Blended Learning Review of Research:
An Annotative Bibliography

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Ausburn, L.J. (2004). Course design elements most valued by adult learners in blended online education environments: An American perspective. *Educational Media International, 41*(4), 327-337.
The objective of this study was to identify course design elements most valued by adult learners in blended learning environments. These rankings were then compared to other sub-groups based on gender, pre-course technology, self-direction skills and experiences and preferred learning strategies. Findings indicate that adults value course designs containing options, personalization, self-direction, variety, and a learning community. Results also identify differences in learning emphasis by gender, preferred learning strategies, and previous experience with technology and self-directed learning.

Aycock, A., Garnham, C., & Kaleta, R. (2002, March). Lessons learned from the hybrid course project. *Teaching with Technology Today, 8(6).*
This article reports on the most significant observations from the Hybrid Course Project at the University of Wisconsin, providing "lessons learned" about hybrid design and teaching for faculty interested in developing their own hybrid courses, faculty developers interested in helping instructors create hybrid courses, and academic administrators interested in supporting hybrid courses.

Bieber, M., Engelbart, D., Furuta, R., Hiltz, S.R., Noll, J., Preece, J., Stohr, E., Turoff, M., Van de Walle, B. (2002). Toward virtual community knowledge evolution. *Journal of Management Information Systems, 18*(4), 11-35.
The research paper establishes the technology and tools needed for a virtual knowledge community. The authors term this concept a collaborative knowledge evolution support systems. The environment described is similar to community of practice or social software. The differentiation is the authors support asynchronous tools over others technologies because asynchronous tools support knowledge construction better than synchronous tools.

Bonk, C. & Graham, C. (2005). Handbook of blended learning: Global perspectives, local designs. San Francisco, CA: Pfeiffer Publishing.
This comprehensive edited volume includes up-to-date examples of blended learning from US higher education, corporations, military and international examples. The book contains definitions and explanations and provides a thorough review of principles and practices in blended learning.

Boyle, T., Bradley, C., Chalk, P., Jones, R., & Pickard, P. (2003, October). Using blended learning to improve student success rates in learning to program. *Journal of Educational Media, 28*(2-3), 165-178.
The aim of this project was to improve student success rates in learning to program. The project team introduced a number of changes in module organization, tutorial support and online resources. The blend represents a mixture of traditional and novel elements, with the novel elements more marked in the online developments. Results demonstrated marked improvements in pass rates. Evaluation of the students' use of the new environment indicated a generally

positive evaluation of the main elements of the blend and widespread use of the new online features.

Bransford, J.D., Brown, A.L., & Cocking, R.R. (2000). *How people learn: brain, mind, experience and school***. National Research Council. Washington, D.C.: National Academy Press.**
A quintessential book shares knowledge on how to best approach learning. The authors discuss findings from cognitive science and how these differences are manifested in novices and experts. By integrating this knowledge and combining powerful technology, the authors argue learning could be improved. Technologies include online and other computer-based learning. The book has spawned many models and frameworks for online and blended learning.

Cameron, B. (2003). The effectiveness of simulation in a hybrid and online networking course. *TechTrends, 47***(5), 18-21.**
This research compared students' performance on simulation-based courses and static graphic representational teaching of the same courses content in an online learning environment. Results indicate that interactive learning tools, such as simulation, have the potential to increase student motivation and learning in an online environment.

Carroll, B. (2003). Going hybrid: Online course components increase flexibility of on-campus courses. *Online Classroom***, p. 4, 7.**
This article reports on a professor's initiative to supplement face-to-face courses with online instruction, while maintaining accreditation and high standards. Outcomes of this program evidence equal learning outcomes to those students who have finished the program without the online components.

Christensen, T.K. (2003). Finding the balance: Constructivist pedagogy in a blended course. *Quarterly Review of Distance Education, 4(3)***, 235-243.**
The author shares the process she chose to design a blended learning course in introductory instructional design. The process included evaluating purposes of course, audiences and learning objectives. Two different pilots of the course were undertaken and statistics regarding the outcomes and comparison to the same face-to-face course are included. Personal reflection, faculty choices and recommendations for future research are included.

Cottrell, D.M. & Robinson, R.A. (2003). Blended learning in an accounting course. *The Quarterly Review of Distance Education, 4***(3), 261-269.**
This authors of this research were interested in the possibility of using blended approaches to reduce faculty time, re-focus student time and using blended learning as a way to admit more students to a given academic program. Students reported preferring the blended learning approach and classroom time was reduced.

Cox, G., Carr, T., & Hall, M. (2004). Evaluating the use of synchronous communication in two blended courses. *Journal of Computer Assisted Learning, 20*, 183-193.
This article evaluates the educational effectiveness of online chats, considering the roles of course design, group dynamics and facilitation style. Results found that these three factors strongly influenced the successful use of this medium and student participation.

Dowling, C., Godfrey, J.M., & Gyles, N. (2003, December). Do hybrid flexible delivery teaching methods improve accounting students' learning outcomes? *Accounting Education, 12*(4), 373-391.
This study investigated the association between the learning outcomes of students and two teaching modules: traditional face-to-face and hybrid flexible delivery. Results indicated that the hybrid flexible delivery model is more positively associated with students' final marks and improved learning outcomes.

Duffy, T. M. & Kirkley, J. (2004). Learner-centered theory and practice in distance education: Cases for higher education. Mahwah, NJ: Lawrence Erblaum Associates.
This edited volume offers readers insights from higher education cases studies and analysis of those case studies which integrate learning sciences. These two chapters are followed by further discussion of how learning sciences could enhance distance education. The book is broken into five sections: community building, problem-centered learning, innovative uses of technology, scaling up and alternative views.

Dziuban, C.D., Moskal, P.D., Hartman, J. (2005). Higher education, blended learning, and the generations: Knowledge is power: No more. In J. Bourne & J.C. Moore (Eds.), *Elements of Quality Online Education: Engaging Communities*. Needham: MA: Sloan Center for Online Education.
This paper discusses blended learning environments from various perspectives. The effect of generational markers on learner's satisfaction with blended learning is explored. Generations include Matures, Baby Boomers, Generation X, and Millennials. Analysis identified learning engagement and interaction value as the two dimensions of satisfaction. Results indicated that Millennials respond least positively to their blended learning experience. This paper also includes research on the reason blended learning is successful, different course formats, and increasing interaction.

Dziuban, C.D., Hartman, J., Juge, F., Moskal, P.D., & Sorg, S. (2005). Blended learning: Online learning enters the mainstream. In C.J. Bonk & C. Graham (Eds.), *Handbook of Blended Learning Environment*. Pfeiffer Publications.
Over the past decade, the number of colleges engaged in Web-based instruction is steadily increasing. This paper explores different types of blended learning courses and their effect on student learning. Research is presented on some of the demographics and outcomes for blended learning. Learning effectiveness and

student satisfaction is also discussed. Lastly, blended learning is presented as a transformative construct in higher education.

Dziuban, C., Hartman, J., Moskal, P., Sorg, S., & Truman, B. (2004). Three ALN modalities: An institutional perspective. In J. Bourne & J.C. Moore (Eds.), *Elements of Quality Online Education: Into the Mainstream* (pp. 127-148). Needham, MA: Sloan Center for Online Education.
Researchers discuss the three modalities of distributed learning at UCF: Web-Enhanced (E), mixed-mode (M) and fully Web-based (W). The variables impacting the development of this multifaceted ALN initiative and the ultimate transformation of the university are discussed. Findings indicate significant growth accompanied by high faculty and student satisfaction.

Dziuban, C., Hartman, J., & Moskal, P. (2004, March 30). Blended learning. *ECAR Research Bulletin.* Available online at http://www.educause.edu/ecar/
This research describes the benefits of combined face-to-face instruction and online learning, including the potential to increase learning outcomes, lowering attrition rates, and high satisfaction among the majority of faculty and students.

Frazee, R.V. (2003). Using relevance to facilitate online participation in a hybrid course. *Educause Quarterly,* No. 4, 67-69.
This article explored whether the relevance-enhancing strategy of modifying the title of online discussion prompts to make an explicit connection to a particular course assignment increases student participation and satisfaction with online discussions. Students in both the control and treatment groups found the online discussions somewhat relevant and somewhat satisfying, with declining participation over time. There was no significant difference between the control and treatment groups in terms of perceived relevance, satisfaction, self-efficacy, or participation in the online discussions.

Garrison, D. R., & Anderson, T. (2003). *E–Learning in the 21st century: A framework for research and practice.* London: Routledge/Falmer.
The authors are recognized as pioneers in distance learning. The authors share the view that discourse is especially valuable in education and that asynchronous discussion is a very powerful learning strategy. The book shares the conceptual framework for community of inquiry. The community of inquiry is an educational model which encompasses teaching presence, social presence and cognitive presence. The second part of the book shares best practices for designing these learning experiences.

Garrison, D.R & Kanuta, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education. 7(2)***, 95-105.**
The research paper offers a framework which explores how integrating online learning into traditional college classrooms could be transformative for universities. Blended learning represents an opportunity to support deep learning. The authors build on earlier work using community of inquiry model to support why institutions should invest in transforming learning. The paper outlines what colleges and universities need to do to move forward blended learning.

Graff, M. (2003, October). Individual differences in sense of classroom community in a blended learning environment. *Journal of Educational Media, 28*(2-3)**, 203-210.**
The objective of this study was to investigate cognitive style differences (as measured by the Cognitive Styles Index) and gender differences in sense of classroom community in a blended learning environment. Results indicated that students with intuitive cognitive styles report a lower sense of community than students with an intermediate or analytic style. Few differences were found with respect to gender and sense of community in a blended learning environment.

Graham, C. R. (2005). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.). *Handbook of blended learning: Global perspectives, local designs.* **San Francisco, CA: Pfeiffer Publishing.**
In this chapter of the book, the author shares many different definitions of blended learning. The definitions are useful to those who would like to understand the larger field. The author discusses several ways which even the current definitions may be expanded through better technologies.

Hiltz, S.R. & Goldman, R. (2005). Learning Together Online: Research on Asynchronous Learning Networks. Mahwah, NJ: Lawrence Erlbaum Associates.
One of the most comprehensive edited volumes which present not on the history of asynchronous learning networks but also the future issues. The authors consist of renowned authors and researchers who together present 12 very thorough chapters on ALN. The research cited includes references to blended learning courses as well as fully online courses.

Hopper, K. (2003). Reasons to go hybrid. *Distance Education Report, 7*(24), 7.
This article was an interview with Keith Hopper, who investigated the characteristics of exemplary online courses. He found that the best courses feature abundant and timely feedback, judicious use of technology, and learning by doing. He also found that the best online courses demonstrate attributes

recognized in effective classroom teaching. Hopper feels that internet-supported or hybrid courses are an improvement over fully online courses.

Humbert, J. & Vignare, K. (2005). RIT introduces blended learning—successfully!. In J. C. Moore (ed.), *Elements of Quality Online Education: Engaging Communities, Wisdom from the Sloan Consortium, Volume 2 in the Wisdom Series***. Needham, MA: Sloan-C.**
The case study research shares the results of the first year of pilot to introduce blended learning to the Rochester Institute of Technology. The results are positive. Students seem to like blended learning and believe faculty are offering more instructional strategies and resources using blended learning. Students also view positively the increased and improved student to student communication. Additional information is shared on the faculty training and course completion rates.

Johnson, J. (2002, March). Reflections on teaching a large enrollment course using a hybrid format. *Teaching with Technology Today, 8***(6).** The article describes the author's experience teaching a large enrollment course using a hybrid format. The author had several concerns with his traditional large-enrollment lectures, including limited accessibility to course content, limited effectiveness of instruction, and low levels of connectivity between instructor and students. Given these concerns, the author decided to experiment with holding the course in a hybrid format. He found that planning and developing a large-enrollment hybrid course takes two to three times the amount of time a traditional large-enrollment class would take, with many activities being completed before the beginning of the semester. The author also found that implementing and maintaining a hybrid course takes more time than a traditional course. The author concluded that accessibility to course content and connectivity with students increased in the hybrid format, while no differences were found in terms of effectiveness of instruction

Kerres, Michael & De Witt, Claudia (2003). A didactical framework for the design of blended learning arrangements. *Journal of Educational Media. 28 (2-3)*, 101-113.
The authors explore a didactical framework which includes three components: content, communication and constructive. The 3C model can be applied to any learning environment but in blended learning it is critical to design how much time should be spent on each component. The role of various learning theories and media theories and uses are explored as background for approaching didactical design. The blend should consider the learning goals, the situational issues, target group and institutional issues to create an optimal blended learning environment.

King, K. (2002). Identifying success in online teacher education and professional development. *Internet and Higher Education, 5, 231-246.*

This case study research explores the dynamics and experience offered for a professor and learners participating in a hybrid-modeled classroom in teacher education. The author found that hybrid online class discussions had the potential of prompting critical thinking, dynamic interactive dialogue, and substantial peer-to-peer interaction. The depth of insight found in participants' responses was higher than is often possible in a face-to-face classroom due to time constraints. Students benefited from less driving time, and technology usually did not distract from learning. The hybrid model also allowed for more creative and interactive course assignments. One key limitation of the hybrid model is that it is affected by computer worms, power failures, and other technology problems.

King, P., & Hildreth, D. (2001). Internet courses: Are they worth the effort? *Journal of College Science Teaching, 31*, **112-115.**
This article investigated the effectiveness of a freshman-level Internet-based biology course. The authors compared student performance and attitudes from an Internet-based biology course to that of a traditional biology course. There were no significant differences between students' test scores in the Internet-based and traditional courses. The authors concluded that the Internet-based course was worthwhile, one-on-one contact between the instructor and students was higher in the Internet-based course, and that the Internet-based course provided multiple sources of information for students.

Leh, S.C. (2002). Action research on hybrid courses and their online communities. *Education Media International, 39*(1), **31-37.**
This article reports on action research on hybrid courses conducted from 1999 to 2001. The goal of the research was to investigate students' opinions toward hybrid courses and to examine the impact of using different strategies on online communities. Results indicated that students and the instructor were in favor of hybrid courses. Students felt they learned as much or more than they did in traditional courses, were more motivated, and preferred hybrid courses over traditional ones. The author found that students felt a greater sense of belonging in those courses that used synchronous communication, although they enjoyed the flexibility of asynchronous communication. The author also concluded that using participation credits was an effective way to motivate students to participate in online communities.

Lohr, L. L. & Ku, H. (2003). Development of a web-based template for active learning. *The Quarterly Review of Distance Education. 4(3)*, **213-226**.
The authors discuss and evaluate various web templates used for online courses. A group of designers were assigned to create active learning templates. The two templates were designed around a newspaper and theater format. After testing and revising, a group of students were randomly assigned to test usability of the templates. The results suggest that design elements do matter.

Lynch, R., & Dembo, M. (2004, August). The relationship between self-regulation and online learning in a blended learning context. *International Review of Research in Open and Distance Learning, 5***(2). Retrieved March 17, 2005 from http://www.irrodl.org/content/v5.2/lynch-dembo.html**
This study aimed to identify learner self-regulation skills predictive of academic success in a blended education context. Analysis of results revealed that verbal ability and self-efficacy related significantly to performance and final course grades.

MacDonald, J., & McAteer, E. (2003, October). New approaches to supporting students: strategies for blended learning in distance and campus based environments. *Journal of Educational Media, 28***(2-3), 129-146.**
This study investigates generic tutoring strategies and describes factors influencing the use of media in blended learning environments. Results established that many of the principles underlying effective strategies apply in both distance and campus-based universities.

Martyn, M. (2003). The Hybrid Online Model: Good Practice. *Educause Quarterly, 1,* **18-23.**
This article discusses how the hybrid model provides an excellent way for institutions to enter the online arena and still ensure quality courses, and illustrates how the components of good practice can be incorporated to create an effective student-centered learning environment.

Mayadas, F. (2001). Testimony to the Kerrey Commission on web-based education. *Journal of Asynchronous Learning Networks, 5(1)***, 134-138.**
Mayadas as the program director for the Sloan foundation has directed millions of dollars into asynchronous learning networks. Mayadas shares with Congress reasons why ALN works and should be considered a viable alternative to traditional education.

McCray, G.E. (2000). The hybrid course: Merging on-line instruction and the traditional classroom. *Information Technology and Management 1***, 307-327.**
This research reports the utility of online learning environments in traditional classes both as an efficient means for executing activities previously tethered to the classroom setting and as a means to allow the pursuit of higher levels of learning.

Meyer, K. (2003). Face-to-face versus threaded discussions: The role of time and higher-order thinking. *Journal of Asynchronous Networks, 7(3)***, 55-65.**
A comparison of face-to-face and online threaded discussions led to some interesting insights. Both types of learning have value and some students seem to prefer one over the other based on their learning preferences. Students were able to rate threaded discussions in varied ways though. The author coded online

discussions using the Garrison cognitive processing categories. Using this coding it was possible to find evidence of higher-order thinking in the online discussions.

Osguthorpe, R., & Graham, R.(2003). Blended learning environments definitions and directions. *The Quarterly Review of Distance Education. 4***(3), 227-233.**
This article discusses the background and definition of the term "blended learning," as well as the goals of this approach that educators should espouse when designing blended environments. It introduces various blended learning designs used in cases studies that also appear in the same volume of this journal.

O'Toole, J.M., & Absalom, D.J. (2003, October). The impact of blended learning on student outcomes: is there room on the horse for two? *Journal of Educational Media, 28***(2-3), 179-190**.
The purpose of this study was to learn whether the provision of course materials on the Internet had a positive effect on student achievement of course outcomes. The authors found that those students who attended lecture and read web materials performed better on the quiz than did those students who only attended lecture or only used the web.

Pan, C., Sivo, S., & Brophy, J. (2003, December). Students' attitude in a web-enhanced hybrid course: A structural equation modeling inquiry. *Journal of Educational Media & Library Sciences, 41***(2), 181-194.**
This study examines the relationship of five covert factors on the use of WebCT. These factors include perceived ease of use, attitude toward WebCT, computer self-efficacy, perceived usefulness, and subjective norm. Result indicated that the technology acceptance model may not be applicable to web-enhanced courses in higher education. However, student attitude toward WebCT instruction is a significant determinant to WebCT use.

Parkinson, D., Greene, W., Kim, Y., & Marioni, J. (2003). Emerging themes of student satisfaction in a traditional course and a blended distance course. *TechTrends, 47***(4), 22-28.**
The purpose of this study was to better understand the overall themes in qualitative feedback from students enrolled in blended distance learning and traditional courses. Students in the traditional courses expressed satisfaction in all themes: classroom climate, learning needs, learner efficacy, interactions, and appropriate format for the content. Students in the distance format felt a lack of class community and belonging, and were often confused or uncertain about course material, but persevered because they felt it the only feasible way to attain their educational goals.

Priluck, R. (2004). Web-assisted courses for business education: An examination of two sections of Principals of Marketing. *Journal of Marketing Education, 26***(2), 161-173.**
This study examined the effect of two technologically different teaching methods of marketing course on student responses. A traditional, face-to-face- method of

teaching was compared to a web-assisted method of instruction. Results indicated that students in the traditional course were more satisfied with their learning experience. These students felt that the course helped them develop their skills in critical thinking, team building, and social interaction.

Reasons, Saxon G., Valadares, Kevin, & Slavkin, Michael. (2005). Questioning the hybrid model: Student outcomes in different course formats. *Journal of Asynchronous Learning, 9(1)***, 83-94.**
The authors designed a business course which could be delivered in three formats: face-to-face, blended and fully online. Three hypotheses state that interaction with course website, final grades and course participation will be significantly different in all three formats. The courses were taught in teacher education and health services using similar pedagogical techniques. Results demonstrated that the internet (online) course outperformed the other types of courses.

Riffell, S.K., & Sibley, D.F. (2004). Can hybrid course formats increase attendance in undergraduate environmental science courses? *Journal of Natural Resources and Life Sciences Education, 33***, 1-5.**
This article examines the effect of a hybrid course format (Part online, part face-to-face) on student attendance. A traditional lecture course was compared to a hybrid introductory college science course. Results indicated that completion rates of online homework were significantly greater than attendance rates to lectures. Also, this difference increased with higher class rank. Therefore, it is postulated that hybrid courses may increase student attendance, particularly for upperclassmen.

Riffell, S.K., & Sibley, D.F. (2003). Student perceptions of a hybrid learning format: Can online experiences replace traditional lectures? *Journal of College Science Teaching, 32***, 394-399.**
The purpose of this study was to examine the effect of a hybrid learning format on student perceptions in an Environmental Biology course. The hybrid instructional format included face-to-face classroom exercises and online homework. Results indicated that students experienced more student-instructor interaction in the hybrid course than in a traditional course format. Also, students indicated time-management skills and learning were aided by online homework.

Rheingold, H. (2002). *Smart mobs: The next social revolution***. Cambridge, MA: Perseus Books**
Howard Rheingold is a pioneer in the internet and communications technologies. This current book explores how technology is changing face-to-face interactions. It suggest that networks of people can be empowered through technology to work smarter and faster. While not specifically aimed at higher education, the book clearly recognizes the power of learning throughout networks of people. It recommends strategies be empowered to help unleash this new creative power.

Rovai, A.P., & Jordan, H.M. (2004, August). Blended learning and sense of community: A comparative analysis with traditional and fully online graduate courses. *International Review of Research in Open and Distance Learning*, *5*(2). **Retrieved March 17, 2005 from** **http://www.irrodl.org/content/v5.2/rovai-jordan.html**
This study examines the effect of traditional classroom, blended, and fully online course formats on sense of community. The research hypothesis was that sense of community would be strongest in the blended course due to the greater range of opportunities for student interaction with peers and professors. Results indicated that blended courses did, in fact, produce a greater sense of community than either traditional or fully online course. This finding is attributed to the fact that blended learning courses allow professors to think less about delivering instruction and instead focus on producing learning and reaching out to students.

Schwartzman, R. & Tuttle, H.V. (2002). What can online course components teach about instruction and learning? *Journal of Instructional Psychology, 29*(3), **179-188.**
This article presents evidence that certain online course design techniques can enhance traditional course formats. Electronic course components can increase instructor efficiency and enrich student learning by increasing their involvement in the course. Traditional courses can benefit by employing redundancy of the medium. They can also increase the variety of ways students can engage the material. Professors in traditional course formats may want to increase the duration of student engagement with course content and provide rapid access to help at the point where confusion may occur.

Schweizer, K., Paechter, M., & Weidenmann, B. (2003, October). Blended learning as a strategy to improve collaborative task performance. *Journal of Educational Media, 28*(2-3), **211-224.**
This study examined how groups of learners work together in blended learning and e-learning environments. Three pure e-learning courses were compared to one blended learning course were participants formed learning teams who met at three points in time. All participants received joint learning material, in order to build shared knowledge, and individualized information to build unshared knowledge. Variables analyzed include students' extent of online activity, the groups' task performance, and coherence of the groups' discourse. Results indicated that achievement in a particular group does not depend solely on the mode of communication used in the course.

Shea, P., Pickett, A., & Pelz, W. (2003). A follow up investigation of "teacher presence" in the SUNY Learning Network. *Journal of Asynchronous Learning Networks, 7(2)*, **61-80.**
The research builds on substantial research which documents the effectiveness and satisfaction of students learning online at the SUNY Learning System. The work continues to builds on several highly respected educational models and investigates further the concept of teaching presence. Students whose faculty who

opted for follow up training which emphasized their role as online instructors and advanced pedagogical techniques were surveyed to see if the training impacted learning satisfaction and effectiveness. In both cases, students perceived greater learning satisfaction and learning effectiveness.

Stein, D. (2004). Course structure: Most important factor in student satisfaction. *Distance Education Report, 8*(3), 4.

The purpose of this study was to explore students' satisfaction with their courses and perceptions of their mastery of course content. Those who were surveyed spanned the entire distance continuum from entirely online to entirely face-to-face. The author found that the most important factor in student satisfaction and community formation is the degree of structure in a course. Students want clearly defined objectives, assignments, deadlines, and expectations for dialogue or interaction.

Story, A.E. & DiElsi, J. (2003). Community building easier in blended format? *Distance Education Report, 7*(11), p2, 7.

This article reports on Mercy College's experience with blended courses in the Internet business systems Master's degree program. They have found the blended courses to be more work for instructors, so now financially compensate the instructors as if they were teaching a 4-credit-hour class when they teach a 3-credit-hour blended class. They have also found the blended courses to improve interactivity, foster peer collaboration across different learning modalities, and establish a sense of community.

Strambi, A. & Bouvet, E. (2003). Flexibility and interaction at a distance: A mixed-mode environment for language learning. *Language and Learning Technology, 7*(3), 81-102.

This article describes the process of developing a mixed-mode format of instruction for two foreign language courses. Technology was utilized in this case because is allowed greater flexibility and task authentication. Student feedback indicated that the course CD-ROM was authentic, relevant, and useful. Negative feedback was related to technical problems. The authors point out the risk of developing materials that are technology-driven but not pedagogically-sound.

Swan, K. (2005). A constructivist model for thinking about learning online. In J. Bourne & J. C. Moore (Eds), *Elements of Quality Online Education: Engaging Communities*. **Needham, MA: Sloan-C.**

The author introduces a model, RCET (which stands for Research Center for Educational Technology), to inform readers on how constructivism can be applied to online learning environments. The model focuses on three interacting domains of knowledge construction: conceptualization, representation and use. Review of constructivist learning theories and published research are incorporated to demonstrate how the model can be used to improve online learning environments.

Tuckman, B.W. (2002). Evaluating ADAPT: A hybrid instructional model combining web-based and classroom components. *Computers and Education, 39*, 261-269.
The purpose of this study was to determine the effectiveness of a hybrid instructional model called ADAPT (Active Discovery and Participation through Technology). Results indicated that those students who were taught study skills through the ADAPT method achieved the highest GPA's relative to past performance, those not taught study skills at all achieved the lowest, and those taught via traditional methods fell in between.

Twigg, C. (2003, September/October). Improving learning and reducing costs: New models for online learning. *Educause Review,* 28-38.
The aim of this article is to describe the potential benefits of using technology to improve the quality of student learning and reduce the costs of instruction. Thirty institutions received grants to help them redesign instruction using technology. On average, the institutions reduced costs by 40%. Additional outcomes included increased course-completion rates, improved retention, better student attitudes towards the subject matter, and increased student satisfaction with the mode of instruction.

Utts, J., Sommer, B., Acredolo, C., Maher, W. M., & Matthews R. H. (2003). A study comparing traditional and hybrid internet-based instruction in introductory statistics classes. *Journal of Statistics, 11*(3).
This article explored differences between a hybrid format and traditional format course in introductory statistics. Student performance in the hybrid format equaled that of the traditional format, but students in the hybrid format were slightly less positive in their subjective evaluation of the course. Many students in the hybrid format felt the course was more work, with some feeling the workload was excessive.

Vaughan, N. & Garrison, D.R (2005). **Creating cognitive presence in a blended faculty development community. *Internet and Higher Education, 8(1)*, 1-12.**
The authors coded discussions which occurred in both face-to-face and online. The discussions were coded using a cognitive processing framework developed by secondary author of this work. There were similarities and differences in the two formats. The authors recommend that faculty be trained to understand how to improve students cognitive processing development through online discussions to get the most from blended learning environments which include online discussions.

Waddoups, G.L. & Howell, S.L. (2002). Bringing online learning to campus: The hybridization of teaching and learning at Brigham Young University. International Review of Research in Open and Distance Learning, 2(2), from http://www.irrodl.org/content/v2.2/wadoups.html.
This paper describes case study research conducted when Brigham Young University (BYU) incorporated hybridization of distance learning and campus-

based educational practices into its instruction. The hybridization required administrative support and an increased level of attention to the instructional design of courses. There was increased sharing and collaboration as a result of the hybridization. A shift in faculty and student roles was also observed. The authors conclude that the hybridization experience brought distance education to the campus, but did not bring campus practices to distance education.

Wenger, E & Snyder, W (2000). Communities of practice: The organizational frontier. *Harvard Business Review***, 78(1), p.139-145**
While not specifically aimed at only higher education, Wenger recognizes the increased learning potential through use of blended interactions. The theoretical research emphasizes how businesses can get employees to learn quicker and more through empowering communities of practice with the right technological tools.

Williams, D., Howell, S., & Hricko, M. (2005). *Online Assessment Measurement and Evaluation: Emerging Practices***. Hershey, PA: Information Science Publishing**
The edited volume is part of three part series which explores online assessment. Online assessment in the authors opinion has been largely ignored. Online assessment offers educational improvement to both online and face-to-face environments. The book is divided into four sections: surveys, student feedback, tests and combinations. Each chapter shares research from either case studies, tools or a combination of both those methodologies.

Willett, H.G. (2002). Not one or the other but both: Hybrid course delivery using webCT. *The Electronic Library, 20***(5), 413-419.**
This article describes the author's experience with teaching a hybrid course using WebCT. She found that the student response was largely positive. One of the main advantages of the hybrid format is reduced commuting time. She noted that using blended format does require more time on the part of the instructor, and is sometimes prone to technical problems.

Wingard, R.G. (2004). Classroom teaching changes in web-enhanced courses: A multi-institutional study. *Educause Quarterly, 1***, 26-35.**
The purpose of this study is to assess the impact of Web-based enhancements on teaching and learning activities taking place in traditional classrooms. The study aims to identify changes in the classroom perceived by faculty to impact teaching and learning and to explore the insights of technologically-experienced faculty. Higher levels of interaction and comfort among course participants were reported. Faculty reported increased efficiency and convenience of making updated material available on the web. Increases were also reported in continuity between classes and student participation.

Wu, D. & Hiltz, S. R. (2004). Predicting learning from asynchronous online discussions. *Journal of Asynchronous Learning Networks. 8 (2),* **139-151.**

The authors used asynchronous online discussions which occurred in both face-to-face courses and online courses to evaluate whether students perceived increased learning through discussions. The survey was distributed to 116 students. Results do show students perceive increased learning. Results vary but indicate that faculty could further enhance the student perceptions with further pedagogical techniques and strategies.

Recommended Journals/Magazines/Websites publishing blended learning articles
Note: Credit for list is due to Laurie Dringus, Ph. D., Nova Southeastern University and editor of the Internet and Higher Education. Additional journals were added by the authors of this bibliography.
Table 1.
List of Peer Reviewed Higher Education Journals which accept articles about Online Learning Environments

Journal Name	Notes
American Journal of Distance Education	http://www.ajde.com/
American Journal of Education	http://www.journals.uchicago.edu/AJE/
Communications of the ACM	http://www.blackwellpublishing.com/journal.asp?ref=0007-1013
Computers & Education	Geared to computing issues—research and academic ones; http://www.acm.org/pubs/cacm/homepage.html
Computers and Education	Through Elsevier
Computers in Education	http://www.asee.org/about/publications/divisions/coed.cfm
Distance Education	http://www.tandf.co.uk/journals/titles/01587919.asp
Educause Quarterly	http://www.aect.org/Intranet/Publications/index.asp#etrd
Educational Technology Review	http://www.aace.org/pubs/etr/issue4/index.cfm Originally a print journal, now an online one
Educause Quarterly	http://www.educause.edu/apps/eq/index.asp
EduCom Review (not peer reviewed)	
Electronic Journal of Science Education	Online, http://unr.edu/homepage/jcannon/ejse/ejse.html
European Journal of Open , Distance, and E-Learning	http://www.eurodl.org/
IEEE Transactions on Computers	Geared to Engineering and Computing but carries educational issues too
Information and Software Technology	Through Elsevier
Instructional Science	Through Springerlink.com
International Journal of Educational Research	Through Elsevier
International Journal on E-Learning	http://www.aace.org/pubs/ijel/
International Journal of Instructional Media	http://www.adprima.com/ijim.htm
International Review of instructional media	Link through to http://www.irrodl.org/
The Internet and Higher Education	http://www.huizenga.nova.edu/ihe/rightframe.htm
Internet and Higher Education	http://www.emoderators.com/ipct-j/
Innovate (Journal of Online Education)	http://www.innovateonline.info/index.php?
Journal of Asynchronous Learning Networks (JALN) -- online	http://www.sloan-c.org/publications/jaln/index.asp; must sign up to gain access to older articles and RIT is a premium member
Journal of Computer-Mediated Communication	http://jcmc.indiana.edu/

Journal of Computing in Higher Education	Only on shelves and microfilm http://www.jchesite.org/
Journal of Computing in Teacher Education	http://www.iste.org/Content/NavigationMenu/Membership /SIGs/SIGTE_Teacher_Educators_/JCTE/Past_Issues2/ Volume_21/Number_4_Summer_2005/Summer_2005.htm
The Journal of Continuing Higher Education	http://www.acheinc.org/writguid.html
Journal of Distance Education	(Canadian) http://www.cade-aced.ca/pub_jde_pub_guide.php?i_nMode
Journal of Educational and Behavioral Statistics	http://www.aera.net/publications/?id=318
Journal of Education	http://www.baywood.com/Journals/
Journal of Educational Multimedia and Hypermedia (JEMH)	http://www.aace.org/pubs/jemh/
Journal of Educational Psychology	http://www.apa.org/journals/edu/
The Journal of Educational Research	http://www.heldref.org/jer.php
Journal of Educational Technology Systems (JETS)	http://www.salt.org/salt.asp?ss=l&pn=jets
Journal of Educational Technology and Society	http://www.ifets.info/
The Journal of Experimental Education	http://www.heldref.org/jexpe.php
The Journal of Higher Education	http://www.jstor.org/journals/00221546.html
Journal of Higher Education	http://jis.sagepub.com/
Journal of Instruction Delivery Systems (JIDS)	http://www.salt.org/salt.asp?ss=m&pn=jids
Journal of Instructional Science & Technology (e-JIST)	E-journal only http://www.usq.edu.au/electpub/e-jist/html/about.htm
Journal of Interactive Learning Research	http://www.aace.org/pubs/jilr/
Journal of Interactive Learning Research	Open access, http://www-jime.open.ac.uk/
The Journal of the Learning Sciences	Open access, http://www.cc.gatech.edu/lst/jls/
Journal of Network and Systems Management	Online access, http://www.cstp.umkc.edu/jnsm/
Journal of Research and Development in Education	Published by University of Georgia
Journal of Research in Science Teaching	http://www3.interscience.wiley.com/cgi-bin/jhome/31817
Journal of Research on Technology in Education	http://www.iste.org/Content/NavigationMenu/Publications/ JRTE/Issues/Volume_38/Number_1_Fall_2005/Number_1_ Fall_2005.htm
Journal of Teacher Education	http://www.sagepub.com/journal.aspx?pid=211
Journal of Technology and Teacher Education (JTATE)	http://www.aace.org/pubs/jtate/
Online Journal of Distance Learning Administration	http://www.westga.edu/%7Edistance/jmain11.html
Oxford Review of Education	http://www.tandf.co.uk/journals/titles/03054985.asp
Quarterly Review of Distance Education	http://www.aect.org/intranet/publications/QRDE/subguides.html

Review of Educational Research	http://www.jstor.org/journals/00346543.html
The Review of Higher Education	http://muse.jhu.edu/journals/review_of_higher_education/
Science Education	http://www3.interscience.wiley.com/cgi-bin/jhome/32122
Sociology of Education	http://www.jstor.org/journals/00380407.html
Studies in Educational Evaluation	http://www.sciencedirect.com/science/journal/0191491X

Table 2. Non-peer reviewed journals, newsletters, magazines which accept articles on online learning environments.

Magazine/Journal	Web Address
Academic Advanced Distributed Learning Co-Lab	http://www.academiccolab.org/
ASTD Learning Circuits	http://www.learningcircuits.org/
Campus Technology (was Syllabus) (not peer reviewed)	http://www.campus-technology.com/
Chief Learning Officer	http://clomedia.com
Chronicle of Higher Education	http://www.chronicle.com
Distance Educator	http://www.distance-educator.com/
Educational Technology Review (not peer reviewed)	http://www.aace.org/pubs/etr/issue4/index.cfm
Educational Pathways	http://www.edpath.com
e-Learn Magazine (ACM) (not peer reviewed)	http://www.elearnmag.org/
Elliott Masie	http://www.masie.com/masie/default.cfm?page=default
Magna Publications (Distance Education Report and Online Classroom)	http://www.magnapubs.com/
OLdaily and OL weekly (Stephen Downes)	http://www.downes.ca/news/OLDaily.htm
Ray Schroeder's Online Learning blog	http://people.uis.edu/rschr1/onlinelearning/blogger.html
Sloan-c View	http://www.sloan-c.org/publications/view/index.asp
Technological Horizons in Education (T.H.E.) (not peer reviewed)	http://www.thejournal.com/
Theory into Practice	http://tip.psychology.org/
Virtual University Gazette	http://www.geteducated.com/newsletter/index.asp