Just a Lot of Bonk: 15 Years of Online Learning Research, Results, and Reflections

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Theoretical Perspectives and Principles

Sociocultural Ideas
(Bonk & Cunningham, 1998)

1. Shared Space and Build Intersubjectivity
2. Social Dialogue on Authentic Problems (mind is in social interaction and extends beyond skin)
3. Mentoring and Teleapprenticeships
4. Scaffolding and Electronic Assistance in ZPD
5. Group Processing and Reflection
6. Collaboration and Negotiation in ZPD
7. Choice and Challenge
8. Community of Learning with Experts & Peers
9. Portfolio Assessment and Feedback
10. Assisted Learning (e.g., task structuring)
11. Reciprocal Teaching & Peer Collaboration

Premise #1:
Importance of Social Interaction
(Vygotsky, Wertsch, etc.)

• Social interaction develops new patterns of thought and strategic behaviors.

Premise #2. Mind is Distributed in Society

• Mind is in society—individual-in-social-action; mind extends beyond the skin (Vygotsky, Wertsch, etc.).

Distributed Intelligence
(in a learning community)

• Student higher-order mental functioning has its' roots in social relations. The mind, therefore, is distributed in society, and, extends beyond one's skin. Since knowledge is negotiated by members of a community of practice, the classroom should be organized to guide student learning toward membership in a learning community.
Distributed Intelligence (in a learning community)

• Participation in such a classroom is no longer didactic or transmissive, but a sophisticated instructional conversation.

Distributed Intelligence (in a learning community)

• While technology is vital here, it is but one resource of a learning community; other resources that should also be utilized include: experts, mentors, peers, curriculum/textbooks, teachers, self-reflection, assessment, parents, and the funds of capital within one's local community.

Premise #3. Learning Precedes Development

• Learning precedes development—so must nudge, prompt, provoke it, rouse it to life, etc.

Premise #4: Cognitive Apprenticeship

• Learners should be acculturated into an established community of practice. This is done through guided participation, scaffolding, and a gradual transfer of responsibility for the learning from the more experienced partner to the learner.

Guided Learning Model (Rogoff, 1990)

Cognitive Apprenticeship

• Collins, Brown, and Newman (1989) detail six teaching methods in an ideal cognitive apprenticeship: (1) modeling, (2) coaching, (3) scaffolding and fading, (4) articulation, (5) reflection, and (6) exploration.
Tele-apprenticeship

- As a result of advances in technology tools, there are myriad online learning environments that are mediated by experts, peers, mentors, teachers, etc. to help learners and teachers build and share knowledge through access to specialized expertise and information.

Premise #5: Zone of Proximal Development

A range of tasks too difficult for child to manage alone, but which can be achieved through interaction with another person (adult or more capable peer).

Types of Scaffolding

- Social Acknowledgement
- Questioning
- Direct Instruction
- Modeling/Examples
- Feedback/Praise
- Cognitive Task Structuring
- Cognitive Elaborations/Explanations
- Push to Explore
- Fostering Reflections/Self Awareness
- Encouraging Articulation/Dialogue Prompting
- General Advice/Scaffolding/Suggestions
- Management

Premise #6: Scaffolding in one’s ZPD

(Robert Slavin, 1993)

Premise #7: Assisted Learning

- There are a range of techniques for teachers to assist in the learning process (e.g., modeling, coaching, scaffolding and fading, questioning, directly instructing, task structuring, management and feedback, and pushing students to explore, reflect, and articulate ideas).

Premise #8: Learning Resources

- The cultural and intellectual capital within one’s teaching and learning environment. Includes peers, textbooks and the curriculum, technology tools, teachers, expert guests, community leaders, tests, self-reflection, etc.
Resources in a Learning Environment

- Teachers
- Peers
- Curriculum/Textbooks
- Technology/Tools
- Experts/Community
- Assessment/Testing
- Self Reflection
- Parents

Premise #9: Authentic Problems

- A learning experience or task which realistically mimics or approximates real world situations. They tend to be more engaging for learners.

Premise #10: Unit of Analysis

- Unit of analysis is the activity or word meaning.

Premise #11: Internalization

- Development moves from external to internal (appears twice).

Premise #12: Intersubjectivity

- Refers to a temporary shared collective reality among individuals. Conferencing and collaborative technologies can foster such shared space or situational understanding between learning participants which can help them negotiate meaning, design new knowledge, and perceive multiple problem solving perspectives.

Frameworks and Models
Nature and Nurture: An Interactional Model

The Web Integration Continuum (Bonk et al., 2000)

- Level 1: Course Marketing/Syllabi via the Web
- Level 2: Web Resource for Student Exploration
- Level 3: Publish Student-Generated Web Resources
- Level 4: Course Resources on the Web
- Level 5: Repurpose Web Resources for Others
- Level 6: Web Component in Substantive & Graded
- Level 7: Graded Activities Extend Beyond Class
- Level 8: Entire Web Course for Resident Students
- Level 9: Entire Web Course for Offsite Students
- Level 10: Course within Programmatic Initiative

Areas of Current Research

1. WikiBook creation and ownership
2. Open source movement in North America and China
3. Synchronous instruction with Breeze
4. Blended learning in corp training in 5-6 countries
5. Online communities, virtual learning, assessment, and case learning in online MBA programs
6. Delphi study of collaborative learning opportunities within blended learning
7. Massive Multiplayer Online Gaming (MMOG)
8. Blogging in higher education in China (and Korea)
9. Creativity and Critical Thinking in Online Art, Design, and Photomedia Project (Omnium)
10. What motivates someone to participate and contribute to YouTube

15 Pieces of this Story

15 Stories for 15 Years

1. 1993-1994: Peace, dude, hop off the return key, save me some stress.
2. 1995: What if Yersinsky had lived to 100...
3. 1996: Do not ride your bike to work.
4. 1997: You're on TITLE II to Dream!
5. 1997-1998: Look out for the Russians...
6. 1997: Do you believe in the power of sharing?
7. 1999-2000: Do you want to be target practice?
8. 2001: You were in, but you were never there.
9. 2002-2007: Who needs a TICKET?
11. 2004-2006: Data at your fingertips.
12. 2005-2007: A synchronous life is a breeze!
13. 2006-2007: Is there a blended expert in the house?
14. 2008: Where is a Wikibookian when you need one?
15. 2007-2008: You can be a YouTubeis tool!

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
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
  - 1,387 words/interaction vs. 256 words/interaction
- RT Collab > Responses
  - 3.1 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:
• How might he deal with those 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, Group 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 her own--to increase her own and increase motivation. Students will increase their learning because they will not just remember information to regurgitate on an essay but instead they will store those 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 tasks. Joyce's test also might reduce test anxiety. If her students know what to expect on the test (they even wrote the questions) they are more than likely will be less anxious on exam day... (January 31, 1994, Time: 10:26, Sarah Penway, 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...?
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., treks or virtual fieldtrips, ask on expert forums, cross-classroom collaboration, debate forums, online communities, Maya Quest, the Justus 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 Activ
  - Starter-Wrapper Disc
  - Personal Profiles
  - Student Portfolios
  - Feedback on Portfolios
  - Links Prior Semesters
  - Field Reflections
  - Field Observ Case Disc
  - Café Latte

- Sociocultural Link
  - Connect to Experience
  - Recip Teach & Dialogue
  - Build Intersubjectivity
  - Dynamic Assessment
  - Scaffolding 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
Problems Solved By COW

- Student isolation in field experiences
- Lack of communitydialogue 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>
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<tr>
<td>Management</td>
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</tr>
<tr>
<td>Motivation</td>
<td>185</td>
</tr>
<tr>
<td>Instructional Approaches</td>
<td>178</td>
</tr>
<tr>
<td>Individual Differences (special education</td>
<td></td>
</tr>
<tr>
<td>and gifted)</td>
<td></td>
</tr>
<tr>
<td>Hot Topics (e.g., teacher burnout,</td>
<td>63</td>
</tr>
<tr>
<td>violence in school, corporal punishment,</td>
<td></td>
</tr>
<tr>
<td>and drugs and alcohol)</td>
<td></td>
</tr>
<tr>
<td>Development (physical, cognitive, and</td>
<td>70</td>
</tr>
<tr>
<td>social/emotional)</td>
<td></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

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
- 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 appreciated & motivating
Story #4 (1998): Your En"TITLE"d to Dream!

Study: COW, Spring 1998
(Bonk, Malikowski, Suppicie, & Denne, 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 tchers, 3 conference moderators.
- Videoconferences + Web Conferences

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

Vertical Mentoring Examples
9. Author: Jerry Cochet (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 1:52 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: Kinsi
   Date: Mar. 6 11:1 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. Vygotksy here again, the teacher should be sensitive to see where the child's cognitive zone of development is and to help him over it. The teacher's task is not to try to keep the child at 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 move to the future with all the technological advances that will be made. But I don’t believe that it can actually take the role of a teacher. But in my opinion will never take the role of a teacher.**

25. Author: Jason
Date: Apr. 28 1:47 PM 1998

**I feel that 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 do this.**

26. Author: David
Date: Apr. 30 9:15 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.**

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**Indicators for the Quality of Students’ Dialogue**

(Engel, Valanides, & Bonk, 2003)

<table>
<thead>
<tr>
<th>ID</th>
<th>Indicators</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Social acknowledgement/ 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 extend dialogue</td>
<td>Could you give me more info? ...explain what you mean by...?</td>
</tr>
<tr>
<td>4</td>
<td>Critical thinking, Reconciling thinking Judgments</td>
<td>I disagree with X, because in class we discussed...I see the following disadvantages to this approach...</td>
</tr>
</tbody>
</table>

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**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

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**Spring of ’97 (FirstClass)**

Content Analysis of Online Discussion in Ed Psych (Hara, Bonk, & Engel, 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, metacoog 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 (ents unrelated to content)
4. Cognitive Events (e.g., clarifications, inferencing, judgment, & strategies)
5. Metacognitive Events (e.g., both metacognitive knowledge—person, and task, and strategy & evaluation, planning, regulation, & 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

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**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 & 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**

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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.
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 #6 (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, fbkb, listservs
to Practitioner: Forums, listservs

Table 7
Process of social systems with different systems for communication (live among instructors, students, and practitioners): Impact

<table>
<thead>
<tr>
<th>Team / Team</th>
<th>Team / Team</th>
<th>Team / Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor</td>
<td>Student</td>
<td>Practitioner</td>
</tr>
<tr>
<td>Post-lecture</td>
<td>Pre-lecture</td>
<td>Post-lecture</td>
</tr>
<tr>
<td>Web links</td>
<td>Online quizzes</td>
<td>Virtual chat</td>
</tr>
<tr>
<td>Online media</td>
<td>Mobile phones</td>
<td>Classroom</td>
</tr>
</tbody>
</table>

Story #7 (2000): Do you want to be target practice?

Online Officer Training Program (2000-2003)

- Evaluated social interaction, problem solving, online mentoring, and social interaction environment of Army officer training program; focus on instructional design, blended learning.

Online Officer Training Program Team

1. Dr. Robert Wisher, DOD and ARI
2. Dr. Tatana Olson, was at SRI/Purdue, now at Navy as Aviation Experimental Psychologist, Pensacola (wants to be first female fighter pilot)
3. Dr. Kara Orvis, was at ARI, Optima, Boston.
4. Dr. Ji-Yeon Lee, University of South Carolina (now at Inha University in Korea)
5. me

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 & Burns (2001); Sanders & Guyer (2001)

- Completed coursework in less time than correspondence course.
- Positive attitudes
- Covered additional 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

- 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


- Exploring the educational and training potential of massive multiplayer online games and mapping out a research agenda in this area for the Advanced Distributed Learning Lab within the Department of Defense.

Massive Multiplayer Online Gaming (MMOG) Team

1. Dr. Vanessa Dennen, Florida State
2. me
3. With help from Dr. Robert (Bob) Wisher

Publications: Massive Multiplayer Online Gaming (MMOG)

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

Behavior Categories | Codes | Description
--- | --- | ---
Initiating Activities | IA | Initiation Activities

The table below summarizes the online collaboration behaviors by categories:

<table>
<thead>
<tr>
<th>Behavior Categories</th>
<th>Finland</th>
<th>U.S.</th>
<th>Average</th>
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<tr>
<td>Initiating</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>Contributing</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
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<tr>
<td>Seeking Input</td>
<td>12.7</td>
<td>21.0</td>
<td>18.8</td>
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<tr>
<td>Reflection</td>
<td>6.1</td>
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<tr>
<td>Social Interaction</td>
<td>0.4</td>
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<td>Total</td>
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Online Collaboration Analysis (Korea)

<table>
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<tbody>
<tr>
<td></td>
<td>Code</td>
</tr>
<tr>
<td></td>
<td>count</td>
</tr>
<tr>
<td>Overall</td>
<td>85</td>
</tr>
<tr>
<td>Sharing Knowledge</td>
<td></td>
</tr>
<tr>
<td>Advocating efforts</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 not any specific act that can be used to increase students' motivation. According to McCombs, almost everything 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 #9 (2002-2007): Who needs a ticket?
- Curt Bonk
- Lee Ehman
- Emily Hixon
- Lisa Yamagata-Lynch
- John Keller
- Indiana University

TICKIT (1998 to 2003 and to present)
- Five year investigation of the implementation of the Teacher Institute for Curriculum Knowledge about the Integration of Technology which annually trains 25 teachers from 5 rural Indiana schools; exploring long-term impact of inservice technology integration program.

TICKIT Team
1. Dr. Lee Ehman, IU, C&I Dept.
2. Dr. John Keller, IUPUI
3. Dr. Emily Hixon, IU Northwest
4. Dr. Lisa Yamagata Lynch, Univ of Northern Illinois
5. Timothy Hew, IU, IST Dept.
6. me

TICKIT Program Features

Welcome to TICKIT
Teacher Institute for Curriculum Knowledge and Integration of Technology
Program Directors: Paul N.lick, Charles A. Mikus, Susan Schneider, Janice D. Steffen, and Susan Schneider
Welcome to a new learning environment. Enjoy the experience!
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

Online Interaction

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**

- [Image of example projects]

**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**

- [Image of figure showing forms of learning assistance]

**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 experiences
- 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>Mean</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>Value (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Technology Integration</td>
<td>74.88</td>
<td>28.23</td>
<td>5.665</td>
<td>1800*</td>
<td>.000***</td>
<td>1.81</td>
</tr>
<tr>
<td>2. Technology Limitation</td>
<td>11.48*</td>
<td>15.79</td>
<td>-3.343</td>
<td>480**</td>
<td>.000***</td>
<td>.63</td>
</tr>
<tr>
<td>3. Technology Resistance</td>
<td>4.25**</td>
<td>1.31</td>
<td>-3.142</td>
<td>500***</td>
<td>.000***</td>
<td>.30</td>
</tr>
<tr>
<td>4. Computer Proficiency</td>
<td>26.81</td>
<td>10.84</td>
<td>4.611</td>
<td>800***</td>
<td>.000***</td>
<td>1.29</td>
</tr>
<tr>
<td>5. Learner-centered Interaction</td>
<td>15.29</td>
<td>11.48</td>
<td>5.128</td>
<td>800***</td>
<td>.000***</td>
<td>1.22</td>
</tr>
</tbody>
</table>

**TICKIT Teacher Voices**

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

**Relative Impact**

<table>
<thead>
<tr>
<th>Source of Influence</th>
<th>1st semester</th>
<th>2nd semester</th>
<th>3rd semester</th>
<th>% Impacting_Size 1-2</th>
<th>Size 3+</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Teacher Support</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>Core course</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Other course materials</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Distant Learning</td>
<td>6</td>
<td>1</td>
<td>5</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Active technology integration</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Online course material TICKIT</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Personal satisfaction and interest</td>
<td>24</td>
<td>16</td>
<td>23</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>Personal satisfaction and interest</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>TICKIT professional development</td>
<td>15</td>
<td>25</td>
<td>16</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>Personal, professional development</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Ultimate, online, student centered</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2%</td>
<td></td>
</tr>
</tbody>
</table>

**Story #10 (2003): Where is Disneyland?**

Online Learning Survey Research (2001-2006)

**Myth #1. College instructors are loyal.**

**Myth #2. Young instructors will jump on this.**

<table>
<thead>
<tr>
<th>Gender of Respondents</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male, 46.64</td>
<td></td>
</tr>
<tr>
<td>Female, 53.32</td>
<td></td>
</tr>
</tbody>
</table>

24
Myth #3.
College instructors will flock to sophisticated technologies.

![Graph showing usage of Web skills by instructors.](image)

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

![Graph showing major obstacles to using the Web in teaching.](image)

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

![Graph showing attitudes towards compensation for teaching online.](image)

Trend 1: Enrollments Growth in Certificates and Short Programs

![Graph showing growth in enrollments for online programs.](image)

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

![Comparison of student outcomes in online learning vs traditional instruction.](image)

Trend 3: Technology Outpaces Theory

Kevin Kluse, November 2003, CLO, Tech Trends Impacting E-Learning

![Graph showing activities, tools, and resources that influence course Web sites.](image)
Present State and Future of E-Learning and Blended Learning (2000-Present)

- In process of analyzing new directions in e-learning and blended learning in both higher education and corporate settings in the UK, USA, China, Taiwan, and Korea via survey research (Note: my previous studies explored current state of online learning in higher education and corporate settings).

Present and Future of E-Learning and Blended Learning Team

1. Dr. KJ Kim (now at Portland State)
2. YaTing Teng, Univ of Illinois
3. Su Jin Son, Univ of Illinois
4. Tingting Zeng, Roehampton Univ, UK
5. Eun Jung Oh, Univ of Georgia
6. Jingli Cheng, Indiana University
7. Chris Essex, IU, IST Dept.
8. me

Using Blended?

7. Is your organization using blended learning as part of its employee training? (US, UK, Korea, Taiwan)

- 31%
- 20%
- 9%
- 5%
- 35%

- No, it is not something that we have considered.
- No, but we are considering using it.
- Yes, we have recently started using it.
- Yes, we have been using it for more than 2 years now.
- Not sure. What is blended learning?

Skills Taught Blended

Skill Areas Taught Through E-Learning (US, UK, Korea, Taiwan)

Government Support Online

Government support? (US, UK, Korea, Taiwan)

- Very supportive
- Somewhat supportive
- Neutral
- Not supportive
- Not supportive at all

Major Issue for Blended

Most Significant Issue or Problem of BL (US, UK, Korea, Taiwan)

- Learner resistance
- Dog resistance
- Fast changing task
- Blending content
- Lack selling skills
- Not enough support
- Not understood at all
Instructional Strategies Online

Which strategies will become most widely used in EO?
(U.S., UK, Korea, Taiwan)

Online MBA Program
(Dec. 2003-Present)

- Exploring many aspects of Kelley Direct online MBA program at IU—the only top 20 MBA program that is fully online (includes research on virtual teaming, case-based learning, student and faculty perceptions, asynchronous discussion, instructor roles, technology use, time management, etc.).
- (Supervised 8-9 people on this project—work includes student and faculty interviews, focus groups, surveys, content analyses, etc.)

About the Online MBA Program

- Founded in 1999
- Program length: 24 months
- Completion rate: 96%
- Course delivery: online
  - Course Management System (ANGEL)
- One week in-residence per year
- Number of students: 1398 (as of 2006)
  - Female students: 21%
  - International students: 15%

Online MBA Program Team

1. Dr. Rich Magjuka, IU, KD Bus School
2. Dr. Seung-hoe Lee, IU, KD Bus School
3. Dr. Xiaojing Liu, IU, KD Bus School
4. Baele Su, IU, IST and KD Bus School
5. Dr. KD Kim, Portland State University
6. Sijuan Liu, IU, IST Dept.
7. Dr. Min Shi, University in China
9. Dr. Minyoung Doo, James Madison Univ.
10. Alyssa Wise, IU, Learning Sciences
11. Pam Fahrmann, IU, Ed Psych Dept.
13. me

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

Figure 1. Instructors’ preferences for different roles based on interview findings (High priority=3, Medium=2, Low priority=1)
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)

Usage of Different Tools

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text boxes</td>
<td>27</td>
<td>55%</td>
</tr>
<tr>
<td>Videoconference/interviews</td>
<td>21</td>
<td>42%</td>
</tr>
<tr>
<td>Interactive white board</td>
<td>16</td>
<td>32%</td>
</tr>
<tr>
<td>Presentations/slides</td>
<td>15</td>
<td>30%</td>
</tr>
<tr>
<td>Discussion boards</td>
<td>8</td>
<td>16%</td>
</tr>
</tbody>
</table>

Types of technologies

<table>
<thead>
<tr>
<th>Technology</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>22</td>
<td>44%</td>
</tr>
<tr>
<td>Partnership</td>
<td>16</td>
<td>32%</td>
</tr>
<tr>
<td>Technologies</td>
<td>15</td>
<td>30%</td>
</tr>
<tr>
<td>Internet</td>
<td>12</td>
<td>24%</td>
</tr>
<tr>
<td>Networking</td>
<td>10</td>
<td>20%</td>
</tr>
<tr>
<td>Relationship</td>
<td>8</td>
<td>16%</td>
</tr>
<tr>
<td>Social Learning</td>
<td>6</td>
<td>12%</td>
</tr>
<tr>
<td>Negotiation</td>
<td>4</td>
<td>8%</td>
</tr>
</tbody>
</table>

“Collaborative” Virtual Teams?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asking/responding to instructor</td>
<td>27</td>
<td>55%</td>
</tr>
<tr>
<td>Feedback on assignments</td>
<td>27</td>
<td>55%</td>
</tr>
<tr>
<td>Summary of class key points/concepts</td>
<td>25</td>
<td>0%</td>
</tr>
<tr>
<td>Instructor participation in class</td>
<td>12</td>
<td>24%</td>
</tr>
<tr>
<td>Team-based learning activities</td>
<td>10</td>
<td>20%</td>
</tr>
<tr>
<td>Participation in online discussion</td>
<td>10</td>
<td>20%</td>
</tr>
<tr>
<td>Small team discussions</td>
<td>12</td>
<td>24%</td>
</tr>
<tr>
<td>Instructor participation in team discussions</td>
<td>12</td>
<td>24%</td>
</tr>
<tr>
<td>Virtual office hours</td>
<td>9</td>
<td>18%</td>
</tr>
<tr>
<td>Team/team feedback/critique</td>
<td>8</td>
<td>16%</td>
</tr>
<tr>
<td>Peer evaluation</td>
<td>6</td>
<td>12%</td>
</tr>
<tr>
<td>Student active office hours</td>
<td>5</td>
<td>10%</td>
</tr>
<tr>
<td>Student introduction forum</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Software based to express student expectations</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>Invitations</td>
<td>2</td>
<td>4%</td>
</tr>
</tbody>
</table>

Dimensions of Virtual Teams

(Carabajal et al., 2003; Duarte & Snyder, 1999)

Task Dimension
- Productivity
- Team formation & management
- Cognitive conflict resolution

Social Dimension
- Team cohesion
- Emotional relationship
- Sense of community

Technological Dimension
- Tools for communication/collaboration
- Effective use of tools

Team Builder
Strategies Used for Virtual Teaming

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

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Strategies</th>
<th>Courses in use (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Smart</td>
<td>26 (96%)</td>
</tr>
<tr>
<td></td>
<td>Telephone</td>
<td>8 (28%)</td>
</tr>
<tr>
<td></td>
<td>Text based asynchronous tools (e.g., discussion forums)</td>
<td>4 (15%)</td>
</tr>
<tr>
<td></td>
<td>Text based synchronous tools (e.g., chat)</td>
<td>5 (19%)</td>
</tr>
<tr>
<td></td>
<td>Voice-/visual based asynchronous tools (e.g., voice mail, voice message board)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td></td>
<td>Voice-/visual based synchronous tools (e.g., instant messaging, audio/video conferencing, live meeting)</td>
<td>0 (0%)</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</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task dimension</td>
<td></td>
</tr>
<tr>
<td>Belief in contribution of knowledge building</td>
<td>H</td>
</tr>
<tr>
<td>Use of task techniques for team activity design</td>
<td>M</td>
</tr>
<tr>
<td>Social dimension</td>
<td></td>
</tr>
<tr>
<td>Use of social techniques in virtual teams</td>
<td>M</td>
</tr>
<tr>
<td>Use of human interaction approach</td>
<td>M</td>
</tr>
<tr>
<td>Sharing social presence and cohesion</td>
<td>M</td>
</tr>
<tr>
<td>Technological dimension</td>
<td></td>
</tr>
<tr>
<td>Use of text based synchronous tools</td>
<td>L</td>
</tr>
<tr>
<td>Use of audio and video based synchronous tools</td>
<td>L</td>
</tr>
<tr>
<td>Usefulness of collaborative tools</td>
<td>M</td>
</tr>
</tbody>
</table>

Degree: H=High, M=Medium, L=Low

Findings: Survey Results: I feel I am part of a learning community in KD

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.

Story #12 (2006-2007):
A synchronous life is a Breeze.

Research on use of Breeze synchronous training tool in online teaching in Instructional Systems Technology at IU.
- Transcripts
- Interviews
The movement toward synchronous instruction

Making learning interactive is (was) a Breeze!

Synchronous Conferencing
(Breeze, Elluminate, WebEx, etc.)

Synchronous Sessions
(Breeze, Elluminate, WebEx, etc.)

Research Questions
- What sync strategies employ in critique activity?
- What instructional benefits of sync?
- What issues and challenges encounter?
- How is Breeze as a sync collaboration tool?
- What suggestions and practical guidelines?
Spring 2006: Merge distance and residential
- 22 distance students
- 11 residential students
- One full-time faculty member
- Five graduate teaching assistants
- 49 synchronous critique sessions

Table 1: Numbers of Synchronous Critique Sessions and Tools Used

<table>
<thead>
<tr>
<th>Number of synchronous Critique sessions held</th>
<th>Tools used for synchronous critique sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>49 (including 3 practice sessions)</td>
<td>Breeze[1] &amp; telephone (38)[2]</td>
</tr>
<tr>
<td></td>
<td>Breeze &amp; Breeze voice chat (4)</td>
</tr>
<tr>
<td></td>
<td>Breeze &amp; Breeze text chat (5)</td>
</tr>
<tr>
<td></td>
<td>Breeze &amp; Breeze voice chat &amp; telephone (2)</td>
</tr>
</tbody>
</table>

Purpose of Critique Sessions
- (1) to help students apply the newly learned design principles in order to evaluate media design products,
- (2) to exchange constructive feedback on each other's project in progress.

Synchronous Critique in Breeze Context

Table 3: Benefits of Peer Critique
- Providing immediate feedback
- Encouraging to exchange multiple perspectives
- Increasing interactions among participants
- Enhancing dynamic interactions
- Promoting passive students to become active
- Strengthening social presence allowing to exchange of emotional supports and supplying verbal elements

Table 4: Instructional Strategies Employed
- Promote interactions:
  - Structure the synchronous critique activity
  - Scaffold the discussion
  - Moderate students' critique behaviors
  - Use a small-group and be flexible about synchronous activity management

32
Instructional Supports
- Prepare Students
  - Provided ground rules and guidelines
  - Held practice sessions
  - Provided materials to be critiqued

Table 5: Issues Identified on Synchronous Tools and Scheduling

<table>
<thead>
<tr>
<th>Issue/Feature</th>
<th>Advantages</th>
<th>Obstacles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual whiteboard</td>
<td>Screen-share function during presentations</td>
<td>Small viewers, delay or difficulty in playing large-sized files.</td>
</tr>
<tr>
<td>Shop talk</td>
<td>Feedback to organize participant roles</td>
<td>Stability of structure</td>
</tr>
<tr>
<td>Courseware</td>
<td>Compatibility with the existing course</td>
<td>Relatively high cost</td>
</tr>
<tr>
<td>Instant messaging</td>
<td>No additional cost required</td>
<td>Difficulty in monitoring discussion with a large group of students</td>
</tr>
</tbody>
</table>

Study #13: Is there a Blended Expert in the House?
The Roles of Blended Learning in Computer-Supported Collaborative Learning (CSCL) Environments: A Delphi Study

Hyo-Jeong So, Assistant Professor, National Institute of Education, Singapore
hyojeong.so@nie.edu.sg

Curtis J. Bonk, Professor, Indiana University, United States
cjbonk@indiana.edu

Handbook of Blended Learning (Bonk & Graham, 2006)

Overview
- Purpose of the study
- Methods
  - Delphi Study Process
  - Delphi Panel
  - Electronic Delphi
- Results: Rounds I & II Surveys
- Plan for Round III Survey
- Discussions

Purpose of the Study
- What are the roles of blended learning in CSCL environments?
  - Is blended learning really an effective and efficient approach?
- What are possible disadvantages of blended learning?
  - How would blended learning change our learning environments?
Methods

• Delphi Study
  - To capture the judgment of recognized experts in the field of distance education
  - Time- and cost-efficient method to obtain opinions from experts without physically bringing them together for a face-to-face meeting
• Electronic Delphi: utilized online survey forms
  (http://www.surveyshare.com)

Delphi Process

Delphi Panel

• Invited 32 experts who had contributed chapters to the recent Handbook of Blended Learning (Bonk & Graham, 2006)
• Numbers of Participants
  - Round 1: N=13, Round II: N=14
• Geographical locations
  - 4 from US, 2 from Europe, 4 from Asia, and 4 from other areas
• Expertise levels
  - 13 indicated high expertise in blended learning
  - 11 indicated high expertise in CSCL

Round 1 Results

38 themes were identified from participant responses (Example)
Questions 1. In general, how can blended learning strategies facilitate collaborative learning activities?
1.1. Blended learning facilitates project management with online technologies.
1.2. Blended learning supports flexibility and effectiveness in work and communication.
1.3. Blended learning provides the time and flexibility for preparation and follow-up and the time-specific stimulus of a face-to-face session to keep students on track.
1.4. Blended learning helps knowledge construction.
1.5. Blended learning helps relationship building.

Round 2 Questions

• Purpose: to identify agreements and disagreements
• Likert scale on items identified in Round I

-2 strongly disagree
-1 disagree
0 undecided
1 agree
2 strongly agree

• Rankings: “What is the most important item?”
• Reasons: “Please provide a brief explanation for your selection”
• Measure expertise level for each question: No expertise to High expertise

Q 1. In general, how can blended learning strategies facilitate collaborative learning activities?

<table>
<thead>
<tr>
<th>High Consensus</th>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartiles</th>
<th>Ranking Frequency Most important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1. Blended learning facilitates project management with online technologies.</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Delphi Item</td>
</tr>
<tr>
<td>1.2. Blended learning supports flexibility and effectiveness in work and communication.</td>
<td>1</td>
<td>.5</td>
<td>4</td>
<td>Delphi Item</td>
</tr>
<tr>
<td>1.3. Blended learning provides the time and flexibility for preparation and follow-up and the time-specific stimulus of a face-to-face session to keep students on track.</td>
<td>1</td>
<td>.5</td>
<td>5</td>
<td>Delphi Item</td>
</tr>
<tr>
<td>1.4. Blended learning helps knowledge construction.</td>
<td>1</td>
<td>.5</td>
<td>6</td>
<td>Delphi Item</td>
</tr>
<tr>
<td>1.5. Blended learning helps relationship building.</td>
<td>1</td>
<td>.5</td>
<td>7</td>
<td>Delphi Item</td>
</tr>
</tbody>
</table>
Q2. How might blended learning hamper or interfere with online collaborative learning activities?

**High Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1. It can interfere when the different blended components are not well connected.</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2.2. Lack of access and skills to make effective use of the tools are potential barriers.</td>
<td>1</td>
<td>.5</td>
<td>1</td>
</tr>
<tr>
<td>2.5. There must be a correspondence between face-to-face and online course components.</td>
<td>1</td>
<td>.5</td>
<td>7</td>
</tr>
</tbody>
</table>

**Low Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3. Students may feel that there’s no need to go online if they can work face-to-face.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2.4. Students can engage online activities with self-paced work and face-to-face activities with collaboration.</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Q3. How might blended learning foster collaboration among students in a class?

**High Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1. Responses can be made either in face-to-face or online environments.</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3.2. Blended learning can widen access to resources.</td>
<td>1.5</td>
<td>.5</td>
<td>0</td>
</tr>
<tr>
<td>3.3. Students can collaborate online after building a sense of community in a face-to-face context.</td>
<td>1.5</td>
<td>.5</td>
<td>4</td>
</tr>
<tr>
<td>3.4. Online tools can support project management and discussion.</td>
<td>1.5</td>
<td>.5</td>
<td>5</td>
</tr>
<tr>
<td>3.5. Online space provides opportunities for students to discuss knowledge and clarify misconceptions.</td>
<td>1</td>
<td>.5</td>
<td>3</td>
</tr>
</tbody>
</table>

Q4. How might blended learning foster collaboration among students located in more than one university or region?

**High Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1. The online learning management system (LMS) can be used as a medium to enhance collaboration.</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>4.2. While face-to-face components typically occur within a local university, online collaboration can involve collaboration with students outside an institution.</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>4.4. Online learning results are distributed working on class tasks and returns travel.</td>
<td>1</td>
<td>.5</td>
<td>3</td>
</tr>
</tbody>
</table>

**Low Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3. The location of the collaborators does not matter.</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Q5. How might blended learning foster collaboration among instructors?

**High Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1. Instructors in the same department or even across departments can collaborate and learn from each other by sharing resources.</td>
<td>1</td>
<td>.5</td>
<td>1</td>
</tr>
<tr>
<td>5.2. It depends on how the learning design involves interactions with others.</td>
<td>1</td>
<td>.5</td>
<td>6</td>
</tr>
<tr>
<td>5.3. Blended learning has the potential to develop networks beyond the conference circuit.</td>
<td>1</td>
<td>.5</td>
<td>1</td>
</tr>
<tr>
<td>5.4. Blended learning can help instructors maintain their standard curricula as well as their instructional processes, thereby providing quality controls and learning outcomes assessments.</td>
<td>1</td>
<td>.5</td>
<td>1</td>
</tr>
<tr>
<td>5.5. Blended learning can be used to offer online staff development courses.</td>
<td>1</td>
<td>.5</td>
<td>3</td>
</tr>
</tbody>
</table>

Q6. How might blended learning foster collaboration among students and their instructors or tutors?

**High Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1. Blended learning can foster open two-way learning and communications.</td>
<td>1</td>
<td>.5</td>
<td>1</td>
</tr>
<tr>
<td>6.2. With online technologies, it is possible to have ongoing conversations and collaborations with instructors outside of the traditional learning space.</td>
<td>1.5</td>
<td>.5</td>
<td>3</td>
</tr>
<tr>
<td>6.3. It depends on how the course is designed.</td>
<td>2</td>
<td>.5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Low Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4. Students and instructors can take equivalent roles in the teaching and learning process.</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Q7. How might blended learning foster collaboration of students and experts?

**High Consensus**

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1. Experts can share their expertise through both online and offline formats.</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7.2. Students can talk to experts more intensively via online learning.</td>
<td>1</td>
<td>.5</td>
<td>0</td>
</tr>
<tr>
<td>7.3. It depends on how the learning design involves interactions with others.</td>
<td>1</td>
<td>.5</td>
<td>8</td>
</tr>
<tr>
<td>7.4. It is easier to get experts.</td>
<td>.5</td>
<td>.5</td>
<td>2</td>
</tr>
<tr>
<td>7.5. Students can have instant access to the work of experts, but need to gather, evaluate, and use information in a responsible way.</td>
<td>1</td>
<td>.5</td>
<td>2</td>
</tr>
</tbody>
</table>
Q8. How might online collaboration within blended learning change or be different in 20 years?

High Consensus

<table>
<thead>
<tr>
<th>Delphi Item</th>
<th>Median</th>
<th>Quartile Deviation</th>
<th>Ranking Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1. Collaborative activities will become more complex, but more resources to support them will be available.</td>
<td>1</td>
<td>.5</td>
<td>6</td>
</tr>
<tr>
<td>8.2. More international collaboration will be possible.</td>
<td>1</td>
<td>.5</td>
<td>2</td>
</tr>
<tr>
<td>8.3. The technology will change, but the need to collaborate and the limits principles of learning may not.</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>8.4. Integrated and ubiquitous technologies will provide solutions, fast, and easy access to shared environments.</td>
<td>1</td>
<td>.5</td>
<td>2</td>
</tr>
<tr>
<td>8.5. There will be no bi-polar classification of online learning and off-line learning. All the learning will be blended learning.</td>
<td>1</td>
<td>.5</td>
<td>8</td>
</tr>
</tbody>
</table>

Discussions

- High consensus on the importance of:
  1. Pedagogy and 2. Interaction design behind blending learning
- Barriers of blended learning in CSCL
  - Lack of correspondence/integration between online and face-to-face components
- Prediction for future
  - There will be no bipolar classification.
  - A new way to define learning might surface with seamless ubiquitous technologies.

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Story #14 (2006-?): Where is a Wikibookian when you need one?

Survey of more than 80 Wikibookians about the creation and coordination of a Wikibook. Issues addressed include ownership, problems encountered, tools to facilitate online collaboration.

WikiBookians in the Web 2.0: Exploring the Wonders of Collaborative Writing in the Wikibooks Website

Curt Bonk, Indiana University  
cjbonk@indiana.edu

Subhajit Saigajpannej, Indiana University  
Mimi Lee, University of Houston  
Grace Lin, University of Houston  
(the Wiki-REX research team)  
See http://wiki-viki.wikispaces.com


WikiBook Questions

- Have you ever read or edited an entry in Wikipedia? How about a Wikibook—have you ever read a Wikibook or helped write one? Have you ever collaborated with others to put a Wikibook together?
- Who owns a Wikibook? The chapter authors? The readers? The book coordinators? All of the above?
- Can a Wikibook ever be completed? Why or why not?
R685: Web 2.0 and Emerging Learning Technologies (The WELT)

Web 2.0 and Emerging Learning Technologies/Digital Divide

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Wikipedia</th>
<th>Wikibooks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Historical Statistics</td>
<td>0,104,148 pages</td>
<td>71,800 pages</td>
</tr>
<tr>
<td>(as of March 24, 2007):</td>
<td>6.4 million articles</td>
<td>26,000 modules or</td>
</tr>
<tr>
<td></td>
<td>1,703,263 articles in English</td>
<td>chapters</td>
</tr>
<tr>
<td></td>
<td>250 languages</td>
<td>Over 1,000 books,</td>
</tr>
<tr>
<td></td>
<td>121,844,043 edits</td>
<td>the largest</td>
</tr>
<tr>
<td></td>
<td>15.05 edits per page</td>
<td>category in English</td>
</tr>
<tr>
<td></td>
<td>709,061 media files</td>
<td>120 languages</td>
</tr>
<tr>
<td></td>
<td>3,332,542 registered users</td>
<td>817,541 page edits</td>
</tr>
<tr>
<td></td>
<td>1,155 system admins</td>
<td>11.36 edits per page</td>
</tr>
</tbody>
</table>

Wikibookian

A Wikibookian is someone who coordinates, edits, or contributes to a Wikibook project.

Findings from Surveys

- Demographical data: 58% of Wikibookians were younger than 25 years old.

<table>
<thead>
<tr>
<th>Age</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>18-25</td>
<td>31</td>
<td>39</td>
</tr>
<tr>
<td>26-34</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>35-50</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>51-65</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Over 65</td>
<td>2</td>
<td>2.5</td>
</tr>
</tbody>
</table>

I. Statuses

1. Wikibookian Demographic or Status Questions: Just who are Wikibookians in terms of age, gender, educational backgrounds, current job or occupation, and previous experience with wikis?

Demographical data: more than 97.5% were male
II. Successes

2. Wikibook Coordination and Success Questions: What are the key roles of a Wikibookian? What challenges, frustrations, and obstacles do they face within those roles? And what motivates Wikibookians to collaborate with others in the development of a Wikibook? Did they find their most recent Wikibook project a success? And can a Wikibook project ever be completed?

WikiProject a Success?

- 76% of Wikibookians agree that their recent Wikibook project was successful.

III. Satisfactions

3. Satisfaction with Wikibook Environments and Tools Questions: How satisfied are Wikibookians with the existing suite of tools and resources? What improvements should be made to existing ones? What additional Wikibook tools and resources are needed?

Any Problems or Barriers?
IV. Sociocultural Experiences


Findings from Surveys (cont.)
- Wikibook Completion: Can a Wikibook ever be completed? 58% of Experts say yes!

Some Themes from Email Interviews

Theme #1: Introduction to Wikibook
- I helped found Wikibooks when I started writing an Organic Chemistry textbook on Wikipedia. Jimmy Wales agreed to start another site where we could write textbooks.
- I found Wikibooks about Wikipedia, after I realised that my project on which I was working got too long for Wikipedia.

Theme #3: Important Features and Activities Necessary for Collaborative Environments from a Wikibookian’s Perspective
- A way for people to communicate with each other, a way to track the contributions of each person, a way to make the information accessible to newcomers, a simple interface that an average person can learn very quickly or even use intuitively.
- A special area where one set group of people can take over a book for a time, for example, to enable one class or one group of professors develop materials.
Theme #6: Toward Collaborative Knowledge Construction: Issues of Ownership and Disputes over Editing
- So revert it :) It's a Wiki, so everybody can edit it. When s.o.'s edit doesn't apply to my standards, I can revert it. And that person can revert me too. When we both find it important, we can start talking through the talkpage...
- This has happened to me. In my experience, changing the material back is pointless, and will just cause dispute.

Theme #9: Wikibook Recommendations
- I'd suggest getting several co-authors from the get go and deciding on a template for the book chapters so it is uniform from the beginning. It's bound to change over time, but you may as well start with a plan.
- Get help. Don't try to do it on your own, it's a too big amount of work and you will definitely loose the overview.

Theme #10: The Future of Wikibooks and Other Comments
- Community-written textbooks in every American classroom as well as around the world, students and teachers involved in the production of textbooks on occasion as a part of the development process, better textbooks then we have ever had before, teaching materials shared for free in many languages all over the globe, the end or dramatic change of much of the textbook industry (cartel) as it currently exists.
- I don't think the concept will catch on except among small niches until there are some very well-developed textbooks available on the site.

Final Participant Quotes and Paper
"Go rockin' on!"
"I love wikis they're truly the closest example of the purest form of democracy."

For paper, see http://wiki-riki.wikispaces.com

Story #15 (2007-?): You can be a YouTubian Too!
Exploring online motivational and collaborative factors in watching and generating YouTube videos. Also looking at participatory forms of learning.
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?