- Lack program wide faculty interaction (P)
- Lack facilitation skills (P)
- Concerns about time commitment (P/S)
- Lack skills in weaving discussion (M)
- Lack awareness of social role (S)
- Lack better technology for social role (S)
- Lack technical skills (T)
- Concern about accessibility issues (T)

Bude, S., Bonk, C. J., Magjuka, R., Liu, X., Lee, S. H. (in press). The importance of interaction in web-based education: A program-level case study of online MBA courses. *Journal of Interactive Online Learning*.

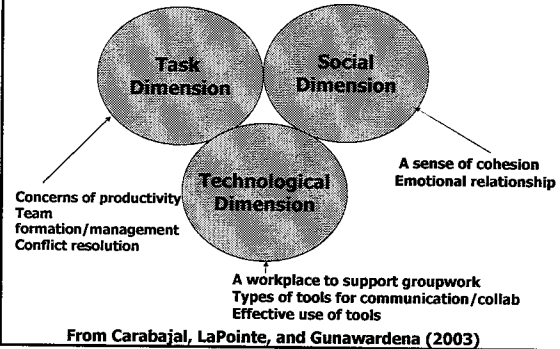
Table 2. Summary of Technology Tools and Other Course Resource Used in Online MBA Program.

Technologies	Course using	Course not using	Percentage of usage
Text books	27	0	100%
Email	26	1	96%
Text-based two way communications/discussions	25	2	93%
-Asynchronous text-based (e.g., discussion forums)	23	4	85%
-Synchronous text-based (e.g., chat)	11	16	41%
Interactive quiz tools	18	9	67%
PowerPoint slides	15	12	56%
Web-pages	13	14	48%
Audio and video clips	12	15	44%
Telephone	8	18	30%
Voice- and visual-based two way communications (voice mail, instant messaging, video conf. etc.)	0	27	0%

Bude, S., Bonk, C. J., Magjuka, R., Liu, X., Lee, S. H. (in press). The importance of interaction in web-based education: A program-level case study of online MBA courses. *Journal of Interactive Online Learning*.

Instructional Activities	Course used	Course not used	Percentage of usage
Asking/responding to instructor questions	27	0	100%
Feedback on assignments	27	0	100%
Summary of class key points/concepts	26	1	96%
Instructor participation in class discussions	25	2	93%
Team-based learning activities	22	5	81%
Participation in online discussions as part of assessment	18	9	67%
Small team discussions	11	16	41%
Instructor participation in team discussions	1	26	4%
Virtual office hours	3	24	11%
Inter-team feedback/critique	4	23	15%
Peer evaluation	5	22	19%
Student online coffee house	2	25	7%
Student introduction forum	2	25	7%
Bulletin board to express student expectations	4	23	15%
Newsline	2	25	7%

Dimensions of virtual teaming



Strategies Used for Virtual Teaming (Lee, Bonk, Magjuka, Su, & Liu, in press)

Dimension	Strategies	Courses in use (%)
Task dimension	Team change by each assignment	2 (7%)
	Team discussion	23 (85%)
	Team-level deliverables	21 (78%)
	Internal interaction (critique, feedback, idea sharing)	9 (33%)
	Peer evaluation	5 (19%)
	Combination of teamwork and individual work	21 (78%)
Social Dimension	Online coffee house	2 (7%)
	Online introduction forum	2 (7%)
	Personnel profile	27 (100%)
	Other social events	5 (19%)

Strategies Used for Virtual Teaming

Dimension	Strategies	Courses in use (%)
Technological dimension	Email	26 (96%)
	Telephone	8 (30%)
	Text based asynchronous tools (e.g., discussion forums)	4 (15%)
	Text based synchronous tools (e.g., chat)	5 (19%)
	Voice-/visual based asynchronous tools (e.g., voice mail, voice message board)	0 (0%)
	Voice-/visual based synchronous tools (e.g., instant messaging, audio/video conferencing, live meeting)	0 (0%)

Summary of Dimensions of Virtual Teams in Online MBA Courses

Dimensions of virtual teams		Degree ^[1]
Task Dimension	•Shared purpose of virtual teams	H
	•Belief on contribution of knowledge building	H
	•Use of task techniques for team activity design	M
Social Dimension	•Use of social techniques in virtual teams	M
	•Use of human interaction approach	M
	•Sharing social presence and cohesion	M
Technological Dimension	•Use of text based (a)synchronous tools	H
	•Use of audio-and video-based (a)synchronous tools	L
	•Usefulness of collaborative tools	M

[1] H=High, M=Medium, L=Low

Concerns with Community Building (Blended!)

"As for community, I think we're staggering toward one that's driven by the faculty members themselves. The times that we've been in the same room we say to each other, "We've got to get together. We've got to form some kind of group so we can trade ideas." We did get together for a lunch but it was like very unplanned and we can do a lot more with that."

Strength of the Program

- **Flexibility:** 60%; Per 1 student "Flexibility, if it wasn't online I wouldn't be getting an MBA."
- **Excellent faculty:** 34%; Students perceive professors as knowledgeable, various teaching methods, good at providing immediate feedback.
- **High quality curriculum and course content:** 30% felt the program offers a high quality curriculum and course content; case-based instructional method valuable.
- **Reputation (13%); Admin support: 11%; Quality students: 7%; Diversity of community: 6%**
- **Other strengths including its week long in-residence program,** relatively low cost, overall program quality, and the possibility to use what is learned directly in the work setting

Key Barriers to Online Learning

- **Lack of human interaction:** 33% of respondents think more interactions are needed between student and instructor, and among students.
- **Team schedule issue:** 18% of the respondents expressed the frustration over time zone differences and difficulty of scheduling sync mtg.
- **Lack of sense of community:** 11%. A few students felt lonely due to lack of peer support and lack of a strong network of students.
- **Lack of interactive technology:** 8%; Delayed feedback: 8% Large group size: 7%;
- **Other barriers include unclear expectations,** not enough time for reading, unequal work load distribution, lengthy discussion forum, and lack of lecture.

Dropping out???

- Only 9% thought about dropping out due to disappointment with course design.
- Also a problem with a lack of community, lack of social presence of instructor, lack of bonding
 - The intention of dropping out of the classes negatively correlated with the learner engagement ($r=-.40$),
 - feeling of being a part of a learning community ($r=-.47$),
 - comfort level of reading messages and materials online ($r=-.40$),
 - and helpfulness of instructor facilitation ($r=-.51$).

One Word to Describe Program

- 70% were positive!
- Common words were excellent, good, exciting, rewarding, effective, satisfied, enlightening, educational, solid, and empowering.
- About 16% think the program is quite challenging (challenging, intense, demanding, adventure, and hard).
- One student wrote "this is the hardest thing I have ever done."
- New, unique, eye-opening, and surprising.

Recommendations for Improvement

- **More technology integration:** 52%. Video & tele-conferencing, better chat.
- **Immediate and detailed feedback**
- **More human interactions:** Over 50%.
- **More options, flexibility, elective courses.**
- **Enhance administrative support:** Consulting services, contact options, hot line help.
- **Flexibility on Team assignment:** Choose teammates.
- **Specific recs:** More lectures, burned CDs, slide narrations, key take aways, emailing course announcement, and more instructor check up.

Two + 1 (3) Key Research Questions for the Next 2 years?

1. What new sorts of collaborations will knowledge repositories spur? What impact will these have on innovative pedagogy?
2. How will wikis, blogs, podcasts and other technology innovations foster more individualized learning and opportunities for social constructivist teaching practices?
3. What new forms of education will emerge from handheld devices and mobile computing?

