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

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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 TICKET?
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
- Sitemscape Forum
- COW
- FirstClass
- WebCT, Blackboard, Virtual U, etc.

Research on Electronic Cases
1. RT vs. Delayed Collab
   - Groups Preset by Major
   - Tchr Generated Cases
   - Local/Univ. Networks
   - Limited Instructor Mentoring
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

Example of real-time dialogue:

- 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 seeks 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 Penway, Language Group.)
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...?

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 field trips, ask an expert forums, cross-classroom collaboration, debate forums, online communities, MayaQuest, the Jason Project.

Adventure Learning Findings (Bonk & Sugar, 1998)

Aspects within Aspects (Cooney, 1998)

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

Smartweb Activities
- Weekly Chapter Activity
- Starter-Wrapper Disc
- Personal Profiles
- Student Portfolios
- Feedback on Portfolios
- Links Prior Semesters
- Field Reflections
- Field Observations
- Café Latte

Sociocultural Link
- Connect to Experience
- Recip Teach & Dialogue
- Build Intersubjectivity
- Dynamic Assessment
- Scaffolded within Zones
- Modeling and Legacy
- Apprentices Learning
- Scaffolded & Authentic
- Shared Knowledge

Story #3 (1996): Do not ride your bike to work.


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 (COW) at Indiana University

**COW Conference On the Web**

About COW | Enter COW | Lobby

Finland Cases Fall98

Oulun yliopisto
UNIVERSITY OF JYVÄSKYLÄ

Welcome to the Finland Conference. It has been created for some events, lectures, seminars, and other events, also includes hours and hours for keynotes. The event will take place at the University of Jyväskylä in the fall of 1998.

Edited by the Buzz team and financed by the Ministry of Education and the Finnish Cultural Foundation.

Title:

Select a topic and write your comments on the editor's notes and suggested.

Submitted by: [Your Name]
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

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

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

Types of Heavy Scaffolding:
1. Social Acknowledgment
2. Questioning
3. Direct Instruction
4. Modeling/Examples
5. Feedback/Praise
6. Cognitive Task Structuring
7. Cognitive Elaboration/Explanations
8. Peaks to Explore
9. Enhancing Reflection/Self-Awareness
10. Encouraging Acquisition/Dialogue Prompting
11. General Advice/Scaffolding/Suggestions

Bonk, Angeli, Malikowski, & Supplee, 2001)
Study #3. Fall, 1997

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 (EU, Finland, and Cultural Immersions)
- Subjects = 110 students
  (80 US and 30 Finnish students)
- Mentors = 2 As, 1 supervisor, 4 coop tchrs, 3 conference moderators.
- Videoconferences + Web Conferences

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

Let's 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 farther 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 & Marja

Vertical Mentoring Examples

9. Author: Jerry Cochev (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 to find ways to be a support for students of Finnish. I have been trying to think of ways to help them understand the students' perspective. Challenges are important because they help us understand what we don't know yet. We 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. I don't really know yet how to be a proper supporter of these processes for students. - Leena

Justified Statement (Finnish)

3. Author: Kiri
Date: Mar. 6 8:11 AM 1998
Why not let the student study math further by herself and the teacher could help her 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 student learns to be responsible of her own learning. If I quote dear mr. Vygotsky here again, the teacher should be sensitive to see where the child's process of development is and help her "over" it. The teacher's task is not to try to keep the child on the level she 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 seen. However, I don't believe that it could ever take over the role of a teacher. The teacher has a role in the classroom and will never be able to replace the role of a teacher... I believe that the computer will never completely replace the teacher. I believe that the teachers will eventually make teaching easier for us and that most of the time we will be able to work with computers. But I believe that there will always be a need for the teacher.

25. Author: David
Date: Apr. 28 1:47 PM 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 seen. However, I don't believe that it could ever take over the role of a teacher. The teacher has a role in the classroom and will never be able to replace the role of a teacher... I believe that the computer will never completely replace the teacher. I believe that the teachers will eventually make teaching easier for us and that most of the time we will be able to work with computers. But I believe that there will always be a need for the teacher.

26. Author: Daniel
Date: Apr. 30 1:21 AM 1998
I believe that the role of the teacher is being changed by computers, but the computer will never completely replace the teacher. I believe that the teachers will eventually make teaching easier for us and that most of the time we will be able to work with computers. But I believe that there will always be a need for the teacher.

Indicators for the Quality of Students' Dialogue (Angelis, Angelides, & Bonk, 2003)

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

Cases for Undergraduate Educational Psychology Classes

These cases are copyrighted and are included with permission of the copyright owner. These cases have been adapted for use with the textbook, "Cases in Educational Psychology," by R. K. Denzin and P. L. Lincoln, 1998. Reprinted by permission of the copyright owner.

Chapter 1: Understanding Pedagogical Differences

Title: The Case of Sarah

Chapter 2: The Case of John

Chapter 3: The Case of Michael

Chapter 4: The Case of Emily

Chapter 5: The Case of Robert

Chapter 6: The Case of Rachel
Chapter 9: Cognitive Learning Theories and Problem Solving
Case A: Making things meaningful

Case Introduction/Context
Cognitive devices: Changing how the experience of learning becomes meaningful. It is not enough for teachers to simply present their material. Teachers need to model how to engage in deep thinking about the material in ways that students can experience things-meaning. The following case exemplifies a cognitive learning theory.

Case from Classroom Teacher
I was teaching a fifth-grade science class. The teacher used this test that the students had been working on before. The teacher made the tests and gave them to the students. The teacher then asked the students to work in pairs and solve the problems. The teacher asked the students to work together and solve the problems. The students worked in pairs and solved the problems. The teacher then went around and helped the students who were having trouble. The teacher also asked the students to reflect on their work and the problems they had solved. This helped the students to understand the problems and how to solve them. The teacher also asked the students to write down their solutions and share them with each other. This helped the students to learn from each other and understand the problems better.

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

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-wraper 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
(Henti, 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, inferring, 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)

Online Discussion: Case A in Chapter 9
Case A (From Chapter 9: Cognitive Learning Theories and Problem Solving)

Message Index
- [Message 1] 10/14/1996, 4:04 PM
- [Message 2] 10/15/1996, 10:35 AM
- [Message 5] 10/18/1996, 2:10 PM
- [Message 6] 10/19/1996, 10:45 AM
- [Message 7] 10/20/1996, 10:45 AM

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

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**Cognitive Skills Displayed in Online Conferencing**

**Metacognitive Skills Displayed in Online Conferencing**

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**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.

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**Level of Cognitive Processing: All Posts**

- **Both** 12%
- **Surface** 33%
- **Deep** 55%
- **Both** (if applicable)

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10
Starter Centered Interaction:

Week 1

Scattered Interaction (no starter):

Week 4

Synergistic Interaction:

Week 8

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

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

Story #5 (1999): Do you believe in the power of sharing?
Table 2
Percent of online courses with different tools for communication from peers, instructors, students, and
instructor/peers

<table>
<thead>
<tr>
<th>From Instructor</th>
<th>To Instructor</th>
<th>To Students/peers</th>
</tr>
</thead>
</table>
| Notes and
| Handouts 10%   | Online query 10% | General information 10% |
| Email 10%       |              |                  |
| Web links 5%    |              |                  |
| Instructor notes 5% |          |                  |
| From Students | Note: peer notes | Students work 20% |
| Peer notes 5%  | Discussion board 30% | Online query 20% |
| Web pages 5%   | Reflection 20%  | Research on the Web 20% |
| Out of course 5% |              |                  |
| Personal notes 5% |              |                  |
| From Peers | Note: feedback 5% | Create feedback 5% |
| Notes 5%       |              |                  |
| Virtual field trip 5% |          |                  |

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

1. Variations in Instructor Moderation
2. Online Debating
3. Student Perceptions of e-Learning Environ
4. Dev of Online Learning Communities
5. Time Allocation: Instructor and Student
6. Critical Thinking and Problem Solving
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, Wisher, & Lee, 2003)

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

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

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

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

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


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 (VTAC) (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 & Geyer (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, & ers, chat transcript analyses, document analyses)

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

- Mechanical: 10%
- Social: 30%
- On-Task: 50%
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

- 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

Massive Gaming (2003-2005)

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

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

<table>
<thead>
<tr>
<th>Behavior Categories</th>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>Planning</td>
<td>GS</td>
<td>Group Skills</td>
</tr>
<tr>
<td></td>
<td>OW</td>
<td>Organizing Work</td>
</tr>
<tr>
<td></td>
<td>IA</td>
<td>Initiating Activities</td>
</tr>
<tr>
<td>Contributing</td>
<td>HcG</td>
<td>Help Grouping</td>
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<tr>
<td></td>
<td>FBRG</td>
<td>Feedback Grouping</td>
</tr>
<tr>
<td></td>
<td>RU</td>
<td>Exchanging Resources and Information</td>
</tr>
<tr>
<td></td>
<td>SK</td>
<td>Sharing Knowledge</td>
</tr>
<tr>
<td></td>
<td>CH</td>
<td>Challenging Others</td>
</tr>
<tr>
<td></td>
<td>EX</td>
<td>Explaining or Elaborating</td>
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<tr>
<td>Seeking Input</td>
<td>HcF</td>
<td>Helping Seeking</td>
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<td>FBS</td>
<td>Feedback Seeking</td>
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<td>Ef</td>
<td>Advocating Efforts</td>
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<td>Reflection/Monitoring</td>
<td>ME</td>
<td>Monitoring Efforts</td>
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<tr>
<td>Social Interaction</td>
<td>SI</td>
<td>Social Interaction</td>
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### Online Collaboration Behaviors by Categories

<table>
<thead>
<tr>
<th>Behavior Categories</th>
<th>Conference (%)</th>
</tr>
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<td></td>
<td>Finland</td>
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<tr>
<td>Planning</td>
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</tr>
<tr>
<td>Contributing</td>
<td>80.8</td>
</tr>
<tr>
<td>Seeking Input</td>
<td>12.7</td>
</tr>
<tr>
<td>Reflective/Monitoring</td>
<td>6.1</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>0.4</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### Online Collaboration Analysis (Korea)

<table>
<thead>
<tr>
<th>Behavior Categories</th>
<th>Korean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td></td>
</tr>
<tr>
<td>Contributing</td>
<td></td>
</tr>
<tr>
<td>Seeking Input</td>
<td></td>
</tr>
<tr>
<td>Reflective/Monitoring</td>
<td></td>
</tr>
<tr>
<td>Social Interaction</td>
<td></td>
</tr>
</tbody>
</table>

### Findings from the Quantitative Analysis

- Low participation rate of instructors across all the groups.
  - A majority of utterances fell into the "contributing" category.
  - 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 no 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?


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

**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 Teachers**

**Online Interaction**

Classrooms from 181 Countries speaking 134 Languages now participating!
Typical TICKIT Training and Projects

- Includes class, department, or school website.
- Write: Electronic newsletters, book reviews.
- Tools: Photoshop, Inspiration, PowerPoint.
- Telecom: e-mail with foreign key pals.
- Digitizing: using camera, scanning, digitizing.
- Videoconferencing: connecting classes.
- Web Course: HighWired.com, MyClass.net, Lightspan.com, eBoard.com

<table>
<thead>
<tr>
<th>Project type</th>
<th>Number of projects (132)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Webquest</td>
<td>64</td>
</tr>
<tr>
<td>Electronic newsletters</td>
<td>1</td>
</tr>
<tr>
<td>Web editing &amp; publishing</td>
<td>13</td>
</tr>
<tr>
<td>Online conferencing, collab, and discussion</td>
<td>10</td>
</tr>
<tr>
<td>(includes email and phone)</td>
<td></td>
</tr>
<tr>
<td>Virtual tours</td>
<td>1</td>
</tr>
<tr>
<td>Computer apps (Excel, PP, Word, Internet)</td>
<td>38</td>
</tr>
<tr>
<td>Book review</td>
<td>2</td>
</tr>
<tr>
<td>Brochure construction</td>
<td>1</td>
</tr>
<tr>
<td>Electronic portfolio</td>
<td>2</td>
</tr>
</tbody>
</table>

Example Projects

7th Grade Cultural Project

“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](image)

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
- 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

<table>
<thead>
<tr>
<th>Factors</th>
<th>Means</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>huge*</td>
<td>15.79</td>
<td>.002**</td>
</tr>
<tr>
<td>2. Technology Limitations</td>
<td>11.60**</td>
<td>5.03</td>
<td>.002**</td>
</tr>
<tr>
<td>3. Technology Resistance</td>
<td>4.2**</td>
<td>7.91</td>
<td>.002**</td>
</tr>
<tr>
<td>4. Computer Proficiency</td>
<td>.00**</td>
<td>4.56</td>
<td>.002**</td>
</tr>
<tr>
<td>5. Learner-centered Instruction</td>
<td>10.29</td>
<td>12.40</td>
<td>5.126</td>
</tr>
</tbody>
</table>

Relative Impact

<table>
<thead>
<tr>
<th>Source of Influence</th>
<th>Impact on Mean</th>
<th>Impact on Std. Dev.</th>
<th>Impact on Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Teacher Support</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Teacher Efficacy</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Administrators' Support</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Undergraduate Training</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Other</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

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 Full-time Instructor in the Future (Blended or Fully online)

- 70
- 80
- 90
- 100

Yes
No
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)
Trend 3: Technology Outpaces Theory
Kevin Kluse, November 2003, CLO, Tech Trends Impacting E-Learning

Activities, Tools, and Resources that will Most Influence Course Web Sites

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.

Roles of Online Instructors
(Bonk, Kirtley, Hara, & Dennen, 2001)

- **Technical**—Train, early tasks, be flexible, orientation task
- **Managerial**—Initial meeting, FAQs, detailed syllabus, calendar, post administrivia, 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

Exploring Four Dimensions of Online Instructor Roles: A Program Level Case Study (Liu, Bonk, Magjuka, Lee, & Su, 2005)

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)

| 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-based two-way communications/discussions                                     |
| (asynchronous text-based (e.g., discussion forum), synchronous text-based (e.g., chat)) |
| Interactive quiz tools            |                 |
| PowerPoint slides                |                 |
| Web-pages                        |                 |
| Audio and video clips            |                 |
| Telephone                        |                 |
| Voice- and visual-based two-way communications (e-mail, instant messaging, voice chat, etc.) |

<table>
<thead>
<tr>
<th>Interactivity Activities</th>
<th>Course used</th>
<th>Course not used</th>
<th>Percentage of usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adding/responding to instructor questions</td>
<td>37</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Feedback on assignments</td>
<td>22</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Summary of class key points/concepts</td>
<td>35</td>
<td>1</td>
<td>96%</td>
</tr>
<tr>
<td>Instructor participation in class discussions</td>
<td>25</td>
<td>2</td>
<td>95%</td>
</tr>
<tr>
<td>Team-based learning activities</td>
<td>17</td>
<td>9</td>
<td>67%</td>
</tr>
<tr>
<td>Participation in online discussions as part of assessment</td>
<td>45</td>
<td>9</td>
<td>67%</td>
</tr>
<tr>
<td>Small team discussions</td>
<td>11</td>
<td>10</td>
<td>55%</td>
</tr>
<tr>
<td>Instructor participation in team discussions</td>
<td>3</td>
<td>26</td>
<td>4%</td>
</tr>
<tr>
<td>Virtual office hours</td>
<td>8</td>
<td>24</td>
<td>4%</td>
</tr>
<tr>
<td>Intra-team feedback/critique</td>
<td>8</td>
<td>33</td>
<td>15%</td>
</tr>
<tr>
<td>Peer evaluation</td>
<td>8</td>
<td>33</td>
<td>15%</td>
</tr>
<tr>
<td>Student online coffee house</td>
<td>8</td>
<td>20</td>
<td>15%</td>
</tr>
<tr>
<td>Student introduction forum</td>
<td>2</td>
<td>26</td>
<td>4%</td>
</tr>
<tr>
<td>Bulletin board to express student expectations</td>
<td>9</td>
<td>13</td>
<td>15%</td>
</tr>
<tr>
<td>Notice</td>
<td>4</td>
<td>25</td>
<td>7%</td>
</tr>
</tbody>
</table>

**Dimensions of virtual teaming**

- **Task Dimension**
  - A sense of cohesion
  - Team formation/management
  - Conflict resolution

- **Social Dimension**
  - A workplace to support groupwork
  - Types of tools for communication/collab

- **Technological Dimension**
  - Effective use of tools

From Carabajal, LaPointe, and Gunawardena (2003)

**Strategies Used for Virtual Team Building**

*Lee, Bonk, Magjuka, Su, & Liu, in press*

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

**Strategies Used for Virtual Team Building**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Strategies</th>
<th>Courses in use (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technological dimension</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td>26 (99%)</td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
<td>8 (30%)</td>
<td></td>
</tr>
<tr>
<td>Text based asynchronous tools (e.g., discussion forums)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Text based synchronous tools (e.g., chat)</td>
<td>5 (19%)</td>
<td></td>
</tr>
<tr>
<td>Voice/visual based asynchronous tools (e.g., voice mail, voice message board)</td>
<td>5 (19%)</td>
<td></td>
</tr>
<tr>
<td>Voice/visual based synchronous tools (e.g., instant messaging, audio/video conferencing, live meeting)</td>
<td>0 (0%)</td>
<td></td>
</tr>
</tbody>
</table>

**Summary of Dimensions of Virtual Teams in Online MBA Courses**

<table>
<thead>
<tr>
<th>Dimensions of virtual teams</th>
<th>Degree (H, M, L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Dimension</td>
<td>H, M, L</td>
</tr>
<tr>
<td>Social Dimension</td>
<td>M, M</td>
</tr>
<tr>
<td>Technological Dimension</td>
<td>L, M, H</td>
</tr>
</tbody>
</table>

**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?