P600/R685 Topical Seminar (Ed Psych as well as IST)
"Interactive Tools for Learning and Collaboration" (3 Cr)
Fall 2001, Room 1002, Mondays 7:00-9:50 Section 5864 (P600); 5998 (R685)

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(see http://php.indiana.edu/~cjbonk/p600syl.html for information on assignments)

Course Description:
Robert Taylor advocated the use of computers as educational tutors, tools, and tutees nearly 2 decades ago. While these three metaphors continue to promote innovative ideas about technological bridges to human learning, today I prefer to discuss how technology can enhance, extend, and transform teaching and learning as well as how technology-rich curriculum innovations should be shared. If it can do these things, the specific technology does not matter. Yet, everyone in the new millennium seems focused on the Web. It is attracting attention like the tube was 30-40 years ago. As a result, in this seminar, we will discuss the Web and its impact on learning, while also considering the notion of the computer as an educational learning tool and collaborative device. Besides the Web, we will discuss a range of collaborative educational learning tools (e.g., conferencing tools, hypermedia, groupware, microworlds, electronic databases and knowledge building mechanisms, notecards and planning aids, idea processors, scientific computer probes, and animation and graphical aids). Just how do these technologies accomplish differing learning goals? In addition, we will discuss how to design and analyze research in such environments.

This class is intended to provide a roadmap to some of the key human learning and development principles underlying each of these technologies. At the same time, students will have several hands-on experiences with interactive technologies and be engaged in projects with real world payoff. Clearly, this course will be applicable to students interested in teaching with technology, conducting research with computer tools, or developing new tools. While we wrestle with cognitive, instructional, and sociocultural theory issues, we shall ground this discussion with researchable questions, actual tool development dilemmas, and various implementation possibilities. In addition, this class will incorporate an assortment of lectures, demonstrations, videos, and small and large group discussion activities. All students will be encouraged to demonstrate at least one interesting technology tool or prototype during the semester. After the course, students should be able to (1) appreciate the diverse application of learning technologies, (2) design plans to use technology as a learning tool, and (3) perceive innovative knowledge construction and peer collaboration possibilities.

Required Texts:
1. Bonk, C. J., & King, K. S. (1998). Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse. Mahwah, NJ: Erlbaum.

2. Course *Book of Readings*: See Mr. Copy.

Optional Texts:
1. Lajoie S. (Eds.). (2000). *Computers as Cognitive Tools: No More Walls.* Erlbaum.
2. The Jossey-Bass Reader, on Technology and Learning. (Eds.), (2000). San Fran, CA.
3. Abbey, B. (Ed.). (2000). *Instructional and Cognitive Impacts of Web-Based Education.* Hershey, PA: Idea Group Publishing.

Tentative Tasks and Grading:

15 percent/30 pts	**A. Weekly Attendance and Participation (WAP)** (15%)	
15 percent.30 pts	**B. Online Mentoring and Reflection (OMAR)** (Report *Due Dec. 3rd*)	
10 percent/20 pts	**C. Library Day—Article Search and Summary (LD--…)** (Oct. 29nd)	
25 percent/50 pts	**D. Definitions and Taxonomy (DaT)** *(Due Nov 12th)*	
35 percent/70 pts	**E. Pedagogical Business Plan Project & Presentation (PBPPP)** *(Dec. 3rd)*	
	(Plan is worth 50 points, presentation is worth 20 points) (or Due Dec. 10th)	

200   Total Points

We will use a point system for each project, evenly dividing points among aspects of each assignment. Total points will determine your final grade. I will use the following grading scale:

A+ = high score	B- = 160-164 points
A = 185-200 points	C+ = 153-159 points
A- = 180-184 points	C = 145-152 points
B+ = 174-179 points	C- = 140-144 points
B = 166-173 points	F/FN = no work rec'd or signif. inadequate/impaired

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Projected Seminar Weekly Topics:

Week 1. (Aug 27th) Introduction to Interactive Technologies for Learning and Collaboration
         a. Q: What is a tool?
         b. Do: Review syllabus and expectations.

Week 2. (Sept. 3rd) Learner Choice: Temporary Optional Text Selection (TOTS)
         a. Q: Why is the psychology of learning important here?
         b. Read from one of 3 optional books.

Week 3. (Sept. 10th) Linking Tools to Cognitive, Learner Centered, and Constructivist Principles
         a. Q: What is learner-centered design?
         b. Q: What is constructivistic design?

Week 4. (Sept. 17th) Key Issues, History, and Principles
         a. Q: What are the key dilemmas facing this field?

Week 5. (Sept. 24th) Writing Tools for Idea Generation, Collab, and Cognition Enhancement
         a. Q: What tools do you use to write or compose?
         b. Q: What is a knowledge tool? What are knowledge skills?

Week 6. (Oct. 1st) Hypermedia & Multimedia Research: Know Composition & Construction
         a. Q: What is the difference between hypermedia and multimedia?
         b. Class will meet online this week.???

Week 7. (Oct. 8th) Math and Science Tools: Conducting Inquiry
         a. Q: What is the inquiry process? Why is info access so important?

Week 8. (Oct. 15th) Learning Objects and Web Courseware Standards
         a. Q: What is a learning object?
         b. Q: How is developing such tools and standards and why?

Week 9. (Oct. 22nd) Student Self-Selection Week—Library Day

a. Q: What is it you want to do with your life?

Week 10. (Oct 29th) Computer Conferencing: Sync/Asynchronous—Going Bonker's Week

a. Q: Which is better: real time or delayed discussions? Why?

b. Q. What items on the CD are worthwhile?

Week 11. (Nov. 5th) Computer-Mediated Communication Frameworks and Analyses

a. Q: How can we analyze electronic discourse?

Week 12. (Nov. 12th) Learning Communities: Adventures, Global Collab, Virtual Fieldtrips

a. Q: How can we scaffold or mentor online learning?

b. Q: Are notions of communities different today from 5-10 yrs ago?

Week 13. (Nov. 19th) Distance Ed: Web Pedagogy and Instruction

a. Q: What are the some sound strategies for Web-based instruction?

Week 14. (Nov. 26th) Web Models and Research Issues (Class Demos and Comparisons)

a. Q: What are the best Web courseware tools today? Why?

Week 15. (Dec. 3rd) Future Technology Trends and Pedagogical Business Plan Presentations

a. Q: What's next? What inventions are still needed?

b. Q: Ok, did we learn anything here? What specifically?

Week 16. (Dec 10th) Pedagogical Business Plan Presentations Continued

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Class Tasks:

A. Weekly Attendance and Participation. (15%--30 points = 15 pts for attendance; 15 pts for partic)

Besides reading 3 of the 4 assigned articles each week, during the semester I want you to read 3 of the tidbits in your packet as well as additional articles for your projects. As in years past, we may discuss some of these online. In terms of class attendance, it is your responsibility to come to class and experience the unique activities that will be incorporated into each class. A combination of readings, verbal and written reactions to ideas, observing demonstration videos, and hands-on activities will be critical to your growth as a class. ***Participation is encouraged at all times.***

B. Online Mentoring and Reflection (15%--30 points)

Last time I taught this course, students provided mentoring to students in my undergraduate educational psychology class. This semester, I want you to find a class, project, student, or situation in need of mentoring; preferably someone in an educational computing class where you can use your new knowledge. You might help mentor students of someone teaching an online course. You might find a mentoring Web site and offer your services (see my TICKIT Project resources at http://www.indiana.edu/~tickit/resourcecenter/resource3.htm for many examples). You might be an electronic mentor, advisor, and teacher. As a mentor, you will assist in the learning process of someone by posing questions, instructing, offering praise and feedback, providing task advice, pushing them to explore more resources, giving personal examples and stories, prompting him/her to articulate and elaborate on their ideas, and generally encouraging reflection and dialogue (12 distinct ways to mentor can be found Table 1 of the following article that I wrote: http://usdla.org/ED_magazine/illuminactive/AUG01_Issue/article01.html). This mentoring must take place at least 10 times during the semester. When done, I want you to reflect on this experience in a 1-2 page (single spaced) report of what you learned during the experience.   In this reflection, include your advice on the design of future online mentoring tools. I would appreciate copies of the printouts of your mentoring and collaboration logs by December 3rd. Grading will be based on a six part scale: (1) Insightful and Relevant Comments; (2) Helpfulness; (3) Completeness; (4) Pushes Individual/Group; (5) Diverse Feedback; and (6) Reflective.   (Option: participate in Sitescape article discussion each week. You must be a starter one time and a wrapper one time.)

Electronic Mentoring Criteria (15%--30 Points):
1. Insightful/Relevancy: offering examples, relationships drawn, interlinkages, connecting weekly ideas.
2. Helpfulness/Responsive: prompt, encouraging, informative, numerous suggestions, advice, quick fdbk.
3. Completeness: thorough comments, detailed reflection, timely and consistent feedback.
4. Pushes Group: moves group to new heights, exploration is fostered, breadth & depth, fosters growth.
5. Diverse Feedback: many forms of learning assistance, response specific to activity and need.
6. Reflective: self-awareness and learning displayed in reflection, coherent and informative reflection.

C. Library Day (10%--20 pts) **(Note: Please do not be scared!!!)**
On "Library Day," I want you to spend a day in the library finding articles that you want and need. Some of you may fulfill this assignment by reading articles online or found in digital libraries. You will do this activity during the week of October 22nd (preferably that day!!!) and we will reflect on this activity later in the week. I want you to search for and find 20-30 or more articles or chapters on a topic (or topics) of your choice. I want you to copy at least the first page of each of these articles and bring them to class. Not only that, I want you to attempt to read them all (or at least skim them). You have no more than one day on this task. You are not to spend more than a day doing this nor less than a day (you determine what I mean by a day). This is like a scavenger hunt or like reading articles for a dissertation topic. Bring all work to class that week. Before that time, I will provide you with a form for you to jot down notes on a few of these articles. We will probably meet later in the week to discuss the articles you found. Alternatives: Ten tool exploration and sharing day!
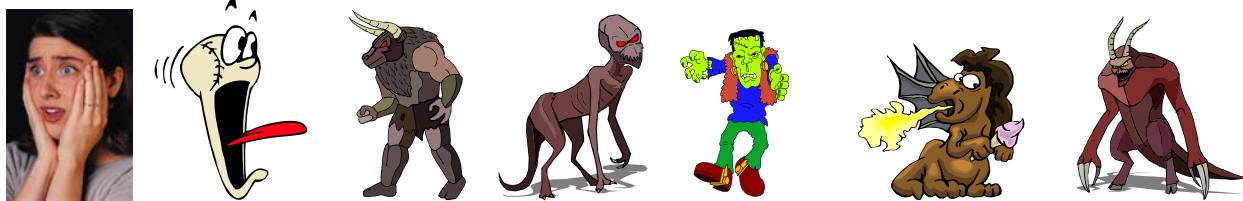
D. Definitions and Taxonomy of Cognitive and Collaborative Tools (25%--50 points)
How do these readings fit together? I want you to begin to indicate--through a visual representation (e.g., a taxonomy, timeline, concept map, model, figure, Venn diagram, matrix, comparison and contrast table, etc.)--just what you have internalized by depicting the cognitive and collaborative tools in your field of study. Maximum visual representation size is a folded 11 X 17 sheet of paper. First, lay out some important terms here (perhaps 20-30 words) and provide broad tool-related definitions. Second, link these terms into common categories that relate to particular weekly discussions or important concepts. Above these categories you might provide a listing a learner-centered psychological and design principles, while attempting to create an overarching taxonomy, model, or other visual of the tools in your field. Third, I want you to verbally describe what this visual representation of broad tool definitions, categories, and principles represents. Please summarize and interpret your visual display in a 2-3 page single-spaced paper. In effect, there are three key indicators of learning here: (1) definitional; (2) visual; and (3) verbal interpretation. *This is due Nov. 12th.* (Examples will be available.)

E. Pedagogical Business Plan Project and Presentation (35%--70 points)
This is a new task. I want you to find, develop, or propose a technology tool, courseware package,

or system and develop a pedagogical business plan. My preference is to utilize an existing tool and link its use to pedagogical and psychological principles of human learning and development that we are studying this semester. I want you to include many of the following items in your plan: information on the company, key product and service information, technology research and development efforts, market analysis (e.g., types of customers), competitor analysis (especially those with better pedagogical tools), resources required, pedagogical advantages and disadvantages as well as links to sound learning theory, future features or recommendations for development, critical risks, financial projections, management and ownership, exhibits, etc. I am slightly vague here since I have not tried this assignment before.

When done, I want you to present the tool and the business plan to the class in a 15-20 minute presentation during the final two weeks of the course. You must find at least one partner for this project; the maximum group size is 4 people. You are also encouraged to contact the company that developed the product directly and receive additional product information (e.g., CDs, brochures, white papers, technical reports, product comparison sheets, videotapes, company annual report, customer testimonies, data sheets, Web site information, etc.).

Your paper will be no longer than 11 single spaced pages (excluding references, appendices, tables of contents, key personnel resumes, pictures of your grandmother, etc.). Early in the semester, I will send everyone an electronic document of what typically is included in a business plan. This project is to be completed by either December 3rd or 10th.

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Sample Grading of PBPPP (70 Total Points or 10 pts each dimension):
1. Review of the Product and Company *(clarity, market, competitors, facts, data*, features, options)
2. Pedagogical/Psychological Linkages *(clear, related to class and theory, current, extends field)*
3. Relevant Resources and Digging (citations/refs, linkages to class concepts, data, completeness)
4. Soundness of Plan *(clear, complete, doable/practical, detailed, important, implications, future)*
5. Creativity and Richness of Ideas *(richness of information, elaboration, originality, unique)*

Presentation Points: (20 Points or 5 pts for each dimension)
1. Organization: good pace, flow, and transitions
2. Creative/Interesting: audience engaged, presenters showcase their creative ideas
3. Completeness: thorough presentation without going beyond time limits
4. Effort and Knowledge of Topic: Depth, expertise displayed, digging, work-work-work!

Weekly Reading (we will read 3-4 articles per week; T = Tidbit)
Week 1. (Aug. 27th) Introduction to Interactive Technologies for Learning and Collaboration

Week 2. (Sept. 3rd) Learner Choice: Temporary Optional Text Selection (TOTS)
>   1. Read 3-4 chapters from Lajoie, Abbey, or the Jossey-Bass Technology Reader.

Week 3. (Sept. 10th) Linking Tools to Cognitive, Learner-Centered, and Constructivist Principles
>   1. EC (1998): Preface, intro, chapters 1-5 (Chapter 2 is required)
>   T1. Soloway, Kuzdial, & Hay (1994). Learner-centered design: The challenge for 21st cent.
>   T2. Wagner & McCombs. (1995). Learner-centered psych princ in practice, for dist educ.

Week 4. (Sept. 17th) Key Issues, History, and Principles
>   1. Crook, C. (1994). Computers in ed: Some issues. In Computers and the collab exper of learning.
>   2. Goldman, S. R., & The Technology and Cognition Group at Vanderbilt (1999). Chapter 3: Technology-rich instructional environments that support learning with understanding. In: Technology for teaching and learning with understanding (A Primer). Boston, MA: Houghton

Mifflin Company.
3. Koschmann, T. D., Myers, A. C., Feltovich, P. J., & Barrows, H. S. (1994). Using technology to assist in realizing effective learning and instruction: A principled approach to the use of computers in collaborative learning. *The Journal of the Learning Sciences*, *3*(3), 227-264.
4. Salomon, G. (1998). Novel constructivist learning environments and novel technologies: Some issues to be concerned with. Research Dialogue in Learning and Instruction, 1(1), 3-12.
5. Partlow, K. M. (2001). Indicators of constructivist principles in Internet courses. Unpublished Master's thesis. Eastern Illinois University. (Permission to send students PDF file granted)
6. Collins, A. (1996). Design issues for learning environments.
   T1. Papert, S. (1996). A word for learning. In Kafai & Resnick, Constructivism in practice.
   T2. Kozma, R. B. (1987). The implications of cog psych for computer-based lrng tools.

Week 5. (Sept. 24th) Writing Tools for Idea Generation, Collaboration, and Cognition Enhancement
1. Neuwirth, C. M., & Wojahn, P. G. (1996). Learning to write: Computer support for a cooperative process. In T. Koschmann (Ed.), CSCL: Theory and practice of an emerging paradigm (pp. 147-170). Mahwah, NJ: Erlbaum.
2. Bransford, J. D., et al. (1996). Most environments for accelerating literacy development. In Vosniadou, S., De Corte, E., Glaser, R., & Mandl, H. (Eds.), International perspectives on the design of technology-supported learning environments (pp. 223-255). Mahwah, NJ: Erlbaum.
3. Reynolds & Bonk (1996). (ETR&D) Creating computerized writing partner and keystroke mapping tools. (see CD)
4. Salomon, G. (1993). On the nature of pedag computer tools: The case of the Writing partner
5. Slatin, J. M. (1992). Is there a class in this text: Creating know in an elect classroom
6. Scardamalia, M., & Bereiter, C. (1994). Computer support for knowledge-building communities. *The Journal of the Learning Sciences*, *3*(3), 265-283.
   T1. McCollum, K. (1999, May). An on-line format for scholarly papers lets critics aim their barbs more precisely, The Chronicle of Higher Education.
   T2. Smith (1996). Thomas Jefferson's computer.
   T3. Schrage (1990). Shared Minds. Ch 8: Collaborative tools: A first look
   T4. Gray (1999, January). Collaboration Tools. Syllabus, pp. 48-52.

Week 6. (Oct. 1st) Hypermedia and Multimedia Research: Knowledge Composition and Construction (Note: Class will meet online to discuss these articles)
1. EC: Chapter 11.
2. Dillon, A., & Gabbard, R. (1998). Hypermedia as an educational technology: A review of the quantitative research literature on learner comprehension, control, and style. Review of Educational Research, 68(3), 322-349.
3. Rouet, J. F., & Passerault, J. M. (1999). Analyzing learner-hypermedia interaction: An overview of online methods. Instructional Science, 27, 201-219.
4. Harper, B., Squires, D., & Mcdougall, A. (2000). Constructivist simulations: A new design paradigm. *Journal of Educational Multimedia and Hypermedia*, *9*(2), 115-130. (or Harper, B., Hedberg, J. G., & Wright, R. (2001). Designing interactive learning environments: Models to incorporate contemporary views of learning. University of Wollongong.)
5. Lehrer, R. (1993). Authors of knowledge: Patterns of hypermedia design
6. Landow, G. (1993). Bootstrapping hypertext: Student-created docs, Intermedia, & the social construction of knowledge.
   T1. Secules, T. et al. (1997) Creating Schools for Thought, Ed Leadership, 54(6), 56-60.
   T2. Herrington, J., & Standen, P. (2000). Moving from an instructivist to a constructivist learning environment. *Journal of Educational Multimedia and Hypermedia*, *9*(3), 195-205.

Week 7. (Oct. 8th) Science and Math Tools: Conducting Inquiry
1. Rochelle, J. (1996). Learning by collaborating: Convergent conceptual change. Learning to write: Computer support for a cooperative process. In T. Koschmann (Ed.), CSCL: Theory and practice

of an emerging paradigm (pp. 209-248). Mahwah, NJ: Erlbaum.
2. Gomez, L. M., Fishman, B. J., & Pea, R. D. (1998). The CoVis Project: Building a large-scale science education testbed. *Interactive Learning Environments*, *6*(1-2), 59-92.
3. Linn, M. C., Bell, & His, S. (1998). Using the Internet to enhance student understanding of science: The Knowledge Integration Environment. *Interactive Learning Environments*, *6*(1-2), 4-38.
4. Edelson, Pea, & Gomez. (1996). Constructivism in the collaboratory.
5. Songer, N. (1998). Can technology bring students closer to science? IN K. Tobin & B. Fraser (Eds.). The international handbook of science education. The Netherlands: Kluwer.
6. Stratford, S. J. (1997). A review of computer-based model research in precollege science classrooms. Journal of Computers in Mathematics and Science Teaching. 16(1), 3-23.
    T1. The Cognitions and Technology Group at Vanderbilt, (1993). The Jasper Experiment, the Arithmetic Teacher, 40(8), 474-478.
    T2. Rubin, A. (1993). Video laboratories: Tools for scientific investigation.
    T3. Grant, W. C. (1993). Wireless coyote: A computer-supported field trip.
    T4. Niess, M. L. (1996-97). Lines and angles: Using Geometer's Sketchpad to construct geometric knowledge. Learning and Leading with Technology, 24(4), 27-31.

Week 8. (Oct. 15th) Learning Objects and Web Courseware Standards
1. Wiley, D. A. (Ed.). (2001). *The Instructional Use of Learning Objects*. Bloomington, IN: Association for Educational Communications and Technology. http://reusability.org/read/
2. Steve Schatz (2000), Meta tagging knowledge bits: An introduction and model for creating unique schemas. Unpublished manuscript. (see http://www.performanceportalportal.com/Tags.pdf) and or Steve Schatz (2001, August). Learning Objects Phase Two: Integration into Performance Support Portals. http://www.performanceportalportal.com/Article.pdf. (The main page is at: http://www.performanceportalportal.com/)
3. Cisco Systems. (2000). *Reusable Learning Object Strategy: Definition, Creation Process, and Guidelines for Building*: Cisco Systems, Inc. http://www.cisco.com/warp/public/779/ibs/solutions/learning/whitepapers/ and http://www.cisco.com/warp/public/10/wwtraining/elearning/learn/whitepaper.html
4. Twigg, C. A. (2000). *Who owns online courses and course materials? Intellectual property policies for a new learning environments*. The Pew Learning and Technology Program. Troy, NY: Center for Academic Transformation Rensselaer Polytechnic Institute. (http://www.center.rpi.edu/PewSym/mono2.html).
5. Fletcher and Dodds, All about ADL, http://www.learningcircuits.com/may2000/fletcher.html
6. Steven Gnagni, Building Blocks: How the standards movement plans to revolutionize electronic learning. University Business. http://www.universitybusiness.com/0101/cover_building.html
7. Windman, R. (2001). Lessons Learned, SCORM product development, http://www.zdnet.com/eweek/stories/general/0,11011,2717915,00.html
8. Tom Barron, (2000, March). Learning Object Pioneers. Learning Circuits, ASTD. http://www.learningcircuits.com/mar2000/barron.html
9. Warren Longmire (2000, March) A Primer on Learning Objects, Learning Circuits, ASTD, http://www.learningcircuits.com/mar2000/primer.html (Note: This article is excerpted from Informania's *Learning Without Limits, Volume 3*, which is available for downloading at www.informania.com)
10. Hodgins, W., & Conner, M. (2000, Fall). Everything you ever wanted to know about learning standards but were afraid to ask. Learning in the New Economy (LiNE Zine). http://www.linezine.com/2.1/features/wheyewtkls.htm
        T1. Carnegie Foundation The Knowledge Media Center, Scholarship of Teaching, http://www.carnegiefoundation.org/KML/index.htm and http://kml2.carnegiefoundation.org/gallery/index.html and http://kml2.carnegiefoundation.org/gallery/general/ (for KML Gallery)\

T2. Sharing, Murray Goldberg, WebCT, Online Teaching and Learning Newsletter, http://www.webct.com/services/viewcontentframe?contentID=1398095

T3. MIT's Open Knowledge Initiative: http://web.mit.edu/oki/

T4. IMS Global Learning Consortium, http://www.imsglobal.org/ and meta-data specifications http://www.imsglobal.org/metadata/index.html

T5. MERLOT.org, CourseShare.com, UniversalClass.com, The World Lecture Hall (http://wnt.cc.utexas.edu/~ccdv543/wlh/index1.html)

T6. Army's Advanced Distributed Learning Initiative *Sharable Content Object Reference Model* (SCORM). http://www.adlnet.org/; see also ADL-Colab: http://www.wiadlcolab.org/ (download SCORM 1.1)

T7. Judy Brown and Ed Meachen (2000), Unlocking the potential of ADL through standards: Where does the UW system fit in? Teaching with Technology Today Newsletter, 5(8), May 17, 2000. http://www.uwsa.edu/olit/ttt/jbrown.htm

Week 9. (Oct. 22nd) Student Self-Selection Week—Library Day
1. Find 20-30 articles on a theme or topic and review them briefly.

Week 10. (Oct. 29th) Computer Conferencing: Synchronous & Asynchronous—Going Bonker's Week
1. EC (1998): Chapters 7, 12, 13
2. Bonk on CD (pick any)
3. Bonk, C. J., Angeli, C., Malikowski, S., & Supplee (2001, August). *Holy COW: Scaffolding case-based "Conferencing on the Web" with preservice teachers. Education at a Distance, United States. Distance Learning Association.* [for an electronic copy of the article, see http://www.usdla.org/ED_magazine/illuminactive/AUG01_Issue/article01.html].
4. Hara, N., Bonk, C. J., & Angeli, C., (in press for 1999). Content analyses of on-line discussion in an applied educational psychology course. *Instructional Science*. (Can also be found in a preprint Tech Report from the Center for Research on Learning and Instruction: http://www.crlt.indiana.edu/)

Week 11. (Nov. 5th) Computer Mediated Communication Frameworks and Analyses
1. EC (1998): Chapter 8, 9, or 10 (pick 1 perhaps)
2. Kuehn (1994). Computer-mediated communication in instructional settings: A research agenda.
3. Henri, F. (1992). Computer conferencing and content analysis.
4. Levin, Kim, & Riel (1990). Analyzing instructional interactions on electronic message networks.
5. Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, *23*(1), 3-43.
6. Riel & Harasim (1994). Research perspectives on network learning.
7. Kanuka, H., & Anderson, T. (1998). On-line social interchange, discord, and knowledge construction. *Journal of Distance Education*, *13*(1), 57-74.

Week 12. (Nov. 12th) Learning Communities: Adventures, Global Collab, Virtual Fieldtrips
1. EC (1998): Chapter 6, Sugar & Bonk; Chapter 14, Siegel & Kirkley
2. Barab, S. A., & Duffy, T. M. (1998). From Practice Fields to Communities of Practice. Chapter in D. Jonassen & S. Land (Eds.), *Theoretical Foundations of Learning Environments* Lawrence Erlbaum Associates, Inc. (See publications within the Center for Research on Learning and Technology, http://www.crlt.indiana.edu/)
3. Riel, M. (1996). Cross-classroom collaboration: Communication and education. In T. Koschmann (Ed.), CSCL: Theory and practice of an emerging paradigm (pp. 187-207). Mahwah, NJ: Erlbaum.
4. Schlager, M., & Schank, P. K. (1997). TAPPED IN: A new on-line teacher community concept for the next generation of Internet technology. Paper presented at the International conference on Computer Support for Collaborative Learning, Toronto, Canada. (Also included are articles:

"What is TAPPED IN?" and "Welcome to the TAPPED IN self-guided Web tour.")
5. Levin, J., & Waugh, M. (1998). Teaching teleapprenticeships: Electronic network-based educational frameworks for improving teacher education. *Interactive Learning Environments*, *6*(1-2), 39-58.
6. Weedman, J. (1999). Conversation and community: The potential of electronic conferences for creating intellectual proximity in distributed learning environments. *Journal of the American Society for Information Science*, *50*(10), 907-928.
    T1. Edutopia. (1994). Newsletter of the George Lucas Educational Foundation.
    T2. Steger, W. (1996). Dispatches from the Arctic Ocean. National Geographic.
    T3. Stuckey, B. Hedberg, J., & Lockyer, L. (2001). The case for community: On-line and ongoing professional support for communities of practice. University of Wollongong.

Week 13. (Nov. 19th) Distance Education: Web Pedagogy and Instruction
1. Harasim, Hiltz, Teles, & Turoff (1995). Designs for learning networks (Chap 4 & Appendix A)
2. Most items on Bonk CD: (a) Bonk & Reynolds (1997); (b) Bonk, C. J., & Dennen, V. (1999); (c) Bonk, C. J., & Cummings, J. A. (1998); (d) Bonk, C. J., Kirkley, J. R., Hara, N., & Dennen, N. (2001); (e) Bonk, Fischler, R. B., & Graham, C. R. (2000); (f) Bonk, C. J., & Dennen, N. (in press).
3. Oliver, R., & McLoughlin, C. (1999). Curriculum and learning resources issues arising from the use of Web-based course support systems. *International Journal of Educational Telecommunications*, *5*(4), 419-435.
4. Paulsen, M. F. (1995). The online report on pedagogical techniques for computer-mediated communication. http://emoderators.com/moderators/cmcped.html; also see Teaching methods and techniques for computer mediated communication http://www.nettskolen.com/forskning/22/icdepenn.htm (homepage: http://home.nettskolen.nki.no/%7Emorten/innled.html).
5. Berge, Z. (1996). The role of the online facilitator/instructor. *Educational Technology*, *35*(1), 22-30. (See: http://emoderators.com/moderators/teach_online.html) Or anything else at his e-Moderators Homepage (http://emoderators.com/moderators.shtml)

Week 14. (Nov. 26th) Web Models and Research Issues (also Class Demos and Comparisons)
1. Owston, R. D. (1997). The World Wide Web: A technology to enhance teaching and learning.
2. Mason, R. (1998). Models of online learning. ALN Magazine, 2(2).
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Week 15. (Dec. 3rd) Future Technology Trends and Recap
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6.   Dede, C. (1996). The evolution of distance education: Emerging technologies and distributed learning. The American Journal of Distance Education. 10(2), 4-36.

     T1. Mehlinger, H. (1996). School reform in the information age.

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Week 16. (Dec. 10th) Pedagogical Business Plan Project Presentations Continued

1.   Business Planning Guide; 38 pages (to be sent)

Syllabus Appendix: Eight Options to PBPPP

There are eight options to the pedagogical business plan. If you select one of these options, you have a chance to experiment with or observe the uses of technology tools in schools, corporations, and nontraditional learning environments, propose a totally unique software tool, or educate your classmates. These options include the following: (1) Naturalistic Study; (2) Research Intervention; (3) Research/Grant Proposal; (4) Tool Design Proposal; (5) Curriculum Integration Proposal; (6) Research Presentation; (7) Educational Tool Demonstration; (8) Usable Class Product. These can be completed with a peer. CAUTION: For option #1 or #2, you may need human subject's approval before proceeding. Like the Business Plan, these are to be 11 single spaced pages max, exclusive of references and appendices.

Summary of Eight Major Project Options:
1. Naturalistic Study: You might perform a case study or pilot observation of workers/students using collaborative tools or collaborative tool interaction in a school, workplace, or informal learning setting. For instance, you might decide to complete a case study of a young person or adult using a collaboration tool or interactive learning tool for the first time (including the Web). In your study, you should include at least five careful observations and commentary of the person and tutor/teacher. The commentary should reflect your learning and provide insights as to how to make this tool more educationally meaningful. If you are looking at student-teacher-tool interaction patterns, teacher guidance, or simply tool use, you will need to design coding schemes and observation log sheets to help interpret tool functionality in this environment *(see below for details)*.

2. Research Intervention: In Option #2, you might want to try to use and analyze a specific task, tool, or theory. Based on your interests and existing theory, you should form specific research questions before your intervention. Though your study can take many forms, the research report you submit should detail the purpose and framework of the intervention (i.e., why was this particular project chosen), include a literature review, method section, a description of what occurred (were you successful?), explanation of the results, and possibilities for extending this study *(see details below)*.

3. Research/Grant Proposal: Option #3 can be either a grant or research proposal. In this option, students must write a paper on a possible study of the use of new collaboration or learning technologies which: (1) extends/modifies the research, <u>or</u> (2) suggests a totally unique but reasonable research project/study. It may be either a quantitative intervention <u>or</u> qualitative study. It should include a(n): introduction, brief review of the important literature, methods section (e.g., hypotheses, subjects, materials/resources, variables, procedure, instruments, and anticipated analyses), and discussion of expected results (including the meaning and relationship to the field). Your proposal can be within any aspect of technology tools for impacting learning and thinking. You may target any age group or population level.

4. Tool Design Proposal: Choose Option #4 if you would you like to design a unique collaborative educational learning tool or at least propose the design of a unique educational tool, instructional design model, or unique curriculum application of an existing tool. Instructional design does not need to include any programming. However, it must clearly indicate: (a) the purpose (e.g., the skills addressed); (b) how it might be implemented; (c) the advantages of using this tool, theory, or application to accomplish your educational goals; (d) possible grant sources for programming or design; (e) a mock-up sample of design documents; and (f) description of applicable learner centered design principles.

5. Curriculum Integration Proposal: Here you might contemplate the curriculum impact of one or more learning tools. How are you going to use it? What would change? What training would there

be needed for successful use? How might faculty, students, administrators, and parents react to all this? Include a description of tool, how it could or should be used in traditional or nontraditional learning, and what you believe to be its strengths and weaknesses.

6. Research Presentation: Again, in the spirit of an interactive seminar, the purpose of this option is to allow for student input and also provide practice in presenting information in the style required for conferences. Here, you are to orally present a research proposal or synthesize aspects of the research or readings for the class wherein you point out a new direction that researchers or teachers might want to head. Presenters should meet with me prior to the presentation in order to discuss the topic and proposed organization of the presentation. Given time constraints, the presentation length will be no longer than 20 minutes *(see below for details)*.

7. Educational Tool Demonstration: You might want to demonstrate a learning or collaboration software tool that is promoted for an educational setting such as a library, corporate training center, computer lab, museum, zoo, classroom, or learning center.   See the instructor about the possibilities of demonstrating a particularly interesting tool you have found.

8. Usable Class Product: Students choosing Option #8 will create or perform a meaningful activity for the class. For example, you might summarize the learning principles embedded in all the articles we read this semester, locate the 10-20 most popular collaborative educational learning tools for public schools, uniquely categorize the tools studied, summarize the weekly articles read, conduct a survey on faculty Web usage, create a software evaluation form and matrix, set up our class for an online conference, create a class Web site, or create a database summarize major themes and trends in a technology or psychology journal for a 3-5 year period. Your final report, however, will be your own design as there is no preconceived format.

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Sample Grading of Project Options (70 Total Points or 10 pts each dimension):
1. Review of the Problem/Lit/Purpose *(interesting, relevant, current, organized, thorough, grounded)*
2. Hypothesis/Research Q's/Intentions *(clear, related to class and theory, current, extend field)*
3. Method/Procedures *(subjects/age groups approp, materials relevant, timeline sufficient, controls)*
4. Research Activity/Design/Topic/Tool *(clear, doable/practical, detailed, impt, implications, future)*
5. Overall Richness of Ideas *(richness of information, elaboration, originality, unique)*
6. Overall Coherence *(unity, organization, logical sequence, synthesis, style, accurate)*
7. Overall Completeness *(adequate info presented, explicit, relevant, precise, valid pts)*

Some Sample Final Project Formats

Sample Format Option #1 or 2. Naturalistic/Research Activities: (11 pages, single spaced)
I. Title Page (Name, affiliation, topic title, acknowledgements)
II. Topic Literature and Method (7-14 pages)
    1. Res topic & materials;
    2. Brief stmt of problem and why impt (1-2 pages)
    3. Brief review of the relevant literature (3-4 pages)
    4. Methods: (2-6 pages)
        a. Subjects & design (i.e., who/how selected);
        b. Materials/setting (i.e., hard/software, text)
        c. Procedure (i.e., how data was obtained)
        d. Coding Schemes & Dep. meas/instr (i.e., how segment/code data);
        e. Analyses or comparisons
III. Results and Discussion 1. Preliminary Results; 2. Discussion of results (4-8 pages)
IV. References (APA style: see syllabus for example)
V. Appendices (e.g., pictures, charts, figures, models, tests, scoring criteria, coding procedures)

Sample Format for Options #3 -4. Inquiry or Tool Design Grant Proposal: (11 pages max)
I. Title Page (Name, affiliation, topic title, acknowledgements)
II. Review of the Literature (6-12 pages)
    1. Intro to Tool or Problem (purpose, history, importance) (1 page)
    2. Review of Relevant Lit (contrast related tools & relevant literature on topic) (6-9 pages)
    3. Stmt of Design Questions or Hypoth (what do you expect to occur) (1 page)
III. Method Section (3-7 pages)
    1. Tool Design (i.e., common features) or Subjects (i.e., sample, who/how assigned to grps)
    2. Tool Config (i.e., requirements) or Setting (i.e., hardware, software, text, models, figures)
    3. Tool Options (e.g., windows, linkage features) or Dependent measures/instruments/tests
    4. Tool Development Process (i.e., timeline) or Procedure (i.e., training);
    5. Other (e.g., related tools) or Other (e.g., coding, other materials);
    6. Pilot Tests, Anticipated Analyses or Comparisons
IV. Results and Discussion (OPTIONAL) 1. Antic/dummied results; 2. Disc. of results
V. References (APA style: see syllabus for example)
VI. Appendices (e.g., pictures, charts, figures, models, tests, scoring criteria, coding procedures)

Sample Format for Option #6. Research Presentation (15-20 minutes)
I. Title of Topic
II. Purpose or Rationale for Study or Product
    1. Current dilemma in field, confusion, or need
III. Review of Existing Literature
    1. Intro to Topic/Problem (purpose, history, importance)
    2. Review of Lit (contrast relevant literature on the topic)
    3. Stmt of Hypoth/Res Q's (what do you expect to occur)
IV. Method Section
    1. Subjects and design (i.e., sample, who and how assigned to groups)
    2. Materials/setting (i.e., hardware, software, text, models, figures)
    3. Dependent measures/instruments (i.e., tests)
    4. Procedure (i.e., training);
    5. Other (i.e., coding, other materials);
    6. Exp analyses or comparisons
IV. Results and Discussion (OPTIONAL) 1. Antic/dummied results; 2. Disc. of results
V. Visuals (e.g., pictures, charts, figures, models, tests, scoring criteria, coding procedures).