

# QUESTION SCANS 06

What are the costs and benefits of using delivery mechanisms such as on-line learning to improve access to post-secondary education?

## **What are the Costs and Benefits of Using Delivery Mechanisms such as On-line Learning to Improve Access to Post-Secondary Education?**

### **Overview**

The purpose of this question scan was to determine the feasibility of conducting a systematic review of the literature devoted to the costs and benefits of using distance education delivery mechanisms - chiefly on-line learning but also video-communication, telecommunication and interactive television distance learning - to improve access to post-secondary education. This question was divided into the following two questions:

- a) What are the financial costs and benefits of using delivery mechanisms such as on-line learning to improve access to post secondary education?
- b) What are the social costs and benefits of using delivery mechanisms such as on-line learning to improve access to post secondary education?

Searches applying a broad range of applicable search terms to four major databases initially yielded 464 articles potentially relevant to either or both questions. Subsequent examination of article abstracts reduced the number to 316. Of these, 77 articles seem to address question 'a', and 239 seem to address question 'b'. Some articles included in question 'a' appear relevant to both questions but include at least some discussion of the financial costs and benefits of distance learning. A search of government and professional/sectoral organisation websites uncovered an additional two documents potentially pertaining to both questions.

All literature included has been divided into two categories. The first category, comprising 136 articles, deals specifically with measurable outcomes pertaining to on-line learning. The second category, comprising 182 articles, contains more theoretically-based literature, either highlighting relevant issues in distance education or offering alternatives and suggestions future programs.

### ***Question 'a'***

The literature included for this sub-question appears to contain specific reference to financial costs and benefits of on-line learning. Government reports focusing specifically on the financial costs and benefits of investing in on-line learning are particularly relevant sources of information. These reports examine how factors such as capital and recurrent costs, production and delivery costs, budget cuts and funding affect distance learning.

The literature pertaining to question 'a' also consists of a large number of editorials advancing authors' perspectives and suggestions regarding distance education, and addressing themes of quality/evaluation and accreditation, enhanced public access, organization and governance, partnerships, and state and federal financial support. Most articles here do not focus chiefly on financial costs and barriers, mentioning them only briefly to emphasize the author's perspectives. Other scholarly material consists of

qualitative studies describing effectiveness and cost considerations of distance education in a variety of locations; and, quantitative work examining both costs and benefits and the overall effectiveness of on-line learning. Overall however, both quantitative and qualitative work addressing the *financial* costs and benefits, as opposed to the social costs and benefits, is slim (see *Themes* below for examples of all genres).

### ***Question ‘b’***

This literature looks more specifically at the social costs and benefits of on-line learning and includes articles pertaining to students’ and teachers’ perceptions of on-line learning, outcome comparisons between traditional and on-line learning, suggestions for refining internet-based learning programs, and discussions regarding accessibility.

## **Observations**

### **Quantitative: 69 articles**

#### ***Financial: Quantitative***

Included under this heading is scholarly literature that uses statistical evidence generated by experimental, quasi-experimental, and large scale descriptive studies (e.g. surveys and questionnaires) to make its case. Some studies compare student attitudes regarding distance and traditional education, for example, Smith (1996) *Convenience vs. Connection: Commuter Students’ Views on Distant Learning*. Other researchers explore the motives and barriers that affect on-line learners in their decision to enrol in distance education classes, for example, Rezabek (1999) *A Study of the Motives, Barriers and Enablers Affecting Participation in Adult Distance Education Classes in an Iowa Community College*. This literature tends to focus on the overall effectiveness of distance education and includes studies that focus on both the financial and social costs and benefits of on-line learning.

#### ***Social: Quantitative***

Quantitative studies in the ‘Social’ category address a range of issues including: learners’ approaches to on-line courses, for example, Cuneo and Harnish’s (2002) *The Lost Generation in E-learning: Deep and Surface Approaches to On-line Learning*; comparisons of academic outcomes or learning styles of on-line and traditional learners, as in Halsne’s (2002) *On-line Versus Traditionally-delivered Instruction: A Descriptive Study of Learner Characteristics in a Community College Setting*; the motivation and ability of on-line learners, for example, Hoskins and Van Hoof’s (2005) *Motivation and Ability: What Students use On-line Learning and What Influence Does it Have on Their Achievement?*; and, student satisfaction with on-line learning, as in Drennan, Pisarki, and Kennedy’s (2005) *Factors Affecting Student Attitudes toward Flexible On-line Learning in Management Education*.

### **Qualitative: 39 articles**

#### ***Financial: Qualitative***

Included under this heading are descriptive case studies, narratives and interviews, generally published in academic journals. Qualitative studies focusing on question ‘a’ generally describe the varying degrees of effectiveness (social *and* financial) of the adoption and application of on-line learning. Santally’s (2005) *From Face-to-Face*

*Classrooms to Innovative Computer-Mediated Pedagogies: Observations from the Field* identifies adapting to change in teaching and learning culture and internet costs and access as some of the social and financial barriers on-line learners face today. Few, if any, qualitative studies focus specifically on the financial costs and benefits of on-line learning in terms of access.

***Social: Qualitative***

Qualitative studies focusing on question ‘b’ generally describe students and instructors’ perceptions of the effect of on-line instruction. These studies may focus on students and teachers’ attitudes towards on-line learning, for example, Kanuka and Heather (2001) *University Student Perceptions of the Use of the Web in Distance-related Programs*. Hillesheim’s (1998) *Distant Learning: Barriers and Strategies for Students and Faculty*, by contrast, focuses on the barriers of distance learning.

**Editorials: 142 articles**

***Financial: Editorial***

These are position or opinion papers advancing both positive and negative perspectives on the costs and benefits of on-line learning in terms of access and overall quality. Articles provide suggestions for the improvement of distance education and address themes on: cultural and ethical issues, for example, Bates (2001) *International Distance Education: Cultural and Ethical Issues*; quality/evaluation and accreditation, as in Freenbeg (1999) *No Frills in the Virtual Classroom*; organization and governance, for example, Calvert, (2005) *Distance Education at the Crossroads*; partnerships and state and federal financial support, for example, Davison (1995) *Distance Learning and Information Technology: The Rhetoric and the Reasonable*; and, enhanced public access, as in Edmonds (2004) *Planning for Accessibility and Usability in E-Learning*.

***Social: Editorials***

Editorial articles in the social category: advocate for various distance programs, for example, Oakley and Stevens (2000) *TeleLearning: A Lifelong Opportunity for Canadian Students*; discuss best strategies for distance learning, as in Mukerji. and Tripathi’s (2004) *Academic Program Life Cycle: A Redefined Approach to Understanding Market Demands*; and, consider the benefits and shortcomings of on-line learning, as in Papp (2001) *Student Learning Styles & Distance Learning*.

**Reviews: 11 articles**

***Financial: Reviews***

Included under this heading are articles that review literature. In *Factors Impacting on the Success of Distance Education Students on the University of the West Indies: A Review of the Literature*, Whittington (1995) examines a number of specific factors related to the persistence and achievement of on-line learners. The author’s findings demonstrate the inconclusive nature of, and lack of generalizability within, the existing research on the interaction of these factors with educational outcomes

**Social: Reviews**

The reviews in this category look at a number of distance learning reports and discuss strategies of communication, for example, Donahoe (1995) *Using Distance Learning and Telecommunications to Develop Strategies of Communication for Widely Diverse Populations*; offer the reader an analysis of case studies on issues regarding accessibility, as in Kim-Rupnow, Dowrick, and Burke (2001) *Implications for Improving Access and Outcomes for Individuals with Disabilities in Post-secondary Distance Education*; or, present literature on distance education programs, as in Paulsen (1992) *From Bulletin Boards to Electronic Universities: Distant Education, Computer-Mediated Communication, and On-line Learning*.

**Reports: 55 documents****Financial: Reports**

These reports generally focus upon production and delivery costs of distance learning, funding and budget cuts, the overall quality of distance learning programs, and the potential effects such programs have upon students in terms of access and success in post-secondary schools. One highly relevant report from 2002, *The Costs and Benefits of Investing in On-line Learning*, addresses cost factors - capital and recurrent costs, production and delivery costs, and fixed variable costs - and perceived benefits related to student/instructor satisfaction, learning outcomes and return on investment in terms of access, flexibility and ease of use. Two further potentially relevant reports pertaining specifically to Canada are:

- *On-line Learning Report Earns an F: The E-learning E-volution in Colleges and Universities. (2001). CAUT Bulletin.* This article cites criticism of distance learning by Tom Booth, CAUT president, and Michael Conlon, National chairperson of the Canadian Federation of Students, on the state of distance learning in Canadian universities. The article encourages more broad-based consultation and consideration around the complex issues of on-line learning.
- Andrews. *et al.*'s (1991) evaluation report on *Athabasca University/Keyano College Capstone program* describes an evaluative study that strongly supports the continuation of the Capstone Program on distance learning as a viable system for improving access to post-secondary education. The study also identifies problems with the program including issues of mandate, academic freedom, formalization and administration and operation. The report includes five appendices containing a funding proposal, source documents, description of a steering committee, community letters and questionnaire responses.

**Social: Reports**

Reports under the social category often focus on student and teacher satisfaction with on-line learning. Kramarae's (2001) *The Third Shift: Women Learning On-line* examines trends in both the growth of technology and distance education in college and university and the demographic shift toward a primarily female population of mature college students. Two further reports pertaining specifically to Canada are:

- Brindley (1989) *Retention Strategies: A Pre-admission Program for Adult Distance Learners*. This study looks at how to successfully prepare and retain students in distant learning courses. The report highlights Athabasca University in Edmonton efforts made in this area.
- Harpp, Fenster and Schwarz (2004) *Lecture Retrieval Via The Web: Better Than Being There?* This study looks at the prospects of using the internet as a lecture delivery system using the chemistry faculty at McGill University.

### **Grey Literature: 2 documents**

Grey literature may subsume any of the above four genres. The two documents included are made available on the internet in PDF. The first document, Curneo, Campbell and Harnish's (2002) *The Integration and Effectiveness of ICT's in Canadian Postsecondary Education* provides a useful summary of themes pertinent to distance education including; infrastructure and institutional support, the integration of technologies into Canadian higher education, motivation and goals of teachers and students, computer, literacy and communication skills, and the integration of technologies with learning and teaching styles of students and their instructors. This document also provides policy recommendations based upon the statistical analyses of 39 surveys conducted over five years prior to the article.

The second document, Ted James's (1999) *Learner Support and Success: Determining the Educational Support needs for learners in to the 21<sup>st</sup> Century* highlights the likely educational support needs of learners in public colleges, institutions and agencies in British Columbia in the early 21<sup>st</sup> century. The report focuses primarily on the college system in BC and covers a wide range of support service issues for students and faculty including "computer support services."

### **Summary**

A great deal of literature discusses the costs and benefits of distance education. However much of this literature appears opinion-based rather than empirically oriented. Opinions expressed in the current literature appear to be divided between uncritical accounts of the benefits of distance education and more sceptical reviews of these perceived benefits.

Empirical research where best practices are identified would be of value but little was located in this scan. Such information could aid in determining what actual financial costs might be. Despite the apparent lack of empirical data, several policy relevant themes persist throughout the five genres of literature; they are as follows:

- Needs Assessment: The importance of understanding delivery methods such as on-line learning *before* its implementation. This means an investigation of not only the technical usability of such delivery methods but also an evaluation regarding teaching and learning needs.
- Institutional Support for Students and Faculty: Students' familiarity with on-line delivery methods will be largely dependent upon their access to a computer both at school and at home. Support and facilities need to be readily available to those

without computer access. As on-line learning and computer use in the classroom becomes more popular, faculty must also have ready access to computers.

- Professional Development: Instructors need additional support in when it comes to new delivery methods. Some articles suggest that more attention needs to be paid towards “on-line” teaching styles.
- Understanding of How Factors such as Race, Gender, Socio-economic Status and Disability Influence Distance Learning

## Appendix A: Included References

### References - Canada

- Canadian Officials Press for Broadband Access. (2001). *Distance Education Report*, 5(24), 5. The Canadian federal government has been urged to retain a broadband initiative in the forthcoming budget by the country's Council of Ministers. The ministers, who cited the importance of the initiative in extending e-learning, are concerned that the computer network program could be cut in favour of new government security measures following the terrorist attacks of September 11, 2001.
- Online Learning Report Earns an F [The E-learning E-volution in Colleges & Universities]. (2001). *CAUT Bulletin*, 48(3), A6.  
"The committee bases a lot of its recommendations on the belief that online education will improve accessibility," said CAUT president Tom Booth. "In truth, we know that a lot of web-based courses cost more and that a substantial number of students fail to complete their online courses." "The mandate of the committee clearly is not improving the quality and accessibility of post-secondary education," said Michael Conlon, national chairperson of the Canadian Federation of Students. "Online learning is not a solution to the crisis of under funding and skyrocketing tuition fees." "The group clearly has a vested interest in promoting online learning," Booth said. "It's a cheerleading squad. But we don't need more cheerleading. We need a more broad-based consultation and careful consideration of the complex issues involved with online learning."
- Andrews, M. B., & Others. (1991). *Athabasca University/Keyano College Capstone Program. An Evaluation Report*. Canada, Alberta.  
An evaluative study was done of a joint project, the Capstone Program, involving Keyano College (KC) and Athabasca University (AU), both in Alberta, Canada. The project enables students in the Fort McMurray (Alberta) area to complete a full-time university degree without leaving their home community. The research design focused on accessibility, attainment of university credit, credit for previous education, bureaucratic issues, academic problems, perceptions of success, effectiveness and cost issues and recommendations for change suggested by the stakeholders. Data were provided by administrators, instructors, students (past, present and future) and community groups via questionnaires, interviews and relevant records and documents. The evidence from the evaluation strongly supported the continuation of the Capstone Program as a viable system for improving access to postsecondary education. However, the evaluation also identified problems which included issues of mandate, academic freedom, formalization, and administration and operation. For example, the evaluation recommends that AU develop a policy that explicitly recognizes and addresses the mix of alternative delivery systems, and that AU staff, in consultation with KC staff, accelerate the joint production of a professional agreement which underscores

collegiality between and among professional and support staff of both institutions. Five appendixes contain a funding proposal, source documents, description of a steering committee, community letters, and questionnaire responses.

Bates, T. (2001). International Distance Education: Cultural and Ethical Issues. *Distance Education*, 22(1), 122-136.

A special issue on cultural considerations in online learning. The writer describes an international online program run by the University of British Columbia in Canada in conjunction with the Monterrey Institute of Technology in Mexico. He describes some of the different models of international distance education (direct marketing, franchise arrangements, and joint programs), highlights several of the reasons why institutions are choosing to offer their courses internationally, discusses some of the cultural and ethical issues arising from the use of the Internet (language, culture, fees, access, collaborative learning, and quality control), and suggests a number of strategies that institutions can use to help them deal with the many interesting and challenging issues involved in offering international distance education programs.

Brindley, J. E. (1989). *Retention Strategies: A Pre-admission Program for Adult Distance Learners*. Canada, Alberta.

Provision of orientation programs is of primary importance in postsecondary education in order to help students assess themselves in relation to the challenge presented by their chosen program and institution and to develop the skills necessary to meet that challenge. Open institutions using distance teaching methods have a special responsibility to ensure that prospective students are not set up for failure by the promise of accessibility and flexibility. Athabasca University in Edmonton, Ontario, Canada, tries to meet this responsibility by supplying a range of preadmission services that can be delivered through a variety of modes to prospective and new students. These services include: (1) information; (2) orientation; and (3) a self-assessment questionnaire to help students or prospective students determine their reasons for returning to study and the commitment they can make to it. Evaluation of preadmission services is ongoing to ensure that they are meeting student needs. For the future, Athabasca University will attempt to improve preadmission services through increasing accessibility, using new technologies, and taking a more integrated approach.

Burke, A. M. (1998). Distance Education: Reducing Barriers. *Education Quarterly Review*, 5(1), 8.

The evidence indicates that those most at risk of interrupting their studies belong to the very groups in Canadian society that are over-represented in distance education compared to non-distance education (Charts 4 and 5). For example, 8% more distance than non-distance students were aged 17 to 24 and 7% more were aged 25 to 34 -- these are the two age groups with the highest rates of interruption. Conversely, distance students were underrepresented among the older age groups that had the lowest rates of interruption -- 3% fewer distance than non-distance students were aged 35 to 44, and 12% fewer were aged 45 and over. Distance students likely experienced greater financial and/or time burdens than did their non-

distance counterparts. The preponderance of women among distance students, distance students' relatively lower socio-economic profile, and the nature of activities in which they were engaged, placed them at greater risk of interruption. As well, distance education tends to be much less interactive than non-distance education. This may increase the social isolation that many distance students already feel, thereby increasing the risk of interruption. This sense of social isolation could arise for various reasons (e.g., being unmarried, living in rural and remote locations or being a high-school drop-out). Young distance students also have a much higher interruption rate than their non-distance peers. Although their over-representation among the distance education population increases their risk of interruption, this is only part of the explanation. Distance students aged 17 to 34 had an interruption rate more than double that of their non-distance counterparts -- 15% vs. 7%. Gender played a role in these differences. Relative to non-distance students, a higher proportion of distance students aged 17 to 34 were women (56% vs. 52%), who, as already noted, tended to have higher interruption rates.

Cuneo, C. J., Campbell, B., & Harnish, D. (2002). *The Integration and Effectiveness of ICTs in Canadian Post-secondary Education* (Tech. Rep. No. NO). Montreal: Pan-Canadian Education Research Agenda Symposium.

Cuneo, C. J., & Harnish, D. (2002). *The Lost generation in E-learning: Deep and Surface Approaches to Online Learning*. Canada, Ontario.

This study examined the independent effects of six approaches to learning in online computer conferencing: (1) deep learning; (2) comprehension learning; (3) relating ideas; (4) surface learning; (5) syllabus boundness; and (6) achievement motivation. Deep learning, comprehension learning, and relating ideas were combined into a more general index called meaning orientation or deep approach to learning. Syllabus boundness and surface learning were combined into a reproducing orientation index, a surface approach to learning. Online surveys were conducted in 3 school years at a Canadian university using the First-Class proprietary software, which had been customized into an online conferencing system. The questionnaire was completed by 114, 280, and 679 students in the 3 years. Factor indexes were created of approaches to learning, active use of online conferencing, and the subjective valuation of its personal importance to students, and embarrassment or anxieties over posting messages to online course conferences. Seven hypotheses were developed, the main one being that a deep approach to learning would result in greater use and personal importance of registered than unregistered course conferences. Only partial support was found for the hypotheses. The deep approach to learning resulted in a heightened active use of almost all aspects of online conferencing, increased reading and sending of messages, a greater subjective valuation by learners of the importance of participation in conferencing and non-academic social debates, and a reduction in anxiety about postings. About 15% to 25% of the samples formed a lost generation in the e-learning world. These students scored high on a surface approach to learning and low on a deep approach. Implications for educators who want to reach these students are discussed.

Deschenes, Andre-Jacques. (2001). L'encadrement-programme Aux Etudes Superieures en Formation a Distance a la Tele-universite. *Journal of Distance Education*, 16(2), 1.

Farr, Moira. (2004). On Track with On-line Education: University of Ottawa gets an A for E-learning in Health Sciences. *University Affairs*, 45(9), 22.

Gaide, S. (2004). Reusing Learning Objects: Improving Instructional Design, Reducing Costs at Athabasca U. *Distance Education Report*, 8(13), 8.  
According to Terry Anderson, Canada research chair in distance education at Athabasca University in Canada, all online institutions must overcome several challenges in order to effectively utilize learning objects, repositories, and metadata for optimal delivery of online distance education. Online institutions must customize learning objects, make repositories accessible, implement metadata tags, create e-portfolios, and ensure the interoperability of learning objects.

Goldstone, Jennifer. (1997). Simon Fraser University Helps Ghana Develop Distance Education. *University Affairs*, 38(8), UniWorld.

Harpp, D. N., Fenster, A. E., & Schwarcz, J. A. (2004). Lecture Retrieval Via the Web: Better Than Being there? *Journal of Chemical Education*, 81(5), 688-690.  
Chemistry faculty at McGill University, Quebec, Canada, have had some success with using the Internet as a lecture delivery system. Lectures presented as PowerPoint presentations are sound synchronized as the lecture proceeds and saved as a media file for dissemination on the web. The playback system requires Windows Media Player 7.0 or above and Internet Explorer 5.5 or higher, a combination that provides access to any user with a 56.6 kps, or above, Internet connection. Student appreciation for the system, which they use to view a missed lecture or to review attended lectures, is high.

Hodson, J. (2004). Aboriginal Learning and Healing in a Virtual World. *Canadian Journal of Native Education*, 28(1/2), 111.  
Today Aboriginal peoples on Turtle Island are witnessing the leading edge of a new wave of colonialism propelled by the new religion of corporate globalism, and the Internet is the contemporary missionary of that new religion. If we do not extend the dialogue about this new colonialism and understand its potential outcomes, we risk repeating our pasts. Although this article was inspired by the events related to a research project, it is not intended to be an exhaustive discussion of the findings associated with the Learning and Healing Network research project, which investigated the suitability of Internet-delivered education for Aboriginal peoples. Instead I share some of our experiences and discuss the critical issues that arose during the completion of the Learning and Healing Network project. It is my hope that others will find this experience relevant as they break their own trails to Internet-delivered education.

James, T. (1999). *Learner Support and Success: Determining the Educational: Support Needs for Learners into the 21st Century* (Tech. Report No. NO). British Columbia: British Columbia Senior Educational Officers Committee and Senior Instructional Officers Committee.

Jorgenson, H. (2003). Evaluate & Improve Distance Programs With Sloan-C's Five Pillars of Quality. *Distance Education Report*, 7(24), 1-3.  
The Sloan Consortium's five pillars of quality have been developed to help educators assess and continuously improve online courses and programs. These five pillars are based on the five interrelated and interdependent elements of learning effectiveness, cost effectiveness, access, faculty satisfaction, and student satisfaction.

Kanuka, H. (2001). University Student Perceptions of the Use of the Web in Distance-delivered Programs. *Canadian Journal of Higher Education*, 31(3), 49-71.  
Investigated over two years Canadian students' needs when integrating the Web into distance-delivered degree programs, using Michael Moore's theory of transactional distance. Found that students considered the Web an effective technology to facilitate distance delivery; problems included working with instructors without expertise in the technologies, a lack of timely and informative feedback, and vague or confusing instructions.

Kanuka, Heather. (2001). University Student Perceptions of the Use of the Web in Distance-related Programs. *The Canadian Journal of Higher Education*, 31(3), 49.  
Influenced by both schools of thought, Moore aimed "to provide a conceptual tool that would help students and others to place any distance education program in relationship with any other" (Moore & Kearsley, 1996, p. 199). To accomplish this, Moore sought to isolate those elements of educational transactions that most critically influence the learners in distance education environments. The core of this theory rests on the argument that distance education refers to 'distance' as more than simply a 'geographic' separation of the learners and their instructors. Rather, "it is a distance of understandings and perceptions, caused in part by the geographic distance that has to be overcome by teachers, learners and educational organizations if effective, deliberate, planned learning is to occur" (Moore, p. 2). Thus, a physical separation can lead to a psychological and communication gap that can, in turn, result in misunderstandings for the learners. This is 'transactional' distance. It should also be made clear that transactional distance is a relative rather than an absolute form of education. Specifically, with respect to the separation between the learner and instructor, there are many different degrees. Moreover, distance education is a subset of education programs and, as such, is education. Thus, much of what we currently know about teaching and learning can be applied to both the theory and the practice of distance education. However, even though we can apply much of what we know, if the degree of separation is great, it can transform traditional expository teaching so significantly that new ways of teaching are needed. When we deconstruct the data in this study through delineating the technological data from the pedagogical data, and analyze the data using transactional distance theory as a framework, it becomes clear why many students experienced frustration. According

to Moore (1991), the success of distance education rests largely on whether the individual instructors are able to provide the appropriate opportunity for, and quality of, dialogue between the instructor and the learner, as well as appropriately structured learning materials. The data in this study indicate that many students felt the program's courses could have been better organized through a greater degree of structure. The data from the open-ended interviews and online transcripts also revealed this need to be greater for the undergraduate students. With respect to the dialogue variable, the learners did have access to CMC, as well as three audio or video conferencing sessions per course. However, these modes of communication may not have been as accessible or ubiquitous as other modes of communication, and thus resulted in insufficient dialogue. Based on the relationships of the data to these variables, a conclusion can be made that there was a high level of transactional distance for the distance-delivered programs. Using Moore's transactional distance theory, if distance education is to be successful when there is a high level of transactional distance; the learners must be both capable and willing to assume a high degree of responsibility. This seemed not to be the case for the undergraduate student cohort, drawing attention to the need to reduce the transactional distance through providing more structure and dialogue. However, it is less clear whether this conclusion can be drawn with the graduate student cohort.

Keen, Clive. (1999). Distance Education on the Upswing. *Canadian Vocational Journal*, 34(1), 9.

Marchand, Louise. (2000). Pratique d'apprentissage en Ligne aux Etudes Superieures. *Education Canada*, N/A.

Martin, Carol. (1998). Telelearning in Canada. *Teach*, 25.

Probably the best-known TeleLearning-NCE project is Virtual-U -- web-based software that supports delivery of online courses and course enhancement. The core of Theme 5's research, Virtual-U was first offered at Simon Fraser University in 1996 and has subsequently been adopted by institutions across the country. Field tests are being conducted to collect data from the 70 courses offered (26 totally online, 14 enhancing face-to-face classes, 30 in mixed mode) and to investigate the effectiveness of Virtual-U's course delivery. So far, the results show that students access Virtual-U classrooms around the clock, seven days a week; that compared with face-to-face courses, the drop-out rate from Virtual-U courses is very low; that students tend to participate in online class discussion more actively than in traditional classrooms; that instructors are changing their teaching style from a teacher-centred to a more learner-centred approach; and that most courses use collaborative strategies and have ongoing peer interaction. Instructors noted that participating in V groups -- the computer conferencing system that lets students engage in discussions, debates, team projects, and tutorials -- helped students think more critically about their work and that of others. There is no doubt about the usefulness of computer technology in the delivery of courses to people who, for a variety of reasons, are unable to get to a traditional campus. Mary Westerhof is a psychiatric nurse in Hamilton, Ontario who is taking Virtual-U classes from Douglas

College, BC. She was obliged to go back to school because new Ontario regulations require all nurses to take some form of instruction to show that they are upgrading their education. Having four children at home and being a full-time nurse, it would have been impossible for Westerhof to attend regular university classes. So, she enrolled in a Virtual-U advanced psychiatric nursing course at Douglas College. She first heard about Virtual-U from Ray Fournier, the site administrator, through a nurses' users group she had joined on the Internet. There are only four students in her course.

McGreal, Rory. (2002). *Teleapprentissage et Mondialisation de l'enseignement.*

*Education Canada [H.W.Wilson - EDUC], 42(1), 8.*

Le teleapprentissage par voie electronique en est encore au stade embryonnaire. Le World-Wide Web (W3) existe depuis 1992 seulement. L'apparition de tables d'orientation graphique sophistiquées ne remonte qu'à 1994. Les premiers cours sur le W3 ont été lancés en 1995. Quelques années d'expérimentation seront encore nécessaires pour accroître la qualité générale des cours en ligne. Entre-temps, l'enseignement et la formation dans les secteurs public et privé progressent à un rythme exponentiel. Le domaine de l'éducation devrait surpasser l'industrie touristique comme principal secteur économique mondial au cours des dix à vingt prochaines années.

Mendes, R. (1998). *Hypotheses for the Virtual Classroom: A Case Study.* Canada, Ontario.

In order to assess the feasibility of a technologically enhanced education delivery, a Canadian community college offered an online course on HTML authoring. The instructor designed a Web site, which functioned as the "textbook", and updated it periodically according to lesson plans and student feedback. An electronic mailing list fostered communication among the students and instructor, who posted most messages regarding maintenance and technical issues. Levels of participation for the 14 students varied, with only half completing the final project: to produce a personal Web page. According to the course evaluation, some learners adapted readily to the fluid learning environment, but others were less self-directed and needed more structure. However, all students deemed the course's flexibility a very positive aspect, as each was employed and could complete course work at his /her own convenience. The instructor's dedication and knowledge was also praised, indicating that online teachers need the same qualities for success as in a traditional classroom, and probably more commitment since there are no designated class hours. The course demonstrated that not all students thrive in a virtual classroom, but it offers a unique fluidity and versatility advantageous to many. (Contains 26 references.)

Monaghan, P. (1991). Ambitious Program Run by U.S. College Offers Hope to Canada Indians. *Chronicle of Higher Education, 37(35), A3.*

When Canadian institutions would not provide courses for the Canim Lake (British Columbia) Band of the Shuswap Indians, Gonzaga University (Washington), 500 miles away, began a program of classes held on the reservation, linkage with the

main campus by computer, and an on-campus summer session that entire families attended.

Oakley, W., & Stevens, K. (2000). TeleLearning: A lifelong opportunity for Canadian students. *Education Canada*, 40(2), 32-3, 42.

Part of a special section on lifelong learning in Canada. Although distance learning has been a key tool in providing opportunities for lifelong learning for several years, it is gradually being displaced by telelearning. Telelearning, which is based on the delivery of education via the Internet, allows learners to access information simultaneously from a vast range of sources. This aspect of telelearning allows for increased flexibility in the organization of times and places for teaching and learning and will radically change the relationship between learner, teacher, and information. If schools are to change from being mainly providers of on-site education for defined periods of students' lives to become providers of lifelong learning, educators will need to consider the technological and organizational changes that are taking place in the delivery of education as well as the pedagogical implications of telelearning for students and teachers alike.

Owen, M., & Hotchkis, R. (1991). *Who Benefits from Distance Education? A study of Athabasca University Graduates, 1985-1990. Draft paper.* Canada; Saskatchewan: This study examined the student characteristics of Athabasca University (AU), Alberta, Canada, a distance and Open University, and asked whether AU serves the student clientele that its mission proposes and to what the AU graduates attribute success. Established to make it possible for people to earn a university education regardless of where they live or work, or their commitments to careers or families, AU removes the barriers of time, space, past educational experience and to some degree level of income. Using biographies, responses to a graduate survey and institutional studies data, the study found that AU does reduce the major barriers of time, space and previous educational attainment to higher education in Alberta, Canada. Data indicated that many graduates attended AU to improve their career prospects though many entered or re-entered to obtain their first degree. Most students (68 percent) and graduates (63 percent) are women who study for self-improvement and intellectual stimulation rather than for higher professional qualifications, a frequent reason for men to study. Data also suggested that AU does reduce barriers to higher education study for women. The data also indicated that the AU experience assisted students to gain in self-esteem and self-confidence. Included are 17 references.

Pidgeon, M., & Cox, D. G. H. (2002). Researching with Aboriginal Peoples: Practices and Principles. *Canadian Journal of Native Education*, 26(2), 96.

The increasing participation of Aboriginal students in Canadian higher education had been attributed to the development of services for students in institutions of higher education. Pigeon (2001) studied the relationship between students and student services in the evolution and delivery of these services. This article reflects on an important facet of this original research used to conduct this project. It highlights the importance of developing a culturally sensitive research process when exploring

Aboriginal issues. The research process of this study included the use of technology, the development of a Web site to enable such a process. Lessons learned from conducting this research are shared in relationship to research process, care principles and guiding values.

Simone, D., Christina, Ives, Cindy, & McWhaw, Katherine. (2005). Reflections of Researchers Involved in the Evaluation of Pedagogical Technological Innovations in a University Setting. *The Canadian Journal of Higher Education*, 35(1), 61.

In our work with faculty we were influenced by theoretical frameworks in teaching and learning, instructional design, technology implementation and educational research. For example with respect to teaching and learning, we drew from constructivist theories, which emphasize strategies that promote cognitive engagement and meaningful involvement with tasks. Active learning-interaction with teachers, classmates, and course materials-allows learners to construct their own meaning (Jonassen, 1999), preferably within authentic learning situations (Brown, Collins, & Duguid, 1989). The implication of this perspective for instruction is that teachers become guides or coaches who provide learners with appropriate scaffolding (Vygotsky, 1978) so that students can maximize their ability to apply their newly acquired knowledge in personally meaningful contexts. There is a pervasive view in the higher education literature that technology can effectively support constructivist learning environments (e.g., Hannafin & Land, 1997; Harasim, 1999; Hiltz, 1994; [Rogers, D.L.], 2000; Twigg, 2000). Research has recognized the value of approaching instructional design through a number of learning-centered principles that focus on cognitive, metacognitive, motivational and affective factors, and individual differences (Lambert & McCombs, 1998). Good practice in undergraduate education involves interaction and active learning, is organized to support a range of learning preferences (Chickering & Gamson, 1987), and includes a variety of instructional materials (Brown, 2000). For technology to play an effective role in this process, it must be wisely integrated with pedagogy and institutional infrastructure (Bates & Poole, 2003; Daniel, 1996; Richey, 1997). This means that technologies should be chosen appropriately, based on their features (Laurillard, 2002) and their use should be designed to support specific learning outcomes (Gandell, Weston, Finkelstein & Winer, 2000; Sharpe & Bailey, 1999). We found that successful teaching and learning practices using technology in the postsecondary classroom could be categorized into one of: (a) technical practices, (b) support and training practices, and (c) instructional practices. Technical practices (e.g., Mitra, Steffensmeier, Lenzmeier & Massoni, 1999; Oliva & Pollastrini, 1995) include reliable, universal access to appropriate hard and software, with regular equipment upgrades. Standardization is highly recommended. Support and training practices (e.g., Gibson & Nocente, 1998; [Sprague, D.M.], Kopfman, & deLevante, 1998; Strudler, McKinney, & Jones, 1995; Wager, Heye, & Tsai, 1995) include both pedagogical and technical training offered by competent and available instructional and IT specialists. As well, institutional planning efforts are essential. Instructional practices (e.g., Carlson & Gooden, 1999; Halpin, 1999; Peters, O'Brien, Briscoe, & Korth, 1995; Siegel, Good, & Moore, 1996; Smith, 2000) include constructivist teaching strategies, modelling, group work, practice activities and the choice of

appropriate software. We found it interesting that many research reports purporting to describe evaluations of the effectiveness of technology-enhanced teaching and learning focused on administrative rather than on teaching and learning issues, and note here that two of the three categories we identified in the literature were not directly related to teaching activities. Few of the studies reported learning gains related to the use of technology.

Sweet, Robert. (2000). Distance Education for Adult Learners: Developments in the Canadian Post-secondary System. *The Canadian Journal for the Study of Adult Education*, 14(1), 1.

In this paper, recent developments in the design, development, and delivery of distance education programs are traced; the emergence of student-centered instructional approaches is particularly noted. Using the Adult Education and Training Survey (Statistics Canada, 1994) the current status of post-secondary distance education provision for adult learners is described. Enrolments in college and university distance education programs as well as the use of various communications media in course delivery are profiled. This overview of developments in distance education and the analysis of the state of post-secondary distance education forms the basis for a discussion of institutional changes that necessarily follow adoption of distance education concepts and technology. These include organizational re-structuring, new roles for faculty, and the implementation of entrepreneurial strategies to cope with increased program development costs. The implications of these changes are examined for individual students who, although they may benefit from improved distance education designs, also must bear the financial burden of the increased reliance on communications technology. In conclusion, research priorities consistent with the market orientation of post-secondary distance education for working adults are considered. To the extent post-secondary cost-recovery programs and partnerships with business and industry exacerbate the current trend toward viewing students as consumers--who are obliged (but not always able) to pay for the necessary communications technology--the ideal of accessible education may not be well served. As an extensively wired country, Canada can offer its citizens the benefits of technologically based distance learning at the post-secondary level. But it can do so equitably only if existing social and economic disparities are taken into account. Adoption of a wholly market approach to materials development and program dissemination may appeal to a commercial market, comprising individuals and groups with sufficient wealth to afford the hardware, software, and connection charges associated with being on-line. However, another, social market is made up of individuals who are disadvantaged in some way and may be effectively excluded from mediated learning ([Bates], 1997). These include many members of the marginalised groups identified in various labour market adjustment policy initiatives: women, First Nations peoples, visible minorities, and disabled persons ([Mahon], 1990). More generally, this social market includes all those who are unable to afford the telephone connections, personal computer, and associated software, or the necessary training in their use. Participation by these individuals in post-secondary education is a social imperative as well as an economic necessity. Unfortunately, government policies of financial

restraint restrict the ability of colleges and universities to accommodate these students (Armstrong, 1998). Reductions in funding lead to entrepreneurial behaviour and market responses; the resultant commodification of post-secondary programming runs counter to traditional priorities of equity and accessibility. A lack of money is not, however, the only causal factor in the changing post-secondary environment. Technologically mediated instruction may be a response to government cutbacks but technology itself contributes to the process of change in post-secondary education. Because of the ability of institutions--whether public or proprietary--to offer on-line courses virtually anywhere, the regional mandate (and hegemony) of universities and colleges has begun to slip. They can no longer count on the support of the traditional student body; nor can they count on the allegiance of adult learners in their communities. Both institutions and individuals are operating in an increasingly active educational marketplace.

Voyageur, J. C. (2001). Ready, Willing and Able: Prospects for Distance Learning in Canada's First Nations Community. *Journal of Distance Education*, 16(1), 102.

Watson, Peter. (2001). The African Virtual University. *Education Canada*, 40(4), 46.  
The AVU (<http://www.avu.org/>) was created by the World Bank in 1997, following an idea by Etienne Baranshanaje. The concept was to bring Western post-secondary education to the poorest nations in the world. The idea is simple and elegant: use TV lectures, broadcast to ground stations by satellite, to reach a large number of universities in Africa, and supplement this by tutorials and labs at the local sites and live tutorials from the originating sites. As someone who has taught in Africa, I found the idea particularly attractive. When the technology worked, it was a great success. The live tutorials demonstrated this. We would get questions by FAX, Email or phone. We would be answering them in a studio with two cameras and an overhead camera, which allowed us to work through examples on paper. The picture would travel by phone to Teleglobe Canada, by landline to New York, by radio to a satellite, across the Atlantic to a second satellite over Africa and be broadcast to the ground stations. It gives one an incredible feeling of a shrinking world to be able to say "Thanks very much, Kumasi: now does Addis Ababa have any questions?!" Emails from individual students and local instructors showed how much they valued the lectures.

## References – USA

The Costs and Benefits of Investing in Online Learning. (2002). *Distance Education Report*, 6(9), 3.

Institutions engaged in the process of deciding how much to invest in distance education need to understand the costs and benefits of distance courses. Among the cost factors involved in such courses are capital and recurrent costs, production and delivery costs, and fixed and variable costs. Meanwhile, according to a study by Bartolic-Zlomislic and Bates, the benefits of distance education relate to student/instructor satisfaction, learning outcomes, and return on investment; access, flexibility, and ease of use; and potential to reach new markets.

*Distance learning. Symposium 4. [AHRD conference, 2001](2001)*. U.S.; Louisiana: This document contains three papers on distance learning and human resource development (HRD). "An Exploration of Perceived Differences in Teaching Roles between On-Site and On-line Instruction" (James J. Kirk) reports on a study in which 144 online instructors at selected institutions across the United States were asked to share their perceptions about the effect of online instructional delivery on the following 9 traditional teaching roles: authoritarian; counsellor; discussion monitor; evaluator; subject matter expert; information presenter; instructional designer; mentor; and role model. "Factors Affecting Student Completion in a Distance Learning Mediated HRD Baccalaureate Program" (Hui-Chin Chu, Barbara E. Hinton) analyzes the impact of the following factors on non-traditional adult students' completion of a distance learning-mediated baccalaureate degree-level HRD program: demographics; number of technical and general education hours transferred; and work-related and family-related variables. "Experiences of Web-based Instruction among African-American Students Enrolled in Training and Development Graduate Courses" (Saundra Wall Williams) reports on a study of the online experiences of graduate-level African-American students that focused on learner-instructor interactions and gave new insights as to why African-American students do not participate or continue to participate in Web-based courses at the graduate level. All three papers include substantial bibliographies.

Education bytes: The Problems and Promise of Technology. (1999). *Academe*, 85(5), 18-24+.

A special issue on distance education and educational technology in colleges and universities is presented. Articles discuss distance education programs in traditional colleges and universities, the need to reconsider online education and its benefits, threats posed by distance education, the place of technology in institutional change, challenges posed by the technological revolution, research on distance education, the need to take account of the conditions that shape the use of instructional technologies, the integration of Internet and CD-ROM technologies in history courses at one university, obstacles to electronic monographs becoming the future of scholarly publishing, the Scholarly Publishing and Academic Resources Coalition's use of electronic publishing to counteract the high price of scientific periodicals, the

legal implications of the expansion of Internet and e-mail access on campuses, and the everyday difficulties that can arise with the use of educational technologies.

Web Based Instruction--Practical Applications. (1998). *Educational Media International*, 35(3), 149-230.

A special issue on the practical applications of Web-based instruction. The 13 articles in the special issue discuss such topics as the use of the Web for task-based information access, the inherent ability of the Web in facilitating problem-solving processes, and the technological and pedagogical implications of Web-based instruction using authentic learning environments. They collectively demonstrate that in order for Web-based instruction to be effective, it must be pedagogically driven, dynamically designed, action oriented, and content specific.

Abramson, G., & Ellis, T. (2000). *Defining a Distant Environment for Teacher Education*. U.S.; Florida:

This paper describes some of the issues involved in refining Internet-based, asynchronous conference forums to meet the learning needs of adult students in distant in-service and graduate courses. The paper focuses on an analysis of existing instruction delivery systems and explores identification of optimal environments for in-service professional development courses. Topics addressed include: (1) the traditional campus; (2) virtual campuses; (3) the adult as a student; (4) needs of adults as online learners, including flexibility of schedule, direct and immediate applicability of material, positive connection to previous experiences, problem-solving orientation, and self-direction; (5) dangers inherent in an online environment; (6) the graduate education programs at Nova South-eastern University (Florida) School of Computer and Information Sciences (SCIS); (7) the Learning Place at SCIS; (8) distant instruction at SCIS; and (9) moving toward optimization.

Academic Senate for California Community Colleges, Sacramento. (2003). *The Impact of Computer Technology on Student Access and Success in the California Community Colleges*. U.S.; California:

In spring 2001, the Academic Senate for California Community Colleges passed a resolution whose aim is to narrow the digital divide among California community college students. The digital divide is defined as the disparity between those who have access to technology and those who do not. The resolution suggests two questions: (1) How has technology increased or decreased access for students in community colleges? (2) How has technology contributed to student success in the community college? The California Community Colleges System took advantage of a 1994-96 U.S. Department of Commerce planning grant to develop the Technology I Strategic Plan, which funded the Telecommunications and Technology Infrastructure Program (TTIP), an effort to provide support networks and other resources for faculty, students, and staff in the area of computer technology. In 2000-2001, TTIP provided a total of \$44.3 million to California community colleges. Nevertheless, dedicated system-wide support for computer technology has been inadequate, with only 22% of computer technology funds coming from TTIP. These funds are earmarked for reduction in 2003-2004. This report also covers access for

the disabled, quality of access as an issue of the digital divide, the role of faculty in access, and student success.

- Ambler, M. (2004). Distance Education Comes Home. *Tribal College*, 15(4), 8-9.  
All but five of the 34 tribal colleges in the American Indian Higher Education Consortium are using technology to deliver higher education to the students where they live rather than students being forced to abandon their families and tribes. Tribal colleges are using satellite networks and the Internet to transmit and receive workshops, courses, and entire degree programs to students who often live in remote, rural areas with little access to education. These distance education programs are transforming attitudes toward education and, in the process, transforming nations of people.
- Anders, R. L. (2001). See You On-line: An Evaluation of an On-line Nursing Distance Education Course. *Nurse Educator*, 26(6), 252, 258.  
A study assessed an online nursing distance education course at the University of Hawaii. Participants were 29 graduate students enrolled on the course between fall 1998 and fall 1999. Results indicated that students were generally very satisfied with the course and that it offered them a quality educational experience and increased their access to faculty and instructional resources.
- Anderson, E. C., Du Plessis, J., & Nickel, T. (2001). Participation in International Teleconferences and Discussions: Implicit Assumptions. *Educational Technology Research and Development*, 49(3), 119-123.  
A recent teleconference and online discussion involving Utah State University (USU) and Border Technic in South Africa showed that such collaboration carries implicit assumptions. This collaboration using the tools of distance education to discuss distance education showed that the establishment of a clear commitment from the outset by both parties can be elusive. USU made far-reaching, largely unconscious, and mostly incorrect assumptions that involved convenient Internet access and timeliness and the ability to implement new technology now. Perhaps most importantly, it assumed that interaction in an online discussion would be seen as valuable regardless of a tangible outcome. In addition, USU largely overlooked technical and possibly social deterrents that faced Border Technikon and that affected participation in the online discussion. Without a broad consensus, the collaborative experience was almost certainly destined to be only partially successful at best.
- Armstrong, L. (2000). Distance learning: An Academic Leader's Perspective on a Disruptive Product. *Change*, 32(6), 20-27.  
The Internet and other new-media technologies have the potential to alter distance learning (DL) into a force that could transform the face of higher education. One of the vital steps in such an exercise is to imagine the possible effects of Internet-Mediated DL (IMDL) and other new media on one's own educational markets and internal organization. IMDL delivers several new benefits not seen in traditional classroom teaching, including convenience, scalability, global access, and lower cost

structure. On the other hand, by eliminating restrictions on the number of students who can be taught by a top institution or a star professor at any one time, IMDL has the potential to exacerbate massively the winner-takes-all tendencies of higher education, thus becoming a very disruptive product for all but the top-ranking institutions.

Arnault, Gordon. (1994). *Classrooms on the Line: Teleconferencing Technology is Making it Possible to Reach Far Beyond the Classroom to a Wider Constituency. University Manager, 3(1), 11.*

Askov, E., & Simpson, M. (2001). *Researching Distance Education: Penn State's Online Adult Education MEd Degree on the World Campus*. U.S.; Pennsylvania: The possibility of creating an appropriate online learning environment for distance adult students was examined in a study of 22 Pennsylvania State University (Penn State) students' attitudes regarding the online version of a course offered as part of Penn State's masters of education program. The students completed surveys before, during, and after the course. The survey questions focused on technology use, the learning process, the course's structure and content, and students' opinions regarding how well they had met the course objectives. In addition, 16 paired responses from the pre-course and post-course surveys were analyzed using the Wilcoxon matched-pairs signed ranks test. Most students rated their mastery of course objectives very highly. Eighty percent of the students interacted with other students between four and five times each week. Sixty percent stated that they interacted with the instructor "very often or always." As the course progressed, students reported significantly more expertise in computer use and less apprehension about using the Internet for the class. Students stated that the course's greatest strengths were the course instructors and the guidance and support provided. The surveys also established that the learning environment created made good matches to the learning principles that had guided the delivery design.

Aspden, L., & Helm, P. (2004). *Making the Connection in a Blended Learning Environment* Francis Group Journals.

The presence of a virtual learning environment (VLE) in an on-campus setting can alter the dimensions of existing learning and teaching relationships. Research literature indicates that increased engagement with educational technology can have the effect of drawing staff and students closer together (both physically and virtually) rather than encouraging campus-based institutions to deliver more of their provision at a distance. This paper will explore how on-campus students can benefit from appropriate use of technology in ways that make them feel increasingly connected with their institution and their peers. Using qualitative data we explore how effective use of technology can help to bridge the physical gap between the students, their institution and their peers--even where the actual interactions between students take place offline--and how the combination of physical and virtual learning environments can be used to create an effective learning and teaching experience.

Atan, H., Sulaiman, F., & Rahman, Z. A. (2002). Gender Differences in Availability, Internet Access and Rate of Usage of Computers Among Distance Education learners. *Educational Media International*, 39(3/4), 205-210.

A study investigated gender differences in computer availability, Internet accessibility, and usage of computers among distance education students. Participants were 315 first-, second-, and third-year distance education students enrolled in a distance education program in Malaysia for the 2001-2002 academic year. Findings revealed the important role played by distance education in decreasing the gender gap with regard to availability of computers and access to the Internet. There was equal access to and use of computers among both male and female participants of this study. Further findings of the study are discussed.

Ausburn, L. J. (2004). *Course Design Elements Most Valued by Adult Learners in Blended On-line Education Environments: An American Perspective* Francis Group Journals.

This research describes course design elements most valued by adult learners in blended learning environments that combine face-to-face contact with Web-based learning. It identifies the online course features and the instructional design goals selected as most important by a sample of 67 adults and compares the group rankings with those of various sub-groups based on gender, pre-course technology and self-direction skills and experiences, and preferred learning strategies as measured by assessing the Learning Strategies of Adults (ATLAS). The results of the study support the principles of adult learning, indicating that adults value course designs containing options, personalization, self-direction, variety, and a learning community. Findings also identify some differences in learning emphasis by gender, preferred learning strategies, and previous experience with technology and self-directed learning. Implications of these findings for higher education in serving adult learners are discussed.

Babenko-Mould, Y., Andrusyszyn, M., & Goldenberg, D. (2004). Effects of Computer-based Clinical Conferencing on Nursing Students' Self-efficacy. *Journal of Nursing Education*, 43(4), 149-155.

A pre-test-post-test, quasi-experimental, control group design and Bandura's theory of self-efficacy were used to examine the influence of computer conferencing on fourth-year baccalaureate nursing students' self-efficacy for professional nursing competencies and computer-mediated learning (CML) during a final clinical practicum. Descriptive analysis was also used to explore themes regarding strengths and challenges of online learning. The convenience sample included 42 direct-entry students (control group: n = 27; online intervention: n = 15). Within both groups, there was a significant difference in self-efficacy for nursing competencies from pre-test to post-test. However, between-group post-test scores were not significantly different. Computer conferencing enhanced learning, and students' self-efficacy for CML increased at post-test. Strengths of CML included connection, support, learning and sharing. Challenges involved time and Internet access. Insights gained may assist educators in curriculum development when considering how CML strategies support clinical courses and strengthen learning communities.

Baron, J., & Crooks, S. M. (2005). Academic Integrity in Web based Distance Education. *TechTrends Linking Research and Practice to Improve Learning*, 49(2), 40-45.

This paper reviews the literature relative to academic dishonesty in WBDE settings assuming the average class size to be 30-50 students with the instructor filling the role of facilitator, concept expert, grader and mentor when necessary. It shows that some common stereotypes about academic integrity and WBDE are unsubstantiated. In addition, it presents a number of methods that distance educators can use to further protect against cheating in WBDE settings. While these methods were derived assuming a relatively small class size, such safeguards can be just as easily implemented into larger course section(s) complete with 100 or more students at both the undergraduate and graduate levels.

Bata-Jones, B., & Avery, M. D. (2004). Teaching Pharmacology to Graduate Nursing Students: Evaluation and Comparison of Web-based and Face-to-face Methods. *Journal of Nursing Education*, 43(4), 185-189.

As nursing schools develop Web-based courses to increase access to programs, evaluation of all aspects of these courses, from student learning to effectiveness of the course and instructor, becomes important. This article describes the evaluation of a 3-credit, semester-based, online graduate pharmacology course, and compares these student outcomes with those in the face-to-face course taught simultaneously. Eighteen students chose to participate in the Web-based course, and 52 chose to participate in the face-to-face course. The same instructor taught both courses, and the same examinations were administered. Students in the two courses were not different in age or in number of years of nursing practice prior to taking the course. There was no association between the course chosen and the type of basic nursing preparation or if the student had taken pharmacology course in their basic nursing program. There were no significant differences between the mean examination scores of students enrolled in the two courses. Overall, students in the online course were positive about their experience. Student comments highlight the need to be aware of effectiveness of communication among faculty and students, the clarity of instructions, and the amount of information provided on course Web sites.

Batte, M. T., Forster, D. L., & Larson, D. W. (2003). An Assessment of Student Acceptance and Performance in Distance Education with Two-way Interactive Compressed Video. *Review of Agricultural Economics*, 25(2), 524-39.

This paper summarizes the debate concerning the value of distance education, reports distance education experiences in agricultural economics courses at The Ohio State University, and analyzes the effects of "distance" on student performance in and acceptance of the distance course. Results suggest that distance and "live" students performed equally in the same course, and they evaluated the course experience in a similar manner. These results provide some assurance that distance education, at least using the two-way interactive synchronous learning model of the courses in this study, does not place the distant student in jeopardy.

Baxter, J. T., & Miller, M. T. (1998). *Graduate Education on the Internet: An issue of Quality and Accessibility*. U.S., Georgia.

This study examined faculty perceptions of accessibility and quality of graduate programs offered via the Internet. A total of 25 faculty (38 percent return rate) with experience teaching graduate courses via the Internet completed an e-mailed survey. It was found that half of the respondents had less than one year of experience teaching graduate courses using the Internet, and that nearly all also taught college courses in a traditional classroom setting. The largest groups of respondents taught graduate courses in education (32 percent), communications (20 percent), and the liberal arts or humanities (16 percent). Over two-thirds of the respondents reported that they were satisfied with their preparation time and efforts in teaching via the Internet. Respondents indicated that course or program administration was the most important environmental factor when considering course quality and accessibility. A high level of satisfaction was reported by most of the respondents in regard to the quality of the courses taught via the Internet.

Beaumont, J. (2003). The Ball's Rolling But It Needs a Little Push. *The Times Higher Education Supplement*, (1589), viii.

Although e-learning is not a panacea for all unsatisfied educational needs, it can transform postsecondary education delivery in the medium term and enhance access, lower costs, and improve quality. Educators must make the learning experience student-centric, ensure e-learning does not provide a second-best learning experience, and improve quality management.

Belcheir, M. J., & Cucek, M. (2001). *Student Perceptions of Their Distance Education Courses. Research report 2001-04 No. BSURR200104*. U.S., Idaho.

This study sought to learn more about students who enrol in distance education classes at Boise State University, their satisfaction with distance education classes, perceived access to support services, and differences in their classroom behaviour in distance education and traditional face-to-face classes. These questions were addressed through a survey of students enrolled in distance education in spring 2001. About 35% of Boise State distance education students responded to the survey (n=379). A majority were enrolled in Internet courses, but other delivery methods included one- or two-way audio or video that allowed interaction, videotapes or television instruction, and direct instruction in off-campus classrooms. The main reason for taking distance education courses was that the time was flexible and convenient. Another reason was the difficulty respondents had in getting to the campus. About 30% were taking distance education courses because they liked the technology. Slightly more than half indicated that in the absence of the distance education option, they would take the course at some other institution or not at all. Students were generally satisfied with their distance education courses, with interaction with other students and the instructor being the areas of least satisfaction. They reported that their course-related behaviours were similar in distance education and traditional classes. Students identified delivery method and lack of interaction as the biggest barriers to distance education. These findings, from a student perspective, suggest that distance education is convenient and satisfactory.

- Berg, G. A. (2002). The Big Questions. *International Journal on E-Learning*, 1(2), 5-6.  
Both higher education and K-12 education face issues concerning the use of technology. Both sectors are concerned about investment of revenue, social access, faculty adoption, and the lack of high-quality educational software. However, K-12 education focuses on the effect of technology use on student learning whereas higher education puts the emphasis on political issues related to commercialization and the changing role of faculty. Higher education needs to expand the discussion to investigate the impact of technology use on student learning.
- Bernt, F. M., & Bugbee, A. C. J. (1990). *Study Practices of Adult Learners in Distance Education: Frequency of Use and Effectiveness*. U.S.; Pennsylvania:  
A survey of study behaviours was mailed to 300 adult students enrolled in two distance learning programs of The American College. The sample included three groups: high passers, low passers, and failers. The survey instrument was a 50-item rating scale measuring study practices in six areas: elaborative processing, information processing, attitude management, executive monitoring, effortfulness, and strategic test-taking. The overall return rate for the questionnaire was 66 percent. A discriminant analysis indicated that both high and low passing groups differed from the failing group on all six study dimensions, but that the executive monitoring and strategic test-taking scales were the strongest predictors of group membership. Specific study practices most frequently used by all three groups included using practice tests for review, intensive studying the night before the exam, underlining important material, and relating reading material to one's own experience. Fewer than 20 percent of each group reported using charts or outlines to summarize material, writing out a study schedule prior to beginning a course, and over learning course material. Specific skills used by only the high-achieving group included skimming the text, reading all of the assigned study material, mental rehearsal, and over learning.
- Bird, J., & Morgan, C. (2003). Adults contemplating university study at a distance: Issues, themes and concerns. *International Review of Research in Open and Distance Learning*, 4(1)  
On-campus and distance adult learners (n=20) related the experience of their enrolment decisions, uncovering six themes: fears, motivation, family support, academic preparedness, suitability of programs, and identity change. Motivation was the key to persistence. Pre-entry information, guidance, and preparation for prospective adult open and distance learners could assist informed enrolment decisions.
- Braman, S. (2004). Who are all these people, and what are they doing in my classroom? *Educause Review*, 39(4), 10-11.  
The writer discusses the potential problems associated with the presence in an online classroom of individuals who are not students, are not involved with instruction, and are not guests invited for specific purposes. Two potential problems relate to the invasion of privacy and the chilling of classroom debate. Solutions include placing contractual limitations on access and use, placing technical limitations on access and

use, requiring privacy and confidentiality training, providing segregated access to software for training purposes, and implementing access processes that include the instructor.

Breen, R., Lindsay, R., Jenkins, A., & Smith, P. (2001). The role of information and communication technologies in a university learning environment. *Studies in Higher Education, 26*(1), 95-114.

Investigated in three studies how undergraduates use and think about information and communication technologies. Data from questionnaires, computer diary records, and focus groups indicated that students would support policies encouraging them to purchase their own personal computer, but that universities should work to control costs, provide technical support, facilitate compatibility, and formalize expectations about computer use in courses.

Brent, B. O. (1999). Distance education: Implications for equity and cost-effectiveness in the allocation and use of educational resources. *Journal of Education Finance, 25*(2), 229-54.

Britton, Mg., McLeod, R.D., Tregobov, A (1997). Distance learning: Interactive learning in engineering using broadband networks and the internet. *Journal of Distance Education, 12*(1/2), 243.

Burford, V. N., & Gross, D. D. (2000). *Caring on-line: On-line empathy, self-disclosure, emotional expression, and nurturing*. U.S.; Montana:  
The purpose of this study was to analyze, categorize, and critique actual responses to expressed student confusion and frustration with online courses. Samplings of actual student messages from two courses were used to frame instructor responses, as well as a focus group survey of current college students. The focus of the study was the instructor's responses to these student messages. The researchers utilized a narrative perspective for categorizing the instructor's responses. This approach allowed for a broad perspective for categorizing and critiquing the rhetorical prudence of the instructor's responses. The researchers added to the credibility of the categories of responses by asking non-class members what they thought of the instructor's responses. Finally, suggestions for communicating instructor care and concern online are included. Contains 10 references. An appendix contains the survey for the focus group.

Burg, J., & Cleland, B. (2001). *Computer-enhanced or computer-enchanted? The magic and mischief of learning with computers*. U.S.; North Carolina:

This paper reports on recent research in human-computer interactions, gives examples of some of the most promising uses of educational technology, and categorizes the effective and ineffective applications. The purpose of this paper is to provoke discussion about the problems and the potential benefits of computer use among young people. With a focus on the elements of audience, interactivity, and creative integration, the paper discusses the educational possibilities offered uniquely by the computer, arguing that the computer's greatest potential--its ability

to draw out students' creativity--is being neglected. The discussion begins by acknowledging the down-side to computer-enhanced learning. The purpose is not to argue for the abandonment of educational technology, but to encourage a more tempered view. The next section proposes types of computer activities that may be particularly valuable for college-level students. Examples of promising educational technology applications are given, and the development of some original material relating to this topic is described. The paper concludes with some personal reflections from a parent's perspective.

Burgstahler, S. (2005). Steps toward making distance learning accessible to students and instructors with disabilities [computer file]. *Information Technology and Disabilities, 11*(1), 1.

The writers discuss the University of Washington (UW) Distance Learning Accessibility Project, which is designed to identify and implement systemic changes in policies and procedures to improve the accessibility of the university's distance learning courses. They describe the scope of the project and examine its ongoing work. They also outline lessons learned through the UW Distance Learning Accessibility Project that have implications for other programs that seek to make their Internet-based courses accessible to all students and instructors.

Cain, D. L., & Lockee, B. (2002). *Student support services at a distance: Are institutions meeting the needs of distance learners?* U.S.; Georgia:

This literature review analyses the variety of necessary support services for distance learners and the relevance of such variables as it relates to their progress in and completion of distance-delivered programs. Non-academic variables for purposes of this review are defined as academic support, academic advising, library support, career advising, tutoring support, and mentoring support. Little data is available on the support needs of distance learners or the support services provided. There is a need to investigate Web-based academic support systems. If nothing else, distance education providers should insure that high quality services are being delivered to help distance learners achieve academically.

Cain, H. M., & Merrill, Z. (2001). Distance education for master's students with visual impairments: Technology and support. *Journal of Visual Impairment & Blindness, 95*(9), 572-575.

Master's degree students with visual impairments preferred alternative teleconferencing to the use of real-time Internet for the delivery of distance education courses, although most did not have to learn new assistive technologies to participate in the program. They thought that the program's faculty and staff were more accessible than other university personnel using e-mail and phone and that the program's web site was a good source of general information.

Calvert, J. (2005). Distance education at the crossroads. *Distance Education, 26*(2), 227-238.

A number of issues in contemporary distance education are reviewed from the perspectives of distance education as practice and as a field of study. In the practice

of distance education, government agendas are supplanted by institutional agendas, the clientele shifts from undergraduate second-chance learners to fee-paying postgraduates, and the models and methods are under challenge by the online revolution. As a soft-applied field of study, distance education research is susceptible to externally set agendas and prone to external criticism. Distance educators need to address these externally defined issues in terms that speak to its critics.

Cancilla, D. A. (2004). Initial design and development of an integrated laboratory network: A new approach for the use of instrumentation in the undergraduate curriculum. *Journal of Chemical Education*, 81(12), 1809-1813.

A campus-wide initiative to expand the use of scientific instrumentation across the undergraduate curriculum is described. The Integrated Laboratory Network (ILN) at Western Washington University in Bellingham, Washington, aims to provide access to instrumentation by removing the temporal and physical restrictions that are typically associated with limited access to scientific instrumentation. ILN uses a variety of Internet-based tools to allow instructors and students to more efficiently manage both classroom and laboratory activities through remote access to instrumentation, data, and supporting curricular materials. The different stages of the development of the ILN, the courses to which it has been applied, and a number of future hurdles that must be overcome before its full implementation are discussed.

Carlson, S. (2002). Wired to the hilt. *The Chronicle of Higher Education*, 48(29), A33-5. Saint Joseph's University in Philadelphia has staked its future on a \$30 million investment in electronic classrooms. Owen A. Mandeville Hall, a building stocked with technologically enhanced lecture halls and classrooms, is the centrepiece of the effort. Although such electronic classrooms are a terrific marketing tool and give instructors access to new materials and techniques, the technology can be a distraction and a burden.

Carnevale, D. (2005). Education department recommends scrapping limit on distance education. *The Chronicle of Higher Education*, 51(33), A36. A new report calls on Congress to relax rules limiting institutions' ability to provide distance-education programs. The report by the U.S. Department of Education contends that more students gain access to a college education as a result of online courses.

Carnevale, D. (2004). Many online courses work best at no distance at all. *The Chronicle of Higher Education*, 50(47), A22. Although an increasing number of colleges are offering courses online, many college services are more accessible on the campus. One result of this is that online courses have attracted many on-campus students who like the flexibility of not having to attend their classes at a set time.

Carr, S. (2000). A new web site aims to direct students to online courses, but price is steep. *The Chronicle of Higher Education*, 46(18), A54.

The founders of a new Web site that will direct students to online courses hope it will become a major portal, listing distance education offerings from thousands of colleges and universities. The service will cost students 15 to 20 percent more if they register through the site than they would pay by registering directly with the institutions offering the courses.

Carriuolo, N. (2002). The non-traditional undergraduate and distance learning. *Change*, 34(6), 56-61.

The writer argues that distance learning is not an alternative to traditional university education. The academic community at large offers the student peers, professors, and vital socialization opportunities that most distance education lacks. Although earning an undergraduate degree at a virtual university is preferable to earning no degree, non-traditional undergraduates studying online programs may not enjoy the same social and economic access as they might have gained from traditional undergraduate experiences. Distance education offers a keyhole for low-income, working students of both genders, through which only the smartest and most dogged will squeeze through into higher economic and social levels.

Cartwright, H. M., & Valentine, K. (2002). A spectrometer in the bedroom--the development and potential of internet-based experiments. *Computers & Education*, 38(1/3), 53-64.

The transformation of the World Wide Web from a tool providing access to a large database into one through which millions of users can view huge volumes of information has been rapid. The changes have been catalyzed by recognition of the value of the web as a source of information, and by the increasing ease and decreasing cost of accessing it. Growth has been further encouraged by expansion in the facilities bundled into web browsers, allowing display of pages which include not only graphics and interactive forms, but animations, embedded Java applets, push technology, and secure encryption. While simple widgets such as forms or tick boxes are limited in the detail that they can capture, more flexible means of interaction are opening up new opportunities for Internet use. Users are increasingly able to dial into web sites which connect them to interactive equipment and offer the chance to conduct remote experiments. This paper considers the role of on-line experiments, the challenges that must be overcome in placing experiments on-line, and how such experiments might develop in the future. We argue that on-line experiments offer benefits in a variety of areas, including enhancement of distance learning, expansion of practical course curricula, engagement of students in science, and lowered cost.

Caverly, D. C., & MacDonald, L. (2002). Techtalk: Access to distance education. *Journal of Developmental Education*, 26(1), 38-39.

The writers discuss developmental students' access to distance education. Access to technology is frequently defined in terms of what students do not have, and it is clear that a digital divide exists in which a disproportionate number of minority, lower income, first-generation, and older students do not have online access. However, access can also be defined by what is available, for instance assistive technologies

for those with cognitive or physical disabilities, and by the speed of Internet connections. As "ubiquitous" computers emerge, access to distance education for developmental students will improve and the digital divide will be narrowed.

Chisholm, I. M., Carey, J., & Hernandez, A. (1999). *Access and utilization of computer technology by minority university students*. U.S.; Arizona:

Universities assume that entering students possess computer skills and literacy and then expect students to utilize these assumed skills by offering computer-based instruction, requiring research using the World Wide Web, offering online courses, and integrating computer usage into many courses. Universities seldom stop to determine if required competencies exist uniformly across all students. Literature has shown that computer access and integration of computers into curricula have been significantly lower in student populations from ethnic minorities in K-12 public schools. This study looks at access and utilization issues of students at an urban university across students of many different ethnicities to determine if discrepancies persist at the university level. Findings in the following areas are discussed: computer skills and training; computer access--hardware; computer access--software; computer access--Internet/e-mail; current computer use; classroom computer use; and computer perspectives. Based on the findings, several changes are recommended that will expand computer ownership, training, support, and modelling of professional use of computers.

Chisholm, I. M., Irwin, L., & Carey, J. M. (1998). *An international comparison of computer perceptions, attitudes and access*. U.S.; Arizona:

This study examined cross-cultural technology training and education. A four-part questionnaire addressed computer training preferences, computer attitudes and perceptions, and computer access among Chinese, Ghanaian, and American students in college business and education classes. The differences in computer ownership among students reflected economic realities. The majority of the American students have computers at home; the few Chinese and Ghanaian students who own a computer are likely to be children of university professors and to live at home. The willingness of Chinese and Ghanaian students to share a computer has economic and cultural roots; 42.3% of the Chinese and 31.3% of the Ghanaian students preferred to share the computer while working in the university labs. Only 7.1% of the American students preferred to share a computer. The use of DOS versus Windows--the majority of the Chinese students used DOS without Windows--indicates that the power and relative state-of-the-art of Chinese computers is significantly lower than in the United States. In terms of attitudinal differences, the Chinese and Ghanaians feel as positive towards computers as American students, though they have less access to computers. Findings suggest that access and competency are closely linked, and that while the attitudes of Chinese and Ghanaian students are positive towards computers, they have little experience and competence in using them.

Cirasa-Parish, A. M. (1993). *Shaping graduate education's future: Implications of demographic shifts for the twenty-first century. Demographic trends and innovations in graduate education*. U.S.; Massachusetts:

In response to demographic changes and their impact on graduate higher education enrolment, universities are looking at innovative methods to increase enrolment, revise programs of study and improve instructional delivery systems. Institutions are attracting older adult students by altering admission policies, establishing adult student services offices, and offering course schedules that meet this population's need for flexibility. Executive education courses are one example of a service developed by institutions for a different population: managers and executives. Harvard Business School's Owner/President Management Program consists of three, 3-week sessions over 3 years. The demand for custom executive programs is rapidly growing. Graduate certificate programs are other educational program alternatives which focus on areas of specialized knowledge and are completed on a part-time basis. Distance education also serves the needs of diverse populations and utilizes the growth and sophistication of telecommunications technology. One example of world-wide distance education is the National Technological University which consist of a consortium of 29 universities and has developed a Management of Technology graduate program targeted at working professionals in industry with undergraduate technical degrees. Figures show estimated trends in master's and doctoral degree starts and completions from 1980 through about 2005.

Cofield, J. L. (2002). *An assessment of streaming video in web-based instruction*. U.S.; Alabama:

Streaming video used as an augmentation in Web-based instruction was investigated to: (1) determine if demographic characteristics would lead to significantly different beliefs about the use and perceived effectiveness of streaming video, and (2) whether or not there are characteristics of streaming video that would lead to beliefs about the effectiveness of streaming video that would lead to beliefs about the effectiveness of streaming video when used as an augmentation to a text and still image-based Web-based tutorial. College students (n=69) received a Web-based database tutorial that was either text with still images only or one augmented with streaming video clips. All participants took an online pre-test/post-test, and participants viewing the streaming video also took an online survey to gauge beliefs. Five participants were interviewed to explore their beliefs and attitudes further. Demographic characteristics measured were gender, age range, academic college, undergraduate/graduate status, Internet access location (home or campus computer lab), and prior experience with the World Wide Web. Age range, academic college, undergraduate/graduate status, and Internet access location results in significant chi-square differences on certain beliefs about streaming video relating to learning and attention holding. Significant correlations were found between age range, undergraduate/graduate status, Web experience level, and beliefs about learning, attention holding, and problems with streaming video in a Web-based instructional environment. Phenomenological analysis of the interviews revealed a number of themes. The first was that subjects felt that streaming video clips acted as a learning reinforcement. Subjects also believed that the clips helped hold their attention and fit their learning styles. The streaming video helped create a feeling of the presence of the instructor. The size and appearance of the clips did not seem to affect beliefs or attitudes toward the clips. An appendix contains the study survey.

Coleman-Ferrell, T. L., & Bryan, V. C. (2002). Distance learning and the millennium {i.e. millennium} employee. *Journal of Interactive Instruction Development*, 15(2), 22-27.

A study examined distance learning and its impact on industry training. Findings revealed that in order for the learner to perform efficiently and effectively in class and on the job, self-directed readiness, computer access, socioeconomic status, and training in the use of Web tools must be taken into consideration.

Craig, D. V. (2001). View from an electronic learning environment: Perceptions and patterns among students in an online graduate education course. *Journal of Educational Technology Systems*, 30(2), 197-219.

The study examined perceptions and patterns of technology use among graduate students enrolled in an online education course. Eight participant profiles and case studies--consisting of subjects currently teaching in a public school environment and also enrolled in a Master's program; subjects employed as public school substitute teachers and also enrolled in a non-degree teacher licensure program, and one non-employed graduate students--were examined and analyzed. A qualitative approach to research was implemented using the constant comparative method of data analysis. Data in the form of participant observer field notes, sample products completed by participants, online Discussion Board postings, research papers, participant presentations, onsite discussions, generated reports regarding online course access patterns, and information gleaned from a summative Online Course Evaluation Survey revealed specific patterns of technology use, learning preferences, and benefits on an online university environment. Results from the study indicate that students preferred to work at specific hours of the day, engaged in research-supported online discussions with a high rate of activity, and preferred to complete Internet-based research assignments. Additional findings show that by participating in an online graduate level course--which required frequent action research, inquiry-based projects--participants were able to connect typical education content with relevant classroom experiences. In addition, those participants, who at the time of the study were employed as public school teachers, were able to successfully incorporate teleresearch into their own classroom teaching.

Curry, D. D. (2002). A fish out of water: My entree into electronic learning. *School Administrator*, 59(8), 58-59.

The writer, a superintendent of schools, discusses his experience of online learning. He discusses his enrolment in an online class dealing with the diversity of fishes and describes access to and materials for the class. He outlines the benefits of the class but says that nothing compares to the stimulating environment of a skilled teacher and interested students in one room.

Dallet, P., & Opper, J. H. (1997). Reducing time-to-degree with distance learning: Are we closer now than when we started? *New Directions for Community Colleges*, 25(3), 43-51.

Describes the Improving Access Through Technology (IATT) project conducted by the Florida Postsecondary Planning Commission which attempts to use technology

to increase student access to courses, thereby decreasing time to degree. Identifies student difficulty with math and science courses as a primary cause of lengthening time to degree.

Daughenbaugh, R., Ensminger, D., Frederick, L., & Surry, D. (2002). *Does personality type effect online versus in-class course satisfaction?* U.S.; Alabama:

This study sought to determine if different personality types express more or less satisfaction with courses delivered online versus those delivered in the classroom. The methodology employed two online surveys--the Keirsey Temperament Sorter (KTS) and a course satisfaction instrument. The participants were 146 college students taking online and in-class courses in the College of Education at the University of South Alabama. The four hypotheses were that Introvert, Intuition, Thinking, and Perceiving personalities express greater satisfaction than Extrovert, Sensing, Feeling, and Judging personalities. Both descriptive and inferential statistics were used in the study.

de Freitas, S., & Oliver, M. (2005). Does E-learning policy drive change in higher education?: A case study relating models of organisational change to E-learning implementation. *Journal of Higher Education Policy and Management*, 27(1), 81-95.

Due to the heightened competition introduced by the potential global market and the need for structural changes within organisations delivering e-content, e-learning policy is beginning to take on a more significant role within the context of educational policy per se. For this reason, it is becoming increasingly important to establish what effect such policies have and how they are achieved. This paper addresses this question, illustrating five ways in which change is understood (Fordist, evolutionary, ecological, community of practice and discourse-oriented) and then using this range of perspectives to explore how e-learning policy drives change (both organisational and pedagogic) within a selected higher education institution. The implications of this case are then discussed, and both methodological and pragmatic conclusions are drawn, considering the relative insights offered by the models and ways in which change around e-learning might be supported or promoted.

DeLoughry, T. J. (1989). Professors are urged to devise strategies to help students deal with 'information explosion' spurred by technology. *Chronicle of Higher Education*, 35(26), A13, 15.

A conference on "Teaching and Technology" held near Earlham College is discussed. The changes that colleges must make to help students take advantage of the "information explosion" were examined. Access to information, it is suggested, would interest students in seeking bridges between disciplines.

DeLoughry, T. J. (1988). Remote instruction using computers found as effective as classroom sessions. *Chronicle of Higher Education*, 34(32), A15, 21.

Researchers evaluating several courses taught online found that the instruction can be as effective as traditional classroom instruction and improves students'

perceptions of educational quality, access to education, involvement in the classes, and access to professors.

- Diaz, D. P., & Cartnal, R. B. (1999). Students' learning styles in two classes: Online distance learning and equivalent on-campus. *College Teaching*, 47(4), 130-135. This study compared social learning styles of distance education students (N=40) and equivalent on-campus students (N=63) in health education classes. Comparison on the Grasha-Reichmann Student Learning Style Scales found distance students favoured independent learning styles whereas students in the on-campus class were significantly more dependent and collaborative in learning style. Implications for course design are drawn.
- Dillon, C., & Cintron, R. (1997). Distance education and the community colleges: From convention to vision. *New Directions for Community Colleges*, 25(3), 93-102. Reviews the literature related to distance education under three thematic areas: learners and learning, teachers and teaching, and mission and boundaries. Suggests that, as distance education becomes more central to the community college, educational focus will shift from teaching to learning.
- Dirr, P. J. (1985). Come home to college. *Innovative Higher Education*, 9(2), 92-98. Adults have increasing flexibility in taking advantage of college courses in their homes, since most U.S. public television stations broadcast television courses each semester. Most of the students for television courses are older than traditional college students, female, and employed.
- Donahoe, S. S. (1995). *Using distance learning and telecommunications to develop strategies of communication for widely diverse populations*. U.S.; Washington: This review of literature and programs looks at a number of reports on distance learning and related issues. Specific topics covered include: distance learning and rural learning communities, serving diverse student populations, broadening the community of learners, broadening the curriculum through technology and through integration, communication technology, and interactive distance learning and teacher training. Through the use of modern technology, students develop interpersonal skills and effective communication techniques for more widely diverse populations than would be possible without the technology. Two groups--young, college students in university settings and multi-aged, diverse students in rural/remote locations in Washington State--participated in an experiment to increase positive attitudes toward diversity of all kinds, to replace negative attitudes, and to fill the gap created by lack of experience or insufficient knowledge. Students profited in observable ways and in more subtle, intrinsic ways by the distance learning experience, learning to dissipate strong, unproductive, biased negative emotions that interfered with performance in an educational setting by replacing them with proactive processes of communication, metacognition, and interpersonal skills. Students in the distance learning classroom had very different attitudes toward the issue of whether to censor examples of the full range genres of children's literature, and the two groups brought a wide range of experiences to back up their rationales. Also, all groups had the comfort,

reassurance, and at times parental responsibility of being in their normal education and home environments in their own respective localities. All students were better able to give full attention to the issues in the class. Based on the investigations, the paper indicates that this technologic, communicative process results in enhanced human development for all of the students it contacts.

Dooley, K. E., Edmundson, C., & Hobaugh, C. (1997). *Instructional design: A critical ingredient in the distance education soup*. U.S.; Texas:

Instructional design is a critical factor in a successful distance education environment. An efficient design analyzes audience and needs, creates learning goals/objectives, develops materials, methods and media for content delivery, and plans for evaluation and feedback. Design implementation requires certain instructional criteria: (1) competent, skilled faculty; (2) meaningful interaction among instructors, staff, and students; (3) well-organized and accessible support materials; (4) effective collaboration among instructors, program planners, and instructional designers; (5) multimedia integration with lessons; and (6) instructor responsiveness to student needs. Through question/answer strategies, group work, familiarity with the technological environment, and portfolio assessment, a design can combine content, interaction, and student evaluation, effectively achieving the educational goals of distance learning.

Downing, K., & Chim, T. M. (2004). Reflectors as online extraverts? *Educational Studies*, 30(3), 265-276.

Increasingly, online learning is perceived as an effective method of instruction. Much recent educational research has focused on examining the purposes and situations for which online education is best suited. In this paper, students enrolled in two online courses are compared with their peers enrolled in equivalent classroom-based courses to investigate aspects of the relationship between learning style and mode of delivery. Student satisfaction measures are taken from participants in both modes of delivery and compared with student learning style. Feedback from the 'Reflector' learning style demonstrates higher satisfaction levels with the online mode of delivery compared with their matched counterparts following equivalent classroom-based courses. Therefore, whilst 'Reflectors' might be regarded as Introverts in the traditional classroom setting, the additional time for reflection offered by online delivery makes this group more likely to contribute to online discussion, report higher satisfaction levels and generally behave more like online Extraverts.

Drennan, J., Pisarski, A., & Kennedy, J. (2005). Factors affecting student attitudes toward flexible online learning in management education. *The Journal of Educational Research* (Washington, D.C.), 98(6), 331-338.

In response to recent technological advances and the trend toward flexible learning in education, the authors examined the factors affecting student satisfaction with flexible online learning. The authors identified 2 key student attributes of student satisfaction: (a) positive perceptions of technology in terms of ease of access and use of online flexible learning material and (b) autonomous and innovative learning

styles. The authors derived measures of perceptions of technology from research on the Technology Acceptance Model and used locus of control and innovative attitude as indicators of an autonomous and innovative learning mode. First-year students undertaking an introductory management course completed surveys at the beginning (n = 248) and at the end (n = 256) of course work. The authors analyzed the data by using structural equation modelling. Results suggest that student satisfaction is influenced by positive perceptions toward technology and an autonomous learning mode.

Eastmond, D. V. (2000). Enabling student accomplishment online: An overview of factors for success in web-based distance education. *Journal of Educational Computing Research*, 23(4), 343-358.

Student success in Web-based degree programs depends on an individual's course learning experience as well as the academic and administrative services provided by a virtual institution throughout the degree. This article explains essential factors found in recent research for online student accomplishment and how these can be facilitated in the course level through instructional design, teaching, and technical assistance. Then it examines academic and administrative services at the institutional level. Online academic services include counselling and advising, prior learning assessment, discussion support, career facilities, and access to academic resources such as libraries and bookstores. Online administrative services include admissions, enrolment and registration, assistance service, financial aid, and records. Factors at both levels are explained with examples provided from several institutions offering online distance education.

Edmonds, C. D. (2004). Planning for accessibility and usability in E-learning. *Journal of Interactive Instruction Development*, 17(1), 16-22.

The writer provides advice to online course instructors on planning for accessibility and usability in e-learning. Instructors should take an inventory on course materials and content, build knowledge about making content accessible and usable by all students, and budget time to make accessibility corrections as needed. After implementing these steps, the next task for an educator is to review and evaluate his or her own work in making course materials accessible. In addition, when retrofitting a course, instructors should build individual knowledge about accessibility issues, identify the existing barriers in the course materials, and prioritize the barrier removal process.

Edmonds, C. D. (2004). Providing access to students with disabilities in online distance education: Legal and technical concerns for higher education. *American Journal of Distance Education*, 18(1), 51-62.

The writer examines legal and technical concerns for higher education relating to online distance education access for students with disabilities. He examines federal legislation, federal regulations, federal case law, and state law and institutional policy relating to access to online distance learning in higher education. He then considers technical considerations, addressing first- and second-generation access issues for faculty members.

- Edmonds, C. D., Allen, M., & Todd, R. (2005). Closing the circuit: Accessibility from the ground up [computer file]. *Information Technology and Disabilities, 11*(1), 1. As part of its efforts to promote accessibility and universal design in education, the Center for Assistive Technology and Environmental Access (CATEA) created an online learning object titled "Federal Court Concepts." The learning object, which can be utilized by all students, including those with disabilities, was developed through collaboration between two CATEA projects, both of which focus on accessibility of information technology in education. It was designed to implement CATEA research findings and to serve as a model of an accessible online learning object.
- Edwards, N., & Lockett, D. (2004). The prohibitive costs of accessing evidence online. *The Journal of Continuing Education in Nursing, 35*(2), 89-90. Delivering continuing education online involves making published materials available to learners. As part of a study that examined the use of the Internet for dissemination of information, permission to provide resources online was sought from 43 publishers, of whom 36 responded. Four (11.1[percent]) denied permission to copy their materials. Seven (19.4[percent]) granted permission to copy articles at no cost. The remaining 25 (69.4[percent]) granted permission for a fee, ranging from \$2 to \$410 per article. These findings highlight a need for more accessible and cost-effective online resources to meet the challenges of evidence-based programs and practice in public health.
- Ehrmann, S. C. (1990). *Reaching students, reaching resources: Using technologies to open the college*. U.S.; District of Columbia: A majority of today's college students face circumstances that make it difficult to study full time on campus. They are usually 25 years old or older and may have jobs, children, or impairments to their mobility that prevent them from attending college easily; however, there are ways in which colleges and universities can help these students by changing the uses of educational resources. For example: (1) direct instruction, usually conveyed by lectures and textbooks, may be in the form of correspondence materials and video, or telecourses; (2) live conversation with faculty and peers may take place through audio conferencing, involving only sound, or through audiographic conferencing where visuals may be added through a computer link; (3) other exchanges of ideas and materials with faculty and peers can take place over electronic mail, computer conferencing, fax machine, and voice mail; and (4) learning by doing can be emphasized through online library services, computer assisted design programs, word processors, statistical packages, and other technology-based resources. The evolving college is an institution that is more open to the outer world with shared resources and services, and promotes collaboration between faculty, students, and institutions.
- Eisenberg, D. (1998). Foreign language instruction through interactive television at northern Arizona University. *ADFL Bulletin, 29*(3), 20-23. Discussion of Northern Arizona University's experience with implementation of distance education for upper-level language courses looks at problems encountered

and solutions adopted in the areas of communication of assignments and exams, out-of-class interaction of teachers and students, classroom configuration, equipment reliability, scheduling, classroom logistics, and software. Student feedback and outcomes, and future directions are also examined.

El-Khawas, E. (1999). The "new" competition: Serving the learning society in an electronic age. *Higher Education Management*, 11(2), 7-17.  
Examines the changing environment for serving adult learners, with special attention to new modes of delivering instruction: distance education; use of information technology; emphasis on convenience; focus on special markets; and emergence of large-scale, profit-driven enterprises. Argues that, to develop an effective response, universities must understand key characteristics of the emerging competitive environment for lifelong learning.

Ellsworth, J., & Ellsworth, M. (2003). *Communications and web courses: Can we talk?* U.S.; Arizona:  
This paper explores some of the issues faced by college faculty in the development of Web courses. Communication patterns are different in Web courses, and the implication is that they are likely to be less satisfactory than in the traditional classroom. The experience of the authors' college of education has shown that increasing opportunities for communication in the traditional campus setting has not always moved smoothly; it is evident that cooperative learning approaches do not always please students. In the distance education setting, in which students may not participate unless they are truly engaged, in contrast to the traditional lecture, in which attention may wander, the opportunities for real communication may be great. Faculty members need to know more about teaching and learning from many perspectives, and then they need to consider whether Web courses really enhance or limit communications.

Farmer, K. (2001). Doors to opportunity: A virtual learning success. *Community College Journal*, 72(2), 34-39.  
Part of a special section on technology in community colleges. The Virtual Learning Community is a collaborative initiative that involves all 58 colleges in the North Carolina Community College System. The aim of the program is to offer quality online courses and support services to ensure that people have quick, easy access to the essential education and training that they need. By fall 2000, it had developed, tested, and put into the catalogue ten such courses, and by fall 2001, that number will top 60 and thousands of students will be enrolled. The North Carolina General Assembly has invested \$385,000 in the project and has reaped a number of benefits, including the courses themselves, shared resources, reduced costs, standard course authoring software, and state-wide commitment.

Feenberg, A. (1999). No frills in the virtual classroom. *Academe*, 85(5), 26-31.  
Part of a special issue on distance education and educational technology in colleges and universities. Online education and its benefits must be reconsidered by both promoters and opponents. Administrators and the business world should realize that

distance education systems based on video conferencing or CD-ROMs and star professors will not replace face-to-face classroom education, politicians should be realistic about the future costs of higher education, faculty members should have legitimate pedagogical objectives in mind as they consider specific designs, universities should retain interactive text-based systems and supplement them with visual and other online resources, universities should give serious thought to the implications of online education for student access to higher education, and faculty members should take responsibility for shaping online education and realize that systematic rejection of it will not solve the problem of de-professionalization of academia.

Finlay, W., Desmet, C., & Evans, L. (2004). *Is it the technology or the teacher? A comparison of online and traditional English composition classes*

Recent reviews of the literature on distance learning have reached two general conclusions. First, students are about as satisfied with the quality of their education in distance-learning (DL) classes as they are in traditional or face-to-face (FTF) classes. Second, students perform about as well in DL classes as they do in FTF classes. We examine this finding of "no significant difference" in a study of students at a public university in the Southeast who were enrolled in online and FTF versions of the same English Composition course. We looked at three student outcomes: satisfaction, learning, and participation in classroom discussion. We found that being in an online class had a positive effect on satisfaction and participation, but no effect on learning even when we controlled for instructor behaviours and classroom characteristics. We attribute the positive effect of being in an online class on student satisfaction--which directly contradicts the no-significant-difference assumption--to the way in which synchronous instruction mimics the traditional classroom. Our findings attest to the importance of both technology and instruction on student satisfaction, learning, and participation.

Florida State Board of Community Colleges, Tallahassee. (2000). *Distance learning in the community colleges: A look at the online and teleclass experience. A level 1 review*. U.S.; Florida:

This study was conducted to gather data about courses currently available to students through distance technologies, and to gather information from both faculty members and students concerning their perceptions of teaching and learning through remote processes in the Florida Community College System. This study focuses particularly on two-way interactive teleclasses and on-line courses with the overall goal of learning more about how many students participate, and how their instructors and they regard their learning experiences. The results of this study indicate that community college students appreciate the access and convenience of distance learning courses and are willing to adapt to and accommodate themselves to the technology. However, faculty who teach distance learning are ambivalent. They are struggling with the demands of teaching distance learning courses and are concerned about the challenges distance learning brings to the learning environment. Two ways in which the Florida Community College System has addressed quality concerns, as well as the Commission on Colleges Southern Association of Colleges and Schools'

criteria about offering appropriate support services for distance learners, have been through the development of the Florida Academic Counselling and Tracking System (FACTS) and through the Distance Library Learning Initiative. Appendices listing the available community college distance learning courses and the complete surveys used in the study constitute over half of the report.

Forinash, K., & Wisman, R. (2001). The viability of distance education science laboratories. *T.H.E. Journal*, 29(2), 38-45.

Distance education science laboratories can have considerable educational advantages. These laboratories can rely on the Internet as a collaborative tool and cooperation at distant sites and can allow for greater student access to equipment, reduce the importance of physical location and equipment costs, provide conveniently packaged materials, and allow student control of experiments. Examples of distance education laboratories are presented.

Fredrickson, S. (1990). *Audiographics for distance education: An alternative technology*. U.S.; Alaska:

Audiographics is the merging of microcomputer graphics, telephone communications systems, and teaching strategies into a cost effective method of delivering distance education classes. The teacher creates visual images that are sent to and stored on computers at the remote sites. At the appropriate time the teacher and the remote site assistants connect all of the sites via telephone lines, an audio-bridge, and modem, enabling the teacher and the students at all of the sites to interact with each other as they could in a traditional classroom. Video interaction occurs through the computers and audio interaction through speaker phones. The cost of each site is between \$3,000 and \$8,500, depending on the equipment chosen. This compares favourably with costs for communication satellites (\$15,000 to \$25,000), or for hiring teachers to teach at each site. Research has shown that the motivational levels, attitude levels, and the quality of the learning experience were all positively affected by audio graphics for both high school and college students. It is argued that audio graphics is the most cost-effective, efficient, and motivation-enhancing distance education system currently available; it can be used in rural and urban schools to reduce overall operating costs by combining small classes at different schools, to increase course offerings, and to reduce time for commuting teachers; and it can even be used with home-bound students, prison inmates, and "special case" non-attending students.

Fulton, K. (2001). From promise to practice: Enhancing student internet learning. *Multimedia Schools*, 8(2), 16-24.

The bipartisan, congressional Web-Based Education Commission has published a report that describes the way in which the Internet is being used to improve learning opportunities for students at all levels of education. The report considers the potential of the Internet to centre learning around the student rather than the classroom, to concentrate on the strengths and needs of individual learners, and to make lifelong learning a practical reality. In addition, the Commission identifies seven areas in which it believes that a strong need for action exists: broadband

access, professional development, research and development, quality of content, regulations and e-learning, privacy and protection, and funding. Each of these areas is discussed in detail.

Garman, J. F., Crider, D. A., & Teske, C. J. (1999). *Course selection determinants: A comparison of "distance learning" and "traditional" wellness and physical education programming*. U.S.; Pennsylvania:

This study compared reasons college students gave for choosing either "distance learning" or "traditional" courses in wellness and physical education. Students at Kutztown University of Pennsylvania, who were enrolled in either traditional (n=195) or distance learning (n=100) wellness and physical education curricula, anonymously completed a questionnaire designed to assess demographic variables and rank criteria considered in course selection. These criteria included two variables that addressed chronology; one variable that focused on curriculum concerns; three variables focusing on performance issues; six variables for instructional issues; and one variable that allowed identification of other considerations. Participants in traditional courses identified curriculum relatedness (class content) as the most important criterion, while subscribers to the distance learning format were primarily concerned with chronology (scheduling convenience). Among the younger traditional students, anecdotal responses suggested course selection was driven by a concern with expeditiously fulfilling university or curriculum requirements. Results suggest that courses available via distance learning are more attractive to older, non-traditional students.

Gilbert, W. A. (2000). Retention in distance education telecourses and perceptions of faculty contact: A comparison of traditional and non-traditional community college students. (Doctoral dissertation, Florida State University). , 216. (EDRS Price MF01/PC09 plus Postage.)

This is a study of the high dropout rate in distance education courses. Early studies of this phenomenon presumed that the majority of distance education students were non-traditional students. However, this study suggests that many traditional students now participate in distance education courses, and the author examined the problem within the context of this mixed student population. The three main purposes of the study were to: (1) determine whether differences in retention rates existed between the two types of students; (2) identify any interaction effects between selected variables and the type of student; and (3) attempt to identify any differences in perception in faculty contact between completers and non-completers. The study looked at the transcripts of all 296 students enrolled in telecourses during Tallahassee Community College's (Florida) fall semester. The author also examined 65 respondents who filled out an initial survey. These respondents were a subset of the 296 total students. Results indicated that of the students, 128 (43%) were traditional, while 168 (57%) were non-traditional. Of the traditional students, 55 were completers; of the non-traditional students, 83 were completers. The study also found that among the respondent group, the grade point average for non-traditional students was higher (2.8) than that of traditional students (2.3). Appended are the survey instruments, comparison tests, letters and forms.

Glenn, J. M. L. (2003). E-learning E-volution: Your (digital) future awaits. *Business Education Forum*, 57(4), 8-15.

E-learning offers opportunities for business educators at all levels to provide current, relevant courses in their discipline to those whose only option is to get those courses online. To develop a high quality course, instructors should use a "consortium" or team approach; rethink content, assessment, and evaluation; provide a variety of ways to access content; and be aware that the technology infrastructure affects how easy or cumbersome the course is to navigate. Moreover, they should bear in mind that the dropout rate in e-courses is affected by learner motivation and self-management skills, literacy levels, and the level of interactivity. Advice on incorporating e-learning into the curriculum is provided.

Gobbo, L. D., Nieckoski, M., & Rodman, R. (2004). Virtual limits: Multicultural dimensions of online education. *International Educator (Washington, D.C.)*, 13(3), 30-39.

A study investigated the interaction between an online component of an international distance education course and other aspects of the course. Data were obtained from students/participants and various international educational organizations involved in the course. Findings revealed some limitations of the online part of this course relating to learning theory, social interaction, and online education, access, and culture. Each of these limitations is discussed.

Goodwin, B. N., & Others. (1993). *Perceptions and attitudes of faculty and students in two distance learning modes of delivery: Online computer and telecourse*. U.S.; Florida:

A study was conducted to discover the perceptions and attitudes of students and faculty regarding their experiences with two distance learning programs, an online computer program and a telecourse program. The online program is conducted at the University of Phoenix (Arizona) and delivers degree programs in various areas. The telecourse program is conducted at Coastline Community College (California) and offers 25 telecourses each semester. In all, 628 students and 64 faculty members responded to the survey questions. Online participants lived in 40 of the 50 states, while telecourse participants all lived in southern California. Overall results suggest that both faculty and students thought highly of both programs as academic products. Both were considered comparable to traditional academic programs. Students who did not miss face-to-face interaction gave the online program a significantly higher rating than those who missed the traditional interaction. Students viewed the online program more favourably than did faculty, and the reverse was true of the telecourse. Results also suggest that students and faculty consider distance education a viable alternative to meet the changing educational needs of our society.

Gorsky, P., Caspi, A., & Tuvi-Arad, I. (2004). Use of instructional dialogue by university students in a distance education chemistry course. *Journal of Distance Education*, 19(1), 1.

A distance education system may be viewed in terms of intrapersonal and interpersonal instructional dialogues that mediate the learning and instructional

resources that enable such dialogues. Instructional resources include self-instruction texts, tutorial sessions, instructor availability, Web sites, and more. This study investigated the kinds of dialogues engaged in by Open University students and the kinds of resources they used while studying an intermediate-level chemistry course. Research objectives were to document (a) what study strategies if any, involving which resources and dialogues, were generally used by students; (b) what dialogue types, enabled through which resources, were specifically used by students to overcome conceptual difficulties; and (c) how the use of resources and dialogues in the chemistry course compared with students' experiences in other science courses. It was found that all students initially chose individual study characterized by intrapersonal dialogue. Only when individual study failed did students opt for interpersonal dialogue. Thus finding conflicts with the assumed importance often ascribed to interpersonal dialogue by some distance education theorists.

Grabe, M., & Sigler, E. (2002). Studying online: Evaluation of an online study environment. *Computers & Education*, 38(4), 375-383.

This study evaluates student use of an online study environment. Its purposes were to (1) determine if college students will voluntarily use online study tools, (2) identify characteristics of users and nonusers of the tools, and (3) determine if the use of online study tools relates to course achievement. Approximately 25[percent] of students used the online tools for more than one hour before each of three examinations. In comparing use of the study tools provided, the largest number of students made use of the online lecture notes and the greatest amount of online study time was devoted to reviewing multiple choice questions. The perceived ease of access to the Internet differentiated tool users from nonusers. Study tool users scored higher on course examinations after accounting for measures of ability and study skill.

Greenagel, F. L. (2002). *The illusion of e-learning: Why we are missing out on the promise of technology*. League white papers. U.S.; Arizona:

This paper argues that e-learning has not kept pace with the development of increasingly rich IP (Internet Protocol)-based delivery platforms for a number of reasons, including an apparent lack of awareness on the part of developers of the ways in which people learn, and an interest in keeping costs low, which precludes expenditures on effectiveness measures and development of new strategies for delivery. The author also argues that standards such as SCORM (Shareable Courseware Object Reference Model) and IMS (Instructional Management System) do not treat learning outcomes, but instead deal with tagging, coding, and indexing learning objects. This paper asks the question: Under what conditions does e-learning work? Dropout rates for e-learning are much higher (70%) than for standard instruction in four-year colleges (15%). The author contends that there can be no such thing as a generic e-learning model, but that the potential for developing models that are highly suitable for a wide variety of learners and objectives is there. The author uses Gardner's Multiple Intelligences to argue for the need to match technology to learning style. Some of the broad conclusions of Gardner's work indicate that only 30% of adults say they learn best by listening, while another 30%

prefer to read and reflect. The paper concludes that the outlook for e-learning is mixed.

Gurak, L. J., & Duin, A. H. (2004). The impact of the internet and digital technologies on teaching and research in technical communication. *Technical Communication Quarterly*, 13(2), 187-198.

Technical communication practices have been changed dramatically by the increasingly ubiquitous nature of digital technologies. Yet, while those who work in the profession have been living through this dramatic change, our academic discipline has been moving at a slower pace, at times appearing quite unsure about how to proceed. This article focuses on the following three areas of opportunity for change in our discipline in relation to digital technologies: access and expectations, scholarship and community building, and accountability and partnering.

Halsne, A. M. (2002). Online versus traditionally-delivered instruction: A descriptive study of learner characteristics in a community college setting. (Doctoral dissertation, Loyola University Chicago). , 228. (EDRS Price MF01/PC10 Plus Postage.)

This study compares the learning styles of community college students who have enrolled in an online course via the Internet with the learning styles of comparable community college students who are taking the same course on-campus in the community college setting. The students taking the online course were off-campus students. A sample consisting of 1,642 students who were enrolled in an online course or a traditional course that was also offered through the Internet at the community college during the spring 2001 semester was used for the study. There were 587 online students, of whom 340 completed the study, for a return rate of 57.9%, and 1,302 traditional students, with a return rate of 100%. Fourteen course titles with 22 different course numbers were included in the study, as well as 28 section numbers. The majority of online students were aged 26 or older, while the majority of the traditional students were under the age of 26. Findings from the study also indicate that 85% of the online students were white, versus 76% of traditional students. Family incomes were also higher for online students. The study concludes that the majority of online students have a visual learning style preference. Knowledge of learning styles may help target students who are at risk of dropping online courses. Survey instrument, permission letters, statistical frequency data tables, and cross tabulations of study findings are appended.

Hamilton-Pennell, C. (2002). Getting ahead by getting online. *Library Journal* (1976), 127(19), 32-35.

Librarians can pursue professional development goals through online distance education. Despite the problems associated with isolation and various technological difficulties, online learning can benefit students. One of the prime advantages of taking Web-based continuing education courses is the ability of students to access course materials at their convenience.

Harris, C. S., & Herring, T. (1999). Web-enabled systems for student access. *College and University*, 74(2), 2-12.

California State University, Fullerton is developing a suite of server-based, Web-enabled applications that distribute the functionality of its student information system software to external customers without modifying the mainframe applications or databases. The cost-effective, secure, and rapidly deployable business solution involves using the Internet and an information request broker to perform complex operations while leveraging legacy functionality.

Heath, B., Herman, R., & Lugo, G. (2005). Developing a mobile learning environment to support virtual education communities. *T.H.E. Journal*, 32(8), 33-4, 36-7.

The University of North Carolina at Wilmington is developing a mobile learning environment (MLE) that will create virtual learning communities (VLCs) that incorporate all of the positive aspects of traditional LCs, but without their time and space limitations. The university is only in the early stages of this multidisciplinary research project but has already designed and implemented a number of the basic elements of the MLE infrastructure and is engaged in an ongoing development effort. The design objectives being pursued in this effort to develop a seamless, integrated learning environment accessible by modern computing platforms are discussed.

Helmi, D. G., Haynes, G., & Maun, C. (2000). Internet teaching methods across the disciplines. *Journal of Applied Business Research*, 16(4), 1-14.

Issues in teaching various types of information through web-based instruction are explored. The questions of distinctions between content and process courses are evaluated. Some ways in which the resistance to web based learning as a medium of communication can be broken down are covered. Interdisciplinary thinking offers new solutions and hybrid approaches to emerging challenges of educating over the net. Pulling from the seemingly disparate fields of Accounting & Finance, Chemistry, and Rhetoric & Composition new vectors of thinking can be forged. The authors teach online courses in their disciplines. They have drawn on their experiences and the experiences of others to find solutions to problems encountered with distance education. The medium of education over the Internet blurs traditional distinctions of forms and methods of learning.

Hickman, C. J. (1999). Public policy: Implications associated with technology assisted distance learning. *Adult Learning*, 10(3), 17-20.

The writer discusses six themes concerning the role of public policy in technology-assisted distance learning. These themes are quality/evaluation and accreditation, credentialing, enhanced public access, organization and governance, partnerships, and state and federal financial support.

Hillesheim, G. (1998). Distance learning: Barriers and strategies for students and faculty. *Internet and Higher Education*, 1(1), 31-44.

Students and faculty in distance education programs encounter barriers to success that do not exist in traditional classrooms. This article explores student and faculty

barriers, compares the current literature on barriers to success with data gathered from an online master-of-science degree program offered by Walden University (Minneapolis, MN), and develops strategies for success using a case study.

Hinton, S., & Oleka, S. O. (1996). *College students' assessment of teaching by television*. U.S.; Kentucky:

This paper examines college student assessment of teaching by television at Eastern Kentucky University. Teaching by television in Kentucky is facilitated through the Kentucky Telelinking Network (KTLN). This state-wide, two-way compressed video system connects main campus and extended campus sites by digital land lines to a regional "hub." Students in extended campus sites can see and hear an instructor teaching from the main campus and be engaged in interactive discourse. Students in two different undergraduate courses were surveyed on their attitudes toward teaching by television at the middle of the semester and at the end of semester, at both the main and extended campus locations. Students responded to nine items pertaining to general information, attitudes towards KTLN classes, technical aspects of the interactive TV class, and logistical support. Mid-semester and end of semester results were compared. Responses relating to whether students learned as they would in a traditional class, and their confidence and comfort level with a KTLN class remained the same or increased for both classes, at the main and extended campus locations. In both classes, students' perceptions of the advantages of a KTLN class outweighing the disadvantages increased for the main campus site, but stayed the same for the extended campus location.

Hoffman, C. (2000). Learning on the information highway. *Appalachia*, 33(1), 8-13. In rural Alleghany County (North Carolina), one of the state's seven "cyber campuses" provides an expanded curriculum and advanced placement college courses to high school students and an array of community college and 4-year college courses to residents, who otherwise would be deterred from further education by their isolated location.

Home, A. M. (1998). Predicting role conflict, overload and contagion in adult women university students with families and jobs. *Adult Education Quarterly*, 48(2), 85-97. Data from 443 women combining work, family, and schooling showed that lower income increased their vulnerability to role conflict. Perceived intensity of student demands was the strongest predictor of role conflict, overload, and contagion (preoccupation with one role while performing another). Conflict and overload were eased somewhat by distance education.

Hudson, L. (2000). *Guess who's coming to college and taking courses via the World Wide Web?* U.S.; Florida:

This document consists of comments provided by 20 adult students taught on the World Wide Web by an associate professor from the University of Central Florida's College of Education. The following are among the benefits of Web-based instruction cited by the students, all of whom are over the age of 25: (1) the ease of communicating on-line makes it possible for students to feel just as close if not

closer to on-line classmates than they ever felt to "live" classmates; (2) Web-based courses give students opportunities to search the Web and master computer skills that are essential in the world today; (3) the Web enables students to reach other students and their instructors at times other than "live classroom hours" making it easier for students to share information and offer support to one another; (4) the flexibility inherent in Web-based courses allows adult students to balance their educational pursuits with their job and family responsibilities, enabling many people, who might not otherwise have the time, to pursue additional education; and (5) in addition to providing opportunities for on-line discussions and information sharing among peers, Web courses allow students to develop self-sufficiency and engage in independent thinking and research.

Illinois Community Coll. Board, Springfield. (1996). *Serving underserved areas through off-campus coursework and telecommunications. Joint report to the Illinois board of education and Illinois community college board*. U.S.; Illinois:

To respond to the needs of place-bound adult students, an increasing emphasis has been placed on off-campus credit activities in the state of Illinois. During academic year 1995, 52,609 off-campus courses were offered in the state, with the Illinois Community College System accounting for 78.6% of these offerings and independent colleges accounting for 14%. In Illinois, 10 regional consortia of colleges and universities have been formed to coordinate plans and help serve the educational needs of different geographical areas of the state. The consortia have begun to develop a state-wide telecommunications-based instructional delivery system to expand state-wide access to underserved areas. A fall 1995 survey of telecommunications activity for the consortia indicated that between fall 1994 and 1995, the number of courses offered over interactive telecommunications had more than doubled among consortia state-wide. One of the major obstacles to the use of telecommunications technologies in the delivery of off-campus courses has been the complex nature of regulations and pricing structures, but advances in telecommunications technologies are encouraging further coursework sharing across district boundaries. Detailed tables of course offerings and enrolments are included. Appendixes provide a list of higher education institutions in Illinois, a map of regional consortia, and a list of consortia members.

Inglis, A. (1999). Is online delivery less costly than print and is it meaningful to ask? *Distance Education*, 20(2), 220-239.

The writer examines the costs of shifting from print-based to online delivery of distance education in relation to the main rationales for such a shift--saving costs, improving quality, and increasing access. The projected costs of converting an existing print-based photography course to online delivery were analyzed and it was found that, when measured on a cost-per-student basis, online delivery for all intake levels was less economical than print-based delivery. Improving the quality of learning may increase the variable costs of delivery, while the high costs associated with technology may deny access to students from poorer backgrounds. Nevertheless, the decision of whether or not to embrace online delivery should not be governed primarily by present cost, quality, or access considerations. The issue is

strategic, and the rationale underlying such a shift should be couched in strategic terms.

Irani, T. (2000). If we build it, will they come? The effects of experience and attitude on traditional-aged students' views of distance education. *International Journal of Educational Technology*, 2(1), 1-12.

Describes a study that examined the effect of direct experience on traditional aged college students' attitudes, perceptions and intentions toward distance education. Used a repeated measures design, set up to measure before and after effects of direct experience and peer influences on a sample of undergraduates.

Jackson, G. A. (1990). Evaluating learning technology: Methods, strategies, and examples in higher education. *Journal of Higher Education*, 61(3), 294-311.

This article pursues two ends: to describe, evaluate, and compare various methodologies and strategies available for evaluating learning technologies, and to illustrate several key strategies. Evaluation methods include surveys, interviews, observations, activity measures, and combinations of these. Examples include Educom Survey, Carnegie Mellon University Activity Studies, etc.

Jewett, F. (1998). *The education network of Maine: A case study in the benefits and costs of instructional television. Case studies in evaluating the benefits and costs of mediated instruction and distributed learning*. U.S.; California: Information Resources and Technology.

This case study examined the benefits and costs of instructional television as employed by the Education Network of Maine (ENM) through its distance learning initiative. Data were obtained from the 1995-96 and 1996-97 academic years. In fall term 1996, there were 3,264 students enrolled in network courses, about 10.6 percent of system enrolment. A total of 779 students who were enrolled in 23 network courses at either a receiving site (remote) or a studio broadcast site (where students were in the classroom with the instructor) during spring 1996 were surveyed. It was found that responses from both sites were generally favourable toward the courses and the logistical arrangements. A significant difference in average grades was found in only one course. Cost estimates indicated that classroom instruction was the least expensive mode for low enrolment courses (25 students), and that the costs of moderate enrolment courses (110 students) were essentially equal for classroom and network instruction. In high demand courses (220 students), network instruction was estimated to be 47 percent less expensive than classroom instruction.

Johnson, J. L. (1999). Distance education and technology: What are the choices for higher education? *Journal of Educational Computing Research*, 21(2), 165-181.

The Education Network of Maine (ENM), the distance education arm of the University of Maine System, connects 10 Centres and more than 100 sites around the state of Maine with an interactive television system that broadcasts to homes, offices, and the 100 plus sites. In addition to delivering courses over an interactive television system, the ENM has begun to offer courses asynchronously using the World Wide Web, videotapes, and other delivery modes, increasing access to higher

education for Maine citizens. Ongoing evaluations reveal that students were satisfied with the logistics of courses offered, with the professors, and with the technology. An area of weakness in one of the courses studied here was the lack of connection students in the various locations felt to each other.

Johnstone, S. M., & Poulin, R. (2002). What does distance learning really cost? *Community College Journal*, 73(2), 14-16, 18, 20.

The writers discuss the Technology Costing Methodology as a technique for determining the cost-benefits of technology investments. The major categories used in the Technology Costing Methodology include instruction, academic support, student services, student access services/student records, and institutional support. This methodology is designed to help decision-makers rather than provide precise information.

Joiner, L. L. (2002). The connected teacher. *The American School Board Journal*, 189(1), 8-11.

Part of a special issue on educational technology. A growing number of teachers are going online in a bid to learn new teaching methods, earn graduate credit, and gain recertification. Online professional development is helping teachers meet their changing expectations via convenient, cost-effective, accessible, and flexible online courses. Online courses are provided in a range of styles that suit teachers' professional and personal needs, including video broadcasting and conferencing, online learning communities, and self-paced lessons. Online professional development and its advantages and challenges are discussed, and an examination of the types of people who are using online courses is provided.

Jones, A. (2005). Break through the barriers. *The Times Educational Supplement*,

It is time for school Web sites in Great Britain to do more to meet the requirements of the Disability Discrimination Act. A Web site that is hard to access by disabled people holds back or excludes individuals, and schools are breaking the law if they do not ensure their Web sites offer good access to all.

Jones, K. (2004). 2005: The year of the digital campus. *T.H.E. Journal*, 32(5), 32.

Educational institutions can benefit from becoming digital campuses in 2005. The benefits of digitization include greater accessibility, self-service and convenience, streamlining of back-office processes, resource and file sharing, anytime and anywhere access to information, and digitization of content and critical information assets.

Jorgenson, H. (2003). Two approaches to accessibility in distance education. *Distance Education Report*, 7(1), 4, 6.

Two different approaches to accessibility in distance education are presented. Used at the University of Maryland University College, the first approach involves modifying distance education courses to facilitate disabled students, when required. Employed by Conrad N. Hilton College in Houston Texas, the second approach involves making distance education courses accessible from the very start.

Kearsley, G. (2002). Is online learning for everybody? *Educational Technology*, 42(1), 41-44.

Online learning is commonplace and popular, but there are many reasons why it is not universally appropriate. Not every student has the required self-discipline and study skills, access to a computer and the Internet, or technical knowledge required for online learning. Furthermore, not every teacher has the time, access, computer literacy, or personality for online teaching, while the necessary facilities, support staff, and management cannot be provided by all administrators. In addition, not every subject or job task can be taught easily and effectively online. Online learning is also inappropriate for organizations and institutions that are not technology-oriented and for cultures or societies that have not wholeheartedly embraced technology on moral or philosophical grounds.

Kennedy, C. A. (2000). *What influences student learning in an online course?* U.S.; California:

This document reviews current literature about predicting student success in an online environment and what influences learning online. Online students are often older and more self-directed than traditional college students. They have their own set of cognitive characteristics and expectations of the learning experience. Among the findings of various studies about student success are that online students tend to attribute their success to study habits and discount the role of teacher quality, that experience with e-mail and computers is positively correlated with course performance, and that these students tend to be more self-sufficient. The paper also discusses the dilemma of what constitutes learning. Though past studies have found no appreciable difference or even higher grades for online versus traditional courses, it does not necessarily mean that online students learn more. The paper presents a model for understanding student learning online. This model states that factors that the students bring with them, such as their purpose for taking a course and their attitude about computers, act on the students, who in turn must deal with the technologies employed in the course in order to learn. Directions for future research are discussed.

Keohane, N. O. (2000). Going the distance. *Educause Review*, 35(4), 10-11.

Distance learning promises to transform the face of higher education by improving access, overcoming physical and logistical barriers, and putting powerful tools for collaboration and analysis directly into the hands of students. Indeed, many institutions have already used distance education responsibly and to good effect. However, the pressures on universities and colleges can lead to skewed choices about how and whether to become involved in distance learning. Institutions need to approach the opportunities of distance learning with great mindfulness and with their mission statements before them.

Kezar, A. J. (1999). The diverse campus: Broadening our ideal to incorporate all voices. *New Directions for Higher Education*, 27(1), 25-34.

The collegiate ideal, often associated with elitism in higher education, has changed over time to become more pluralistic and thus more accurately reflect increasingly

diverse student populations. Colleges are encouraged to better understand and acknowledge the benefits of the college environment for a diverse population, support changes promoting diversity, and understand the potential disadvantages of technology and distance education.

Kiefer-O'Donnell, R., & Spooner, F. (2002). Effective pedagogy and E-learning. *Teacher Education and Special Education*, 25(2), 168-170.

The dramatic increase in use of the Internet and the various applications and platforms that are accessed through it is perhaps the most significant single development for the field of teacher preparation in the last 20 years. For many, it is a ray of hope; a truly powerful strategy to reach populations of new and existing teachers who are cut off from best practice. To others and perhaps, many others, these approaches are perceived as, at best, short cuts to effective personnel preparation. They are often considered inadequate and inappropriate substitutes for on-campus and face-to-face instruction. A number of real issues contribute to this growing conflict, but perhaps the greatest of these has to do with the ability of these tools to promote learning, either locally or at-a-distance, or in real-time or at the convenience of the learner. As such, this issue of *Teacher Education and Special Education* will include a discussion of effective pedagogy and e-learning, a discussion that most likely will continue for quite a while.

Killion, J. P. (2000). Log on to learn. *Journal of Staff Development*, 21(3), 48-53.

One of the most exciting new developments in staff development is the advent of online courses. Research indicates that online learning is at least as effective as more traditional methods of learning. Online instruction also offers benefits such as increased access to learning, more flexibility, and reduced costs. In addition, well-designed online professional development can encourage and facilitate collaboration and interaction among students and between students and the instructor. However, there are a number of problems associated with online staff development, including hidden costs, concerns over the quality of the content and learning process, and lack of learner readiness.

Kim, K., Lu, X., Lee, S., Bonk, C. J., Magjuka, R. J., & Liu, S. et al. (2004). *Online facilitation and motivation in online MBA courses*

Online teaching and learning is making a significant impact on the fabric of higher education. In particular, online MBA programs have seen a rapid rise in student enrolments in recent years while the student enrolments in traditional in-residence MBA programs are in decline (Hayward, 2004; Lorenzo, 2004). This appears to be due, in part, to the convenience and flexibility of the delivery of online education, which enable adults with full-time jobs to attend classes without having to leave their current jobs (Mandan, 2001). Accordingly, many institutions of higher education are offering online programs to serve the growing learner population. Despite such an increase in the popularity of online education, there has been a concern in the quality of online education (Diaz, 2002; Islam, 2002; Moore & Kersey, 1996). Therefore, institutions of higher education have keen interests in

offering quality online MBA programs. Moreover, educators need to be aware that student expectations on the quality of online education programs are rising rapidly.

Kim-Rupnow, W. S., Dowrick, P. W., & Burke, L. S. (2001). Implications for improving access and outcomes for individuals with disabilities in postsecondary distance education. *American Journal of Distance Education, 15*(1), 25-40.

A study investigated whether the growth in distance education programs and the use of advanced technology imply better access to and better outcomes in higher education for people with disabilities. Individual and institutional case studies identified through a search of ERIC and other major databases were examined. These case studies provided data about student characteristics, support services for disabled students, and technology trends in distance education. The results demonstrated that distance education has substantially increased access to higher education for individuals with disabilities and that individuals with disabilities can avail of a range of support services to gain better access to higher education. The major technology trends in distance education are described, the study's findings are discussed, and the implications of the findings for postsecondary institutions and future studies are provided.

King, K. P. (2001). Playing out the realities of web-based bulletin boards: Enhancing face to face learning. *New Horizons in Adult Education, 15*(1)

Using web-based bulletin boards in classes elicited enthusiastic responses from 109 graduate education students. They felt it enhanced learning, created a greater sense of community and encouraged participation through its use. Some negative aspects of web-based conferencing (need for self-direction and technological literacy, lack of spontaneity and nonverbal communication, false anonymity) also emerged.

Kirk, M. P. (2000). Critical issues affecting internet instruction within the North Carolina community college system. (Doctoral dissertation, North Carolina State University). , 118. (EDRS Price MF01/PC05 Plus Postage.)

The central purpose of this study was to assess the extent to which community college students and faculty agree on the evaluation and importance of cited critical issues in relation to online instruction. The researcher selected two urban and two rural community colleges in North Carolina to survey students and faculty regarding their satisfaction level with services offered, as well as their perception of the importance of critical issues identified by the researcher. Seventy-six faculty members were surveyed, with 32 responding (42% response rate). Four hundred and eighty-five students were surveyed, with 65 responding (13.4% response rate).

Results included: (1) 91% of faculty found adequate program planning and development to be a critical issue, compared with 82% of students who found this issue to be critical; (2) 89% of students identified student self-direction and motivation as a critical issue, as compared to 94% of faculty; and (3) 91% percent of faculty felt that adequate release time to develop online courses was a critical issue, compared with 74% of students. The author also found that many instructors felt pressured to produce Internet courses and were frustrated with the addition of this project to their already loaded schedules.

Kirkwood, A., & Price, L. (2005). Learners and learning in the twenty-first century: What do we know about students' attitudes towards and experiences of information and communication technologies that will help us design courses? *Studies in Higher Education, 30*(3), 257-274.

This article reports on issues relevant for teachers and instructional designers anticipating using information and communication technologies (ICTs) in higher education, particularly those wishing to adopt a flexible learning approach aimed at improving the quality of the student experience. The data that are reported on span more than five years, and have been gathered from a range of large quantitative postal surveys and smaller qualitative surveys, with total respondents numbering around 80,000. The large-scale surveys cover annual course reviews, computer access, student's use of media, access to media technologies and ICT access and use. The smaller qualitative studies include students use of CD-ROMs and online tuition. This article describes the students' backgrounds and how this can affect their studies. It discusses students' access to media technologies and what their perceptions of media are in the context of independent learning. The conclusion is that, although ICTs can enable new forms of teaching and learning to take place, they cannot ensure that effective and appropriate learning outcomes are achieved. It is not technologies, but educational purposes and pedagogy, that must provide the lead, with students' understanding not only how to work with ICTs, but why it is of benefit for them to do so. Knowing about students' use of media as well as their attitudes and experiences can help teachers and instructional designers develop better courses.

Kramarae, C. (2001). *The third shift: Women learning online*. U.S.; District of Columbia: American Association of University Women Educational Foundation.

The first in a series on women as professionals and students in 21st-century higher education, this report is based on interview and questionnaire responses from more than 500 women and men from many occupations, as well as a review of published research on distance learning. It examines the convergence of two major trends: the growth of technology and distance education in the college and university setting, and the demographic shift toward a predominantly female population of non-traditional-age college students. The report focuses on understanding why women pursue online education, what constraints they may face in doing so, and how they perceive online culture, social identity, and communications. Following an introduction, the report's sections are: (1) "Why Women Go Online: Educational Plans, Preferences, and Aspirations"; (2) "The Digital Divide: Gaps and Bridges"; (3) "Look Who's Talking: Gender Identity and Culture Online"; and (5) "Conclusions and Recommendations." Appendices discuss the methodology and researcher.

Lacina-Gifford, L. J., & Kher-Durlabhji, N. (1996). Preparing to teach a class by internet. *College Teaching, 44*, 94-95.

The writers outline the advantages and disadvantages relating to teaching a graduate course using the Internet. Teaching the distance education course using this method offered students freedom and the ability to access material at their convenience and eliminated students' commuting time. However, students had to be self-motivated

and internally driven, and there were also problems associated with technology-related breakdowns, planning, time, and the modality limitation in the presentation of course materials. Students' success clearly depended on their ease in handling the technology, the promptness of the teacher in communicating with them, and their willingness to be self-starters in the quest for learning. The writers outline the steps to success in relation to planning and preparation and presentation and feedback.

Lambert, L. (2004). Invisible bridges: Wireless technology links minds over space and time. *Tribal College, 15*(4), 14-17.

Wireless technology is providing Internet access on Indian reservations and in communities, connecting Indian people on remote reservations to one another, to educational opportunities, and to a vast array of resources within the realm of cyberspace. Although many tribal colleges had only one computer on their entire campus connected to the Internet a few years ago, all of the 34 tribal colleges and universities have now achieved broadband Internet connectivity and most have well-equipped computer labs, growing distance education programs, and faculty who use the technology to improve teaching and learning. Details of the American Indian Higher Education Consortium wireless project are provided.

Lance, G. D. (1996). Computer access in higher education: A national survey of service providers for students with disabilities. *Journal of College Student Development, 37*(3), 279-288.

Surveyed service providers from 31 states and the District of Columbia concerning demographics and their training and knowledge of assistive technology, perceived responsibility for computer access and training, and assessment of computer accessibility on their campuses. Implications of the results for service providers, students with disabilities, and institutions of higher education are discussed.

Lim, D. H. (2002). Perceived differences between classroom and distance education: Seeking instructional strategies for learning applications. *International Journal of Educational Technology, 3*(1)

Compared the perceived degree of learning and application of learning made by college students who took a course in either traditional classroom, Web-based, or satellite-based delivery format and identified reasons for high or low learning and application. Investigated which instructional strategies and instructional design factors affected students' higher learning and application.

Lorenzetti, J. P. (2002). Working through the accreditation maze. *Distance Education Report, 6*(7), 4.

The writer discusses accreditation for distance education courses. Institutions must find a way to compare distance education courses and their campus-based counterparts even though they look and feel different. Janic Karlen, an associate professor of accounting and managerial studies, suggests that as access to faculty, library resources, student services, and other university resources are different for the distance education student, it makes sense to focus on student learning outcomes when it comes to setting assessment standards. However, she contends that this

assessment should go beyond grades and should involve university-set criteria for what has been learned. Accrediting agencies are now meeting universities half way and have modified their processes to encompass the unique features of distance education.

MacDonald, L., & Caverly, D. C. (2001). Engendering online discussion. *Journal of Developmental Education*, 25(1), 42-43.

In the first of a series of articles about online discussion, the writer considers Type 1 discussions. These discussions consist of interactions between students and tutors or instructors and involve access and motivation, socialization, and information exchange.

Maddux, C. D. (2002). The web in education: A case of unrealized potential. *Computers in the Schools*, 19(1/2), 7-19.

The vast educational potential of the Web continues to be largely unrealized in schools. There are many reasons for this, including cultural lag and the speed of technical advancements. Specific problems include educational Web pages that lack interaction, educational fads, frantic implementation of distance education with no regard for quality control, lack of teacher training, lack of institutional, technical, and pedagogical infrastructure, limited Internet access, and antiquated hardware. The article concludes with a call for research into these problems.

Manner, J. C. (2003). Serving the non-traditional student through a technology-enhanced curriculum. *TechTrends*, 47(5), 32-35.

Advice for online teacher educators on how to make technology-enhanced courses more accessible and accommodating to non-traditional students is provided. This advice relates to orienting students in person, actively encouraging student interaction, adding technical instructions in each assignment, offering limited technical advice, and warning students not to panic over technical challenges.

Mannix, M. (2000). Learning to learn online. *ASEE Prism*, 9(7), 36-37.

Distance education requires both students and faculty to possess a different set of skills than needed for traditional education. Students must be persistent, develop a routine, and make the effort to develop relationships with classmates who may be a continent away. Faculty must realize that access to a course, instructional quality, convenience, cost, and student services add as much value to the courses as content does.

Marcus, J. (1999). Distance learning fails to close gap. *The Times Higher Education Supplement*, (1385), 16.

Questions about quality and access in distance learning have been raised by two studies. The College Board has found that distance education using high technology excludes low-income students, and the Institute for Higher Education Policy has said that previous reviews overlooked problems such as high dropout rates and shortage of online reference materials.

- Masters, K., & Oberprieler, G. (2004). Encouraging equitable online participation through curriculum articulation. *Computers & Education, 42*(4), 319-332.
- Student participation is a central issue in debates around online education. In most instances, course convenors wish to increase the amount of participation, while ensuring that the quality is of an acceptable standard. They also wish to ensure that their students have adequate access to the technology, and that there is no undue dominance by any groups of students. In order to achieve the desired degree and balance of participation, various strategies are pursued-most of these focus on the awarding or denial of marks. In this exercise, first year Health Sciences students were introduced to online discussions as part of an Information Technology/Information Literacy (IT/IL) stream in their curriculum. Most importantly, the nature of the participation was to be guided purely by the philosophy and content of the main Health Sciences curriculum, with no overt reward or punishment system for participation in the online discussions. An analysis of the number of postings and the spread of postings shows an acceptable level of equitable participation across the student body. The main conclusion is that effective participation in online discussions is possible by curriculum articulation.
- McAllister, C., & Ting, E. (2001). *Analysis of discussion items by males and females in online college courses*. U.S.; New York:
- Proponents of computer-mediated education suggest that the reflectivity, interactivity, and collaboration of online discussion provide an egalitarian learning environment for men and women. Others suggest that on-line discussion contains the same gender bias as face-to-face classroom communication. This study analyzed the 456 discussion postings of 34 students in 2 online college courses. Each discussion posting was analyzed for seven variables: frequency, length, readability, audience, purpose, reference, and format. Male and female discussion items differed significantly in length, use of indicators to specify a particular reader, purpose, and use of formal signature. Male and female discussion items did not differ in frequency, readability, intended audience, or references to personal experience or outside sources. From this preliminary study, a number of additional items are identified for investigation. Five appendixes contain figures illustrating points of the discussion.
- McElhinney, J. H., & Nasseh, B. (1999). Technical and pedagogical challenges faced by faculty and students in computer-based distance education in higher education in Indiana. *Journal of Educational Technology Systems, 27*(4), 349-359.
- This study reports faculty members' and students' responses to the technological and pedagogical challenges they faced in completing computer-based distance education. Topics include the need for adequate faculty training, the need for adequate student training, and the need for technical support available 24 hours a day.
- McHenry, L., & Bozik, M. (1997). From a distance: Student voices from the interactive video classroom. *TechTrends, 42*(6), 20-24.
- Observations and interviews of community college students taking a class via interactive video revealed six primary themes of students' concerns and perceptions.

Results indicate that further exploration is needed in classroom climate, apprehension, interaction, feedback, and learning styles.

- McKimmy, P. B. (2005). Preparing educators in rural Hawai'i: Student reflections on technology-mediated programs. *TechTrends*, 49(1), 20-23.  
Advances in technology have allowed the College of Education at the University of Hawaii-Manoa to offer the country's island residents distance education options for achieving teacher licensure. Although online courses were a challenge to some, students felt that they improved their professional skills and appreciated the improved access to education that distance technologies offered. Moreover, student feedback and reflection affirms online delivery as an appropriate solution to the geographical challenges of teacher education provision in the island state of Hawaii.
- McLellan, H. (1998). The internet as a virtual learning community. *Journal of Computing in Higher Education*, 9(2), 92-112.  
Describes one Internet-based model for implementing university classes that uses list serves, electronic mail, and the World Wide Web. Compares Internet and conventional classes; looks at the potential of both asynchronous and synchronous virtual learning experiences and activities. Argues that an Internet-based virtual learning community, with its dynamic interactions between students and teachers, is a powerful approach to distance education.
- Menlove, R., & Lignugaris, B. (2004). Preparing rural distance education preservice special educators to succeed. *Rural Special Education Quarterly*, 23(2), 18-26.  
A growing number of students living in rural communities access special education teacher preparation and professional development courses via technology-delivered distance education. Success in these courses depends on the effective use of technology to access information and course materials, complete and submit assignments, and communicate with instructors and classmates. To increase the likelihood that distance education students would have the needed technology skills to succeed as distance learners, program supports were implemented. Supports included a precourse distance learning workshop, on-line technology help files, and access to a technology assistant. Results indicated that student confidence improved in the use of technology skills addressed in the precourse workshop and practiced during the following semester.
- Merrill, N. A. (2004). Creating a learning community: ETech college of Wisconsin. *Community College Journal of Research and Practice*, 28(1), 27-32.  
Part of a special issue on leadership strategies for a competitive environment. Established in August 2001, the eTech College of Wisconsin is a virtual institution that increases student access by expanding learning opportunities. As well as providing expanded learning options, eTech College aims to foster collaboration among 16 Wisconsin Technical Colleges with the aim of developing online courses and attracting students. The success that eTech College has enjoyed so far can be expected to continue because it was created on a solid foundation of collaboration and teamwork

Miller, L. G., & Others. (1996). *Overcoming barriers for "niche" learners through distance learning*. U.S.; Tennessee:

For over 15 years, Tennessee's Chattanooga State Technical Community College has been offering non-traditional, distance education to reach "niches" of students who would otherwise find it difficult to attain a college education. Begun in 1979 with a laboratory-based independent study program offering a mix of purchased and locally-developed courses, the distance program has since broadened to include an Instructional Television Fixed Service system, videocassettes mailed to students' homes, and courses via computer and the World Wide Web. In fall 1996, 326 students were taking courses via the distance program only, representing 1,320 credit hours the college would not have otherwise had. The students served fall into five main niches. Handicapped students use course material in their homes, coming to campus to be tested or making arrangements with staff administrators to take tests at home. Power line maintenance technicians scattered in small groups throughout six states can take a five-course sequence in their own locales. Emergency service personnel receive 1 year of credit for their experience and then take an additional year of coursework through distance learning. A course has also been designed for truckers so that they may watch video courses in their sleepers, take the exams on their own, and develop a business plan using a workbook. Finally, a course in digital circuits was developed for industrial maintenance workers in small companies.

Miller, M. T., & Lu, M. (2002). *Barriers and challenges to serving non-traditional students in E-learning environments*. U.S.; California:

Online teaching in higher education has become increasingly common, particularly as colleges and universities attempt to serve surging enrolments in some areas and as they look to expand their offerings in other markets. A primary consumer of these courses is the non-traditional student. Because these non-traditional students have unique learning needs that must be addressed in the online classroom, this study sought to identify the barriers to success non-traditional students face in the online learning environment and the strategies teachers can use to assist these students. Assessment strategies for non-traditional students are also studied. Participants were 57 non-traditional students and faculty members who completed an online questionnaire. Among the barriers identified were a lack of experience with technology, a lack of support systems for the online learner, time constraints, and other aspects of the intangible aspects of supporting a culture of technology. Teacher responses reflected the home-grown responses of faculty members dealing with issues on a daily basis and responding with their own creative strategies. Assessment strategies identified were consistent with those of virtually any academic environment. The barriers and strategies identified were indicative of a labour market, college faculty, trained to perform the function of instruction in a live class situation but being asked to perform differently.

Minich, E. L. (1996). *Using student feedback to improve distance education*. U.S.; Florida:

Florida Community College at Jacksonville (FCCJ) enrolls over 6,300 students annually in college-credit telecourses and computer-based courses. At the midpoint

of each term, all students who have withdrawn from a distance education course are surveyed regarding their reasons for withdrawing and their perceptions of possible improvements. In winter 1995, 355 of the 2,220 students enrolled in telecourses withdrew and were surveyed. Responses, received from 18% (n=65), revealed that 68% had not participated in the course after attending an on-campus orientation and that 69% cited personal reasons outside of the college's control for withdrawing. Based on these findings, it was recommended that faculty initiate contact with distance learners earlier in courses and more frequently, and some faculty have investigated the use of electronic bulletin board systems to add an interactive component to telecourses. Surveys are also conducted of students completing distance education courses regarding their perceptions of administrative issues, faculty support services, and course design. In winter 1995, 424 students returned surveys, indicating that only 33% watched courses during scheduled cablecasts, 76% had access to a computer, and a majority were satisfied with faculty support and course organization. These findings suggested that cablecast scheduling was not as crucial as previously thought, since most students taped courses, and that modem-based courses were an option, with a sociology course using the FCCJ bulletin board planned for fall 1996.

Moore, K., Bartkovich, J., Fetzner, M., & Ison, S. (2002). *Success in cyberspace: Student retention in online courses. AIR 2002 forum paper*. U.S.; New York:

This study addressed the relative dearth of data on student retention in distance education through archival and survey data on student retention in online courses at a large, comprehensive community college in the Northeast. The college's online program had been active for 5 years, and at the time of the study, encompassed nearly 4,000 student registrations in more than 200 online courses each year. Archival data included records for the past 3 years for "attendance" in class and class performance. A student survey was designed to be administered to students who had received an "F" or "W" (withdrawal) in an online class within the past academic year. Responses were received from 71 usable survey responses from the initial sample of 500 students. The archival and survey data provided insight into the nature of student retention in online courses at a large community college. The study also provides evidence in support of the 4-factor model of barriers to success in distance education courses proposed by M. Garland (1993). Some factors that appear to have negative impact on a student's chances for completing an online course successfully include: (1) large course load; (2) lack of experience in higher education in general; (3) lack of experience with online courses; (4) busy lives outside of school; (5) young age; and (6) lack of easy access to computers. Study findings are being used to inform practice through a comprehensive institutional pilot process.

Moore, P. L. (2002). *Access and success in web courses at an urban multicultural community college: The student's perspective*. U.S.; Arizona:

This study explores the question of access in Arizona's postsecondary electronic education environment by looking at an urban community college with a highly diverse student population. Phoenix College (PC) is a community college in the Maricopa Community College District in Phoenix, Arizona. A number of

neighbourhoods near the campus showed a household income of 50-75% below the poverty level. Ethnic minorities represented 57% of the student body at Phoenix College. The college is early in its Web course development, and offered only 16 Web courses in the spring term of 2001. Courses required by or that applied to a large cross-section of academic and occupational degree and certificate programs were selected for the study in order to obtain a broad representation of majors and educational goals among the student sample. The study looked at 10 sections of freshman-level general education courses. The sample included 252 students--140 returned an electronic survey, and 100 participated in the follow-up interviews. Women represented 56% of the PC student body, but 65% of the Web students were women. Older students were underrepresented in the Web courses under study: 6% of these students were aged 40 or older, while 19% of students at PC were over 40. The study also found that the majority of Web students were White, and there were proportionally fewer Hispanics registered in the Web courses.

Moriber, A. C. (2000). In my view. Inspiration? Personal attention? Are they decreasing? *Kappa Delta Pi Record*, 36(3), 101-103.

Daily contacts between teachers and students, reviewing students' work, student-to-student interactions, and faculty members' availability to students can leave an indelible impression on students. However, higher education may be moving toward an atmosphere much less conducive to student-college connections. This is due to distance learning, decreasing full-time faculty, and increased class size.

Murray, D. E. (2000). Protean communication: The language of computer-mediated communication. *TESOL Quarterly*, 34(3), 397-421.

The language of computer-mediated communication (CMC) needs to be understood by teachers of English to speakers of other languages. Research shows that CMC displays features of simplified registers linked to both oral and written language and also exhibits its own norms for organizing conversation and maintaining topic cohesion. However, given that CMC cannot be studied as a neutral linguistic phenomenon, research efforts must focus on CMC in relation to the dominance of English, differential access to technology, and control of CMC discourse. Further consideration must also be given to the use of CMC in English language teaching distance education.

Muse, H. E., Jr. (2003). The web-based community college student: An examination of factors that lead to success and risk. *Internet and Higher Education*, 6(3), 241-261.

The goal of this study was to predict which students are at risk in Web-based classes at the community college level and to gather information on why students drop these classes. The reason given by the 22 students interviewed was that they could not obtain, access, or install all the required learning materials in a timely manner and that they dropped the course while they could.

Mwanza, D., & Engestrom, Y. (2005). Managing content in e-learning environments. *British Journal of Educational Technology*, 36(3), 453-463.

The use of e-learning environments to support teaching and learning has had great

impact on the way content is developed and managed. In most cases, both teachers and students have had to re-adapt the way they prepare, access and engage with educational matter. The adjustment in human mechanisms for organising and interacting with educational content has become necessary due to the re-mediation of established practices through the introduction of software-based techniques to structure content, for example, using metadata. Whilst metadata standards provide effective guidelines for organising content in web-based e-learning environments, technology-based approaches to managing educational resources do not fully address social-cultural and pedagogical aspects of users in the context in which teaching and learning takes place. In this regard, the effectiveness of using metadata to structure the discovery and access to educational content should be considered in relation to the extent by which metadata descriptors are associated with established socio-cultural and pedagogical practices. Towards this end, we reflect on potential contributions of social-cultural and learning theories to the task of managing content in e-learning environments. The paper presents an activity centred approach to abstracting contextually and pedagogically enriched metadata descriptions of educational content and interactions with learning objects.

Nasseh, B. (1999). Are higher education institutions ready for the 21st century? *Distance Education Report*, 3(4), 2-5.

Discusses the future of computer-based distance higher education based on the results of two research studies of faculty and students participating in computer-based distance-education courses. Highlights include the new generation of learners, including Internet users and adult learners; educational processes that are global and competitive; and collaboration and cooperation.

Ngor, Alice Lo Choi Yuet. (2001). The prospects for using the internet in collaborative design education with china. *Higher Education*, 42(1), 47-60.

The Internet has become widely available in higher education institutions all over the world offering new possibilities in communication, collaboration and delivery. This paper examines the prospects for using the Internet in the context of collaborative design education with China, using the School of Design of the Hong Kong Polytechnic University as a case study. The critical success factors are discussed. These involve serious investment of resources and changes at government, institutional and personal levels on both sides of the collaborative institutions. It is important to look into the infrastructure and policy issues, access to information technology, curriculum adaptation and instructional design as well as staff and student attitudes in order to achieve the collaborative objectives through an Internet supported strategy. Although the Internet is a cost effective delivery mechanism, the School does not intend to deliver its design course materials to China purely online. Pedagogically, the School believes in a dynamic interaction between real and virtual learning environments for quality student learning. Technically, there are many impediments to overcome before teaching staff and students are familiar with the use of information technology and it will take some time before most people in China can make full access of the Internet to connect freely to electronic education. Therefore, a hybrid approach is proposed to train design educators and practitioners

in Mainland China by utilising traditional face-to-face teaching method and established technologies while developing the use of the Internet gradually.

Nixon, D. E. (1992). Simulteaching: Access to learning by means of interactive television. *Community/Junior College Quarterly of Research and Practice*, 16(2), 167-175.

Compares the final grades of Iowa Lakes Community College students enrolled in courses taught via interactive television in one- and two-way video remote sites with the grades of students in the same classes taught at the classroom origination site. Concludes all students had the same learning opportunities.

Oblinger, D. G., & Hawkins, B. L. (2005). The myth about E-learning. *Educause Review*, 40(4), 14.

Although many educators say that there is no need to worry about e-learning anymore, now may be a good time for them to consider the benefits of e-learning. The majority of institutions offer some type of e-learning, online enrolments are predicted to continue growing, and recent research suggests that most academic leaders think that the quality of online instruction is equal to or better than the quality of traditional instruction. Moreover, e-learning can involve hybrid courses that free up classroom space, can increase flexibility in and improve access to education, and can enhance the quality of education.

Owens, K. A., & Volkwein, J. F. (2002). *The impact of instructional delivery on learning outcomes and intent to persist*. AIR 2002 forum paper. U.S.; Maryland:

This study compared face-to-face and video classroom instruction and assessed self-reported educational outcomes and intent to persist for a population of 274 student inmates at 9 prisons. Consistent with student-institution fit literature, the strongest positive and direct influences on educational outcomes are faculty classroom effectiveness, peer interactions, and being female. Learning via distance, in this case video has a direct negative influence on faculty and peer interactions, a negative but indirect influence on outcomes, a positive influence on intent to persist in the course and semester, but no association with intent to persist in the degree program.

Owston, R. D. (1997). The World Wide Web: A technology to enhance teaching and learning? *Educational Researcher*, 26, 27-33.

The World Wide Web can be used as a technology for improving teaching and learning. In particular, the World Wide Web has promise for making learning more accessible, promoting enhanced learning, and containing or reducing the per unit costs of education. Although further research and development on the application of the Web for teaching and learning is required, it merits serious attention as ways of revitalizing and improving what is done in schools are sought.

Pachnowski, L. M., & Jurczyk, J. P. (2000). *Correlating self-directed learning with distance learning success*. U.S.; Ohio:

At a large Midwestern university, the distance learning administration has recently found a need to develop a pre-assessment instrument for its distance learning

students. The instrument would be made available to students to help them determine their readiness for the unique nature of distance learning. This study sought to determine whether the student characteristic of self-directedness correlates with student success in Web-based courses, as defined by course grade. The researchers chose to implement the Self-Directed Learning Readiness Scale (SDLRS) (Guglielmino, 1977), a 58-item, 5-point Likert instrument that was e-mailed to all Web-based students. The researchers asked Web-based instructors to provide letter grades for the students and give their assessments of each student's habits and attitudes for success in the course and each student's technical skills. Seventeen students returned completed instruments, and instructors provided data on 39 Web-based students. The results of the study show that self-directedness was not a good indicator of success. The instructors' ratings of students' attitudes and habits was the best indicator, and students' technical skills were a good indicator in a smaller sample in which students' grades were higher. The challenges of gathering data from distance education students are also discussed.

Palmer, J. C. (1994). Research on telecommunications and related instructional technologies at community colleges: An ERIC review. *Journal of Applied Research in the Community College*, 1(2), 167-173.

Provides an annotated bibliography of 13 research studies in the ERIC database that examine how and to what effect telecommunications and related technologies have been used in community college instructional programs. Includes studies of telecommunications usage, student characteristics, and outcomes and program planning and evaluation documents.

Papp, R. (2001). *Student learning styles & distance learning*. U.S.; Florida:

Distance learning is quickly becoming an accepted and even necessary part of college and university programs. As more colleges and universities join the growing ranks of institutions offering distance learning, educators and administrators are struggling with the issue of how to assess student success in this new and largely untested environment. Many distance learning providers, and even some institutions, have developed short surveys that are designed to gauge whether a student is prepared to undertake distance learning. These tests, however, may not accurately assess a student's predisposition and learning style. This paper highlights and compares the use of different learning style inventories as a means to formally and empirically assess learning styles. Students in both distance learning and traditional classroom courses were given several of these inventories and their progress was tracked. Initial results indicate that some of these can be used as a successful predictor of student performance and may be useful for students and administrators in determining whether or not the student should undertake a distance learning course or program. The paper concludes with some suggestions and implications for educators on distance learning.

Parker, A. (1999). A study of variables that predict dropout from distance education. *International Journal of Educational Technology*, 1(2), 1-10.

This study of community college students investigated predictors of student dropout

in distance education courses. Considered locus of control, gender, number of distance education courses completed, age, financial assistance, and number of hours employed, and used correlation and discriminant analysis to show locus of control and financial aid were important.

Parker, L. L., Greenbaum, D. A., & Pister, K. S. (2001). Rethinking the land-grant research university for the digital age. *Change*, 33(1), 12-17.

The digital age presents new openings, challenges, and tensions to the land-grant universities. Established by the 1862 Morrill Act, these institutions gave states a means of providing a new level of access to higher education and the kind of practical education needed to industrialize America. The digital era now beckons these schools to serve it just as they served agriculture and other industries in the past, holding out promises of cost-efficiencies by educating greater numbers of students online. At the same time, the digital era upsets the familiar roles of age, tradition, and place. Many students now seek alternative forms of postsecondary education that are not linked to traditional indicators of professional preparation. Meanwhile, businesses are offering specialized online training as a means of developing and shaping the dynamic workforce it now demands. The writers examine the land-grant research university's role in helping to create an economically diverse, open, and intellectually strong society for the digital age.

Patterson, N. J. H. (1999). *An evaluation of graduate class interaction in face-to-face and asynchronous computer groupware experiences: A collective case study*. ASHE annual meeting paper. U.S.; Nebraska:

Two graduate-level educational administration courses, one delivered by computer-mediated (distributed) means and one held face-to-face, were evaluated based upon the needs of adult learners and active learning precepts. The same course was delivered to both classes by the same group of professors, using identical course requirements. The on-campus class met once a week for three hours in the evening; eleven adult students and two or three professors attended each class. Distributed class sessions (using a Lotus notes platform) took place at the time of students' choosing throughout the week, with all assignments and exams conveyed through writing. The professors were all experienced in the subject matter and in teaching; two of the three had previously taught using the software. The survey revealed that the characteristics of students in both classes were more alike than different. The distributed education class had a slight edge on the final grades, with the strongest indicator of difference seeming to lie in the greater amount of confidence the students brought to the class. The study also notes that the distributed students who had previous experience in distance learning spent more time in class.

Pearson, E., & Koppi, T. (2003). Designing a staff development course in inclusive design for online learning. *International Journal on E-Learning*, 2(4), 52-59.

The development of a staff development course in inclusive design for online learning is discussed. This course provides participants with the opportunity to develop skills in areas relating to legal or quality assurance considerations, guidelines and protocols, assistive technologies, design for inclusion, and checking

tools and mechanisms for student accessibility. Moreover, it helps participants to understand and undertake the development of accessible online courses.

Persichitte, K. A. (2001). Web sites for the darkness impaired: Discrimination in distance education. *TechTrends*, 45(1), 7.

Designers and developers of Web sites have an ethical responsibility to make online environments fully accessible to individuals who are blind or visually impaired. In fact, the adaptations needed to create a visually pleasing Web site that is fully accessible to the blind or visually impaired learner or instructor are relatively minimal and can be incorporated during initial development.

Peters, Diane. (1997). Delivering distance education: The evolving nature of post-secondary education. *CAUT Bulletin*, 44(10), 7.

Phillips, J. M. (2005). Strategies for active learning in online continuing education. *The Journal of Continuing Education in Nursing*, 36(2), 77-83.

Online continuing education and staff development is on the rise as the benefits of access, convenience, and quality learning are continuing to take shape. Strategies to enhance learning call for learner participation that is self-directed and independent, thus changing the educator's role from expert to coach and facilitator. Good planning of active learning strategies promotes optimal learning whether the learning content is presented in a course or a just-in-time short module. Active learning strategies can be used to enhance online learning during all phases of the teaching--learning process and can accommodate a variety of learning styles. Feedback from peers, educators, and technology greatly influences learner satisfaction and must be harnessed to provide effective learning experiences. Outcomes of active learning can be assessed online and implemented conveniently and successfully from the initiation of the course or module planning to the end of the evaluation process. Online learning has become accessible and convenient and allows the educator to track learner participation. The future of online education will continue to grow, and using active learning strategies will ensure that quality learning will occur, appealing to a wide variety of learning needs.

Phillips, S. (2003). Blitzing the glitz. *The Times Higher Education Supplement*, (1589), IV.

High-profile e-learning ventures have collapsed despite the heady prognostications about the Internet's ability to collapse distance, democratize higher education access, and act as a global knowledge vector. However, ventures on a smaller scale are experiencing more success.

Phipps, R. A. (2000). *Access to higher education in Alaska: Strategies for success*. U.S.; District of Columbia:

This study examined the historic and current contexts regarding student participation in higher education as a step toward developing policy recommendations for improving the percentage of Alaskans going to college. There appears to be a mismatch between the workforce needs of the state and the availability of qualified

Alaskans for those jobs. As the need for workers grows, projections indicate that Alaska will not enjoy a commensurate increase in high school graduates. There is financial aid available, but still relatively few Alaskans are going to college. The following strategies are suggested to increase access to higher education in Alaska: (1) establish a nonportable need-based grant program; (2) improve the linkage of K-12 and higher education systems; (3) establish indigenous advanced placement programs in Alaskan high schools; (4) improve access to distance education; (5) improve access to distance education; (6) encourage more Alaskan business and industry involvement; and (7) improve the transition from high school to college. Improving access will require that policymakers from all sectors of the Alaskan community contribute.

Poley, J. K. (1998). Distance education for American universities and the world. *American Journal of Agricultural Economics*, 80(5), 973-78.

Poole, D. M. (2000). Student participation in a discussion-oriented online course: A case study. *Journal of Research on Computing in Education*, 33(2), 162-177.  
Online course offerings are expanding. Although many are independent study courses with some contact with instructors and other students, discussion-oriented courses are also delivered on the Web. This study examined the nature of student participation in one such course. Access to course materials varied widely from student to student but reflected an overall commitment to learning. Student posts to the threaded discussion were very focused on the course content. Participation in the course changed while students served as course moderators, suggesting the positive effect such a role may have on learning and community building. A strong sense of community was established as students engaged in dialogue with each other and with the instructor.

Poole, Gary. (1997). Back to the future: What can we learn from current debates on educational technology. *Journal of Distance Education*, 12(1/2), 9.

Potashnik, M., & Capper, J. (1998). Distance education: Growth and diversity. *Finance and Development*, 35(1), 42-45.

Ray, L., & Atwill, K. (2004). The web and special education. *Computers in the Schools*, 21(3/4), 53-67.  
This paper details the use of the Internet by educators and parents of students with disabilities, software tools that make the Internet accessible to students with special needs and the state of Web-based instruction for these students. Issues are discussed that relate to current research with students with various disabilities as well as the scarcity of research with special education students using the Internet.

Restauri, S. L., King, F. L., & Nelson, J. G. (2001). *Assessment of students' ratings for two methodologies of teaching via distance learning: An evaluative approach based on accreditation*. U.S.; Alabama:  
Two of the most popular delivery formats in distance education are video

conferencing and online methodologies. The first step in the processes of recognition and reorganization needed for both forms of distance education is to identify the differences between the traditional classroom environment and the classroom that is augmented or replaced by one of these formats. Student comparisons of the two major distance education formats and traditional classroom characteristics were gathered through summative evaluations examining four major topics: (1) organization of class; (2) student/instructor interaction; (3) concept acquisition; and (4) use of variety of media. Student demographic data were also collected to investigate any correlation between these factors and preference. Results for 142 video conferencing and 62 online students show that students rating the 4 major variables called distance education either "the same as" or "better than" their experiences in a traditional course. Two factors that appeared to be of the utmost importance to students, and that should be examined carefully by instructors, departments, and distance education organizations, are the technological needs of students taking the course and the need for an emphasis on near perfection in the performance of equipment in video conferencing. Additional training for instructors who will use either of these formats may improve the adaptation of materials into a proper format for delivery. A follow-up study is planned to study differences in student ratings of the distance education class prior to implementation of teacher training and to compare these ratings to those obtained after teacher training.

Rezabek, L. L., & Others. (1989). *Using a computer-based audiographic telecommunication system for distance learning*. U.S.; Wyoming:

By combining the use of an existing teleconferencing network with new computer-based video technologies, the University of Wyoming has enhanced its ability to provide distance educational opportunities for students at remote sites across the state. The new computer-based audiographic system was tested during the fall semester of 1988 during the delivery of a course in visual literacy. In addition to the computer-based telecommunication system, instructional support for the delivery of the course included print materials, 16mm film, slides, and videotapes, which were mailed to the two sites where classes were held. Course development concerns included: (1) maintaining consistency between on- and off-campus sections of the course; (2) humanizing the delivery system; and (3) dealing with unique instructional design and delivery demands which emerged from the use of the technologies. Some of the suggestions for the design and development of similar courses using computer-assisted instruction and audiographic telecommunication systems include acknowledging the capabilities and limitations of the delivery system; reducing technophobia; and cautioning the students and teacher of the time, flexibility, and energy demands of the delivery system.

Rezabek, R. J. (1999). A study of the motives, barriers, and enablers affecting participation in adult distance education classes in an Iowa community college. , 246; Presented to University of Northern Iowa for Ed.D. 246. (EDRS Price MF01/PC10 plus Postage.)

This study explores the motives, barriers, and enablers that affect adult students in their decision to enrol in community college distance learning credit classes. Three

methodologies were utilized: (1) an online focus group of adult distance learning and adult education experts to identify the main issues and questions to be used in interviews with distance students; (2) a questionnaire given to 210 adult distance-education students (average age 35); and (3) in-depth interviews of 23 adults distance-learning community college students in northeast Iowa. Results of the interviews showed that many factors contributed to students' decisions to enrol. The overriding motive for most was the opportunity to attain a degree and/or improve their career in a format that minimized the impact on their work and family life. Reported barriers to enrolment included lack of money, not enough time, lack of study skills, coursework too difficult, and non-traditional age. Factors that enabled students to enrol included financial aid, the proximity of a college centre within a few miles, support and encouragement from others, a strong sense of determination or resiliency, and assistance and guidance received from college learning centre staff.

Roberson, T. J., & Klotz, J. (2001). *Chat: The missing link in on-line instruction*. U.S.; Mississippi:

As more courses in higher education move to an on-line format, a major concern that has arisen is the lack of personal interaction between the professor and student. The literature provides evidence that often on-line courses are configured and delivered in a style more often associated with independent study or correspondence work, i.e., students working independently to complete posted assignments at their own pace. While this format may work in some instances, it leaves a "missing link" in the learning curve for students since they lack the opportunity to benefit from the experience of structured dialogue and sense of community that can be created in a traditional on-site classroom environment. This paper supports the idea that students benefit from personal contact and access to the professor and learning is enhanced in courses with high degrees of interactivity among students. The paper suggests effective uses of e-mail, chat, and various Web-based tools to enhance interactivity and sense of community within the on-line course. Sample comments are also included from students who have taken courses that use the strategies described in this paper.

Rothkopf, E. Z. (2003). Costs of asynchronous distance ventures. *Economics of Education Review*, 22(4), 439-43.

A simple mathematical model is described which provides estimation procedures for comparing college-level, distance teaching costs with on-campus operations. It distinguishes content distribution from interaction costs, where cost equals work time required of teachers. In ordinary classroom teaching, content distribution costs rise with student throughput in quantal units that depend on class size. Interaction costs rise only moderately with the number of students. In asynchronous distance courses with asynchronous interactions with students, content distribution expenses are independent of throughput, but the costs of instructive interactions rise sharply with the number of students. As a consequence, distance teaching costs can become high when interactive procedures are very time-demanding. High-quality institutions that rely heavily on tuition income will be more likely to survive in the competitive

world of distance education, if scientific research and technological developments succeed in making the interactive components of instruction less effortful for teachers and in making content development more efficient.

Rovai, A. P. (2001). Building classroom community at a distance: A case study.

*Educational Technology Research and Development*, 49(4), 33-48.

The purpose of this study was to analyze a five-week graduate-level education course taught entirely at a distance via the Internet using the Blackboard.com SM e-learning system, with emphasis on exploring the dynamics of sense of classroom community. Subjects were 20 adult learners, evenly divided between males and females, who were administered the sense of classroom community index at the beginning and end of the course in order to measure classroom community. Findings indicated that on-line learners took advantage of the "learn anytime" characteristics of the Internet by accessing the course seven days per week, 24 hours per day. Sense of classroom community grew significantly during the course. Females manifested a stronger sense of community than their male counterparts both at the start and end of the course. Additionally, female students exhibited a mostly connected communication pattern while the communication pattern of males was mostly independent.

Royar, R. (1994). New horizons, clouded vistas. *Computers and Composition*, 11(2), 93-105.

The current state of computer-based distance learning is problematic. Computer-mediated distance education is a recent phenomenon that had to wait for the proliferation of personal computers, modems, and software. Six issues concerning computer-based distance learning are major investment versus minor rewards, a teacher-centered versus student-centred classroom atmosphere, increased teacher availability versus cost constraints, teacher-based pedagogy versus learner-based pedagogy, increased access to education versus faculty exploitation, and the availability of reference materials versus access costs. Medium-sized and small colleges that hope to offer distance-based programs might suffer the greatest number of problems in the attempt. The evolution of the New York Institute of Technology's distance-learning program is described.

Sachs, S. G. (1999). The mature distance education program--which way now?

*Performance Improvement Quarterly*, 12(2), 66-83.

Distance education programs that have been around for a long time risk being caught up in a groundswell of change brought by new interest in distance education fuelled by the explosive growth of the Internet. These mature programs need to understand the factors that led to their success, the issues likely to affect them over the coming years, and chart a course that brings the two together. This article looks at how factors such as eliminating service area boundaries, support from the top, focusing on large enrolment courses, moving to faculty-led course development, emphasis on instruction and not materials, and development of complete degree programs led to program success at one large American community college. It also looks at how issues such as changes in distance education faculty and students, lack of uniform

access to the Internet, the increase in distance education providers, and the need for student support services will play a role in future distance education program success. Finally, it looks at several trends that are likely to emerge from the current environment including the growth of state and regional virtual campuses, increased interest in partnerships, and the role of textbook publisher developed Web sites.

Sanchez, J., Stuckey, M. E., & Morris, R. (1998). Distance learning in Indian country: Becoming the spider on the web. *Journal of American Indian Education*, 37(3), 1-17.

The education of American Indians in the United States historically has been a tool of acculturation and assimilation. Recently, however, new technologies offer new alternatives and new possibilities to tribal communities. This essay examines the potential uses of distance learning for maintaining and sustaining American Indian tribal communities within the United States while allowing access to the information and skills that allow members of those communities' employment opportunities within the dominant society and its economy. It includes a brief examination of distance education in general, a discussion of traditional education in tribal contexts, some elaboration of that theme as it pertains to tribal uses of distance education technology, and an analysis of the potential outcomes and consequences of these practices.

Santally, M. I. (2005). From face-to-face classrooms to innovative computer-mediated pedagogies: Observations from the field [computer file]. *Journal of Interactive Online Learning*, 3(4), 1-14.

A study examined the perceptions of 15 students regarding an online master's level course in computer-mediated communications and pedagogy. The course was delivered by the University of Mauritius through e-learning. Findings revealed that although the students were convinced about the benefits and importance of reconceptualization of the teaching and learning process, several barriers to the efficient adoption and application of electronic learning were identified. These barriers related to difficulties adapting to the change in teaching and learning culture, lack of proficiency in Internet use and lack of technical support, professional and social commitments, Internet costs and access, and evaluation and assessment policies.

Santovec, M. L. (2005). Accessibility and universal design. *Distance Education Report*, 9(9), 3-4, 7.

The writer discusses the issue of universal design and accessibility to distance learning resources. Among other things, she considers how the incorporation of both Section 508 and the World Wide Web Consortium standards into universal design will allow people to use a wider range of technologies to access material, discusses some of the accessibility issues that can arise because of an emphasis on graphic design techniques, and explores the underlying premise of universal design, namely the separation of content from styling and the use of structural mark-up.

Schaeffer, B. (2004). Virtual savings? *School Administrator*, 61(4), 20-25.

Cost continues to be an issue for school districts offering online courses. Early users of online course delivery say that the main advantage is better educational access for students rather than cost savings. However, some educators believe that online professional development programs for teachers can bring cost savings and that the potential for savings in student courses also exists.

Schneider, S. P., & Germann, C. (1999). Technical communication on the web: A profile of learners and learning environments. *Technical Communication Quarterly*, 8(1), 37-48.

Part of a special issue on technical communication, distance learning, and the World Wide Web. The writers present demographic information about the age, sex, and ethnicity of students taking online courses at the University of Colorado at Denver, and Metropolitan State College of Denver. The data reveal that distance education courses are serving older students, more female students than are represented on the Internet as a whole, and more Caucasian than non-Caucasian students. They establish, furthermore, that distance education courses promote a shift to an active, learner-centred model and may, therefore, require student maturity and self-motivation. They point out that lack of equal access to technology remains a problem for distance education and hampers it from fulfilling its promise to offer access to educational opportunity to anyone, at any time, and from any place.

Schrum, L. (1998). On-line education: A study of emerging pedagogy. *New Directions for Adult and Continuing Education*, (78), 53-61.

Part of a special issue on adult learning and the Internet. Online courses demand new strategies for design and delivery. Guidelines for designing such courses can be divided into the areas of pedagogical, organizational, and institutional concerns. Pedagogical issues include the identification of learning goals, philosophical changes in teaching and learning, reconceptualization of the teacher's role, evaluation of student and instructor, and the stimulation of interactivity; organizational issues concern timing, the inclusion of face-to-face components, group interactions, and prerequisites; and institutional issues address faculty incentives, access and equity, credit decisions, ongoing evaluation, and technical support for teachers and students. Recommendations for individuals and organizations undertaking the provision of online education are provided.

Schrum, L. M. (2000). Guarding the promise of online learning. *The Education Digest*, 66(4), 43-47.

An article reprinted from *Future Courses: A Compendium of Thought about Education, Technology & the Future*. Although online learning could prove to be very good for society, its potential is under threat. Estimates suggest that by 2001, more than 75 percent of traditional colleges and universities in the United States will be using distance-learning technologies and techniques in one or more of their "traditional" academic programs. At the same time, higher education institutes are under pressure due to demands for greater access from government and competition from industry and for-profit companies. As a result, if one institution designs and

offers a program that will be delivered online, other institutions will almost certainly feel compelled to join the efforts and compete, which will probably lead to what has been termed "commoditization." The writer outlines the problems that may arise from the trend and discusses the need for safeguards to protect online learning.

Schrump, L., & Ohler, J. (2005). Distance education at UAS: A case study. *Journal of Distance Education, 20*(1), 60.

Increased pressure on the University of Alaska Southeast (UAS) to become more involved in distance education compelled UAS to commission a study of the perceptions, problems, and opportunities in the area of distance education as seen by three distinct groups in the university community: students, faculty, and staff (including administrators). The researchers used qualitative methods to gather data from which questionnaires were derived. The results suggest that all three groups see lack of leadership and coordination in distance education as the primary obstacle to improving and expanding offerings. Recommendations propose practices that support the needs of each group and the program in general.

Schwartz, R. (2003). Information and communications technology (ICT) agencies: Functions, structures, and best operational practices. *Info, 5*(3), 3-7.

A growing number of small states are in the process of establishing ICT agencies to address information society issues of e-government, e-infrastructure, e-industry, e-learning, and e-commerce. Some large countries are in the process of integrating telecommunications, IT, and broadcasting into a single ICT agency. This paper outlines the functional requirements for such an agency, and presents a range of international best practices for their focus and operation. The paper also suggests interim measures that can be taken before such agencies are legally established.

Shea, P., Pickett, A., & Li, C. S. (2005). Increasing access to higher education: A study of the diffusion of online teaching among 913 college faculty [computer file]. *International Review of Research in Open and Distance Learning, 6*(2), 1.

A study explored faculty satisfaction with online teaching conducted through a large, state-wide online program--the State University of New York Learning Network (SLN). Participants were 913 faculty members who taught at 33 colleges in the SLN in the 2003-2004 academic terms. Results identified four variables as being significantly associated with faculty satisfaction and their likelihood to embrace or persist with online teaching. These variables are levels of interaction in the online course concerned, technical support, a positive learning experience in developing and teaching the course, and the discipline area in which the faculty taught. Recommendations based on the study's results for institutional policy, faculty development, and future research are provided.

Sherritt, C. (1996). *A fundamental problem with distance programs in higher education*. U.S.; Wyoming:

According to a 1994 survey of higher education administrators and state politicians, the following are perceived as the biggest problems facing American higher education in the next millennium: meeting increased demands at a time of decreased

resources; increasing or maintaining access; using technology more efficiently; and sharing resources across state lines so that colleges and universities will not need to be all things to all people. Successful distance programs can increase access to education, provide valuable service to adult learners, and make excellent use of technology. Unfortunately, few institutions initiate distance education programs to reap those benefits. Academic departments have no strong mandate and few incentives to adjust their curriculum and instruction to fit distance education beyond cursory cooperation. Some institutions are failing to tailor their distance education programs to the needs of adult learners, and others are initiating such programs primarily to solve their budget problems. Education leaders who, however covertly, consider distance education programs the poor stepchild of higher education send tacit messages that off-campus programs and students are inferior. Those messages in turn militate against curricular and instructional adaptations for distance education and limit the amount of support for the human infrastructure needed to make distance programs work.

Shum, C., & Chan, K. C. (2000). The effectiveness of interactive television distance learning in principles of finance. *Financial Practice and Education*, 10(1), 175-83. This research studies the effectiveness of an interactive television (ITV) distance learning delivery mode on students' performance in principles of finance course. Contrary to the findings in other business disciplines, our empirical results suggest that remote-site ITV students had statistically significant poorer performance relative to regular students. Remote site ITV students who completed the course seemingly have better scores than regular students. However with other performance factors as controls and with the correction on survival bias in the analysis, ITV delivery mode is found less effective than the traditional classroom mode in principles of finance course. College administrators and professors should consider augmenting the ITV delivery format with other teaching tools to improve the effectiveness of the ITV delivery of principle of finance courses.

Sikora, A. C. (2002). *A profile of participation in distance education: 1999-2000. Postsecondary education descriptive analysis reports No. NCES2003154*. U.S.; District of Columbia: ED Pubs. This study examined the participation of undergraduate and graduate students in distance education. Students responding to the 1999-2000 National Postsecondary Student Aid Study who reported taking distance education courses for credit were asked about their experiences. Eight percent of undergraduates and 10% of graduate and first professional students reported taking distance education courses. Findings suggest that even though distance education participation rates were relatively low in 1999-2000, clear patterns of participation emerged for both undergraduates and graduate/first professional students. Students who reported participating tended to be those with family responsibilities and limited time. They were more likely to be enrolled in school part time and to be working full time while enrolled. Females were more likely than males to participate, and undergraduates majoring in education participated in distance education at a higher rate than did those majoring in most other fields of study. Similar patterns of participation emerged among

graduate and first-professional students. Both graduate and undergraduate students were more likely to take distance education courses over the Internet than via live or pre-recorded television or audio. About one half of respondents reported being as satisfied with their distance education courses as their regular classroom courses. In addition to the description of overall participation in distance education, the report includes a multivariate analysis that shows the residual relationship of various student characteristics to distance education participation. Appendixes contain a glossary and technical notes.

Slaughter, S., Kittay, J., & Duguid, P. (2001). Technology, markets, & the new political economy of higher education. *Liberal Education*, 87(2), 6-17.

An adaptation of presentations given at the 2001 Association of American Colleges and Universities Annual Meeting is presented. The writers discuss markets, technology, and the new political economy of higher education. They argue that Internet-based education may be reshaping markets, technology, and higher education and specifically that professional labour, curricular products, and student access are being subtly but thoroughly reorganized; discuss the dynamics of higher education as it starts to respond to and become part of a market exchange and argue that the next professional challenge for administrators and faculty members is to develop a kind of skill that they do not have currently in assessing and analyzing a heterogeneous set of offerings and services; and consider what is involved in going to market, with learning as the commodity and technology as the means of getting to that market.

Smith, C. K. (1996). *Convenience vs. connection: Commuter students' views on distance learning*. AIR 1996 annual forum paper. U.S.; Indiana:

A survey investigated the attitudes of commuter students toward distance education. Respondents were 397 students attending Purdue University Calumet (Indiana) for at least two semesters. Results indicated that if the students had the option of taking a course at home or in a classroom, 59 percent would use the distance option; over half of these were female. Of the 30 percent definitely not interested in the distance option, a large majority of both traditional-age and older students preferred the immediate feedback in a classroom, participation in classroom discussion, ability to talk with the instructor and other students before and after class, and being in a setting focused on learning. Almost half liked the structure of being in a particular place at a particular time. When asked if receiving instruction at home could be satisfying, most said it would be so if combined with some classroom instruction; 29 percent felt receiving an entire course at home would be satisfactory, and 18 percent felt it would not be satisfactory. It is concluded that while students are interested in the distance learning option, they have some reservations. It is also suggested that attempts to make distance learning more like traditional campus-based learning would be costly.

Sorensen, C. K. (1996). *Students near and far: Differences in perceptions of community college students taking interactive television classes at origination and remote sites*. U.S.; Iowa:

In 1992, the state of Iowa received the first of three grants to implement courses using the Iowa Communications Network (ICN), a fiber optic network that delivers live, full-motion instruction allowing two-way interaction between students and instructors. To evaluate the effectiveness of the ICN courses, surveys were distributed to 326 students in 22 summer courses at 8 community colleges to determine their perceptions related to technical aspects, sense of belonging in the course, instruction, course management, and overall satisfaction. Responses were received from 210 students in 18 courses, representing 58% of the courses taught over the ICN during summer 1994. Study findings included the following: (1) 97% of the respondents indicated that they had no trouble getting access to the classroom, while 93% agreed that the instructor paid attention to remote site students; (2) 90% stated that they felt that they were part of the class; (3) 88% indicated that, overall, they were satisfied with the course, while 87% indicated that they would take another interactive television class; and (4) remote site students appeared to be less satisfied than students at the origination site, with 11 survey items receiving negative responses by more than 25% of the remote respondents and only 3 items receiving such ratings by origination students. Recommendations for program improvement are included.

Spencer, Bruce. (1995). Removing barriers and enhancing openness: Distance education as social adult education. *Journal of Distance Education*, 10(2), 87.

Spradley, E. (1993). Assisting adult higher education via personal computer: Technology and distance education. *CAUSE/EFFECT*, 16(1), 37-42.

Thomas Edison State College (New Jersey) has developed a computer-assisted distance learning system to make undergraduate study more accessible, efficient, and effective for non-traditional students. The three main components: an infrastructure to provide varied technical services; an independent study course system; and diagnostic, online pre-tests for the for-credit testing program.

Stein, W. J., & Jetty, M. (2002). The story of distance learning at Salish Kootenai College. *Journal of American Indian Education*, 41(2 part special issue), 19-28. Part of a special issue on American Indian higher education. Salish Kootenai College (SKC) in Montana has become a leading institution in providing distance education opportunities. Located on the Flathead Reservation, the college has sought to assist in the preservation and enhancement of the languages and cultures of the Salish and Kootenai people. It has successfully dealt with political boundaries, access dilemmas, and curriculum challenges in developing the program, although financial sustainability has continued to be a major programmatic issue. Moreover, SKC has learned several lessons from its involvement in distance education, and its entrance into the field acts as a source of inspiration for all tribally controlled colleges and universities and other small institutions of higher education that seek to serve the poorest members of society.

Stout, V. J. (2002). Building relationships with learners at a distance. *National Business Education Yearbook*, (40), 102-115.

The development of relationships with distance education students becomes more complicated as access to distance education grows easier and more widespread. Sources of complexity include the comparison of distance education with face-to-face instruction and the status and combination of the crucial elements of energy, time, space, and choice related to interpersonal relationships. Successful instructional relationships emerge from the development of relationships between instructor and student, student and content, and student and student. Challenges to building these relationships in distance education include time, readiness, and technology. Instructors can overcome these challenges by employing the instructional systems design model. This model involves adhering to principles of good instructional design and ongoing improvement of practices and processes.

Stover, C. (2005). How Penn state converted a landmark study into a program evaluation framework. *Distance Education Report*, 9(7), 1, 6-7.

David DiBiase of Pennsylvania State University's Geography Department converted a landmark study--"The Sloan Consortium Report to the Nation: Five Pillars of Quality Online Education"--into an evaluation framework for a new online program that he developed. For the framework, DiBiase used the five pillars described in the report, namely learning effectiveness, student satisfaction, faculty satisfaction, cost effectiveness, and access.

Su, B. (2004). Dual-mode programs: A quagmire for distance education development? *Educational Technology*, 44(5), 50-54.

The writer discusses the problems associated with dual-mode programs. Dual-mode programs are academic programs that offer face-to-face courses to residential students and online courses to distance students. The problems associated with these programs include the incorrect assumptions underlying the perceived pedagogical advantages of dual-mode programs, making faculty responsible for instructional design, and the intractable issues of cost, access, and quality in the operation of dual-mode programs. One promising alternative to dual-mode programs is the idea of a distance education consortium, where many institutions share a common portal, course development, and marketing costs.

Sullivan Patrick. (2001). Gender differences and the online classroom: Male and female college students evaluate their experiences. *Community College Journal of Research and Practice*, 25(10), 805-818.

Reports that, based on a survey of 195 distance education students, significant differences were found between the way male and female students identified the strengths and weaknesses of the online environment. Also finds that online courses are of great value to non-traditional students, particularly female adult learners with children or family responsibilities.

Sullivan, P. (2002). "It's easier to be yourself when you are invisible": Female college students discuss their online classroom experiences. *Innovative Higher Education*, 27(2), 129-144.

Explored the experiences of female college students who had participated in online courses. Found that while they responded to the online environment in a variety of ways, the majority had positive things to say; a large number identified "anonymity" as the most important positive aspect of the online learning environment.

Summers, M., & Others. (1996). The camera adds more than pounds: Gender differences in course satisfaction for campus and distance learning students. *Journal of Research and Development in Education*, 29(4), 212-219.

This study compared male and female traditional and distance education students' perceptions of their college instructors. Surveys indicated that traditional students had a pattern of male students giving lower evaluations to female instructors. Conversely, distance education females gave significantly lower evaluations to their female instructors.

Thompson, L. F., & Lynch, B. J. (2003). Web-based instruction: Who is inclined to resist it and why? *Journal of Educational Computing Research*, 29(3), 375-385.

Despite the potential benefits of Web-based Instruction (WBI), not everyone welcomes online learning opportunities. This study examined the psychological processes underlying opposition to WBI by collecting survey data from 257 learners enrolled in a large south-eastern university.

Vaidhyanathan, S. (2002). The context-provider paradox: Universities in the information ecosystem. *Academe*, 88(5), 34-37.

Universities are abandoning their role as national parks in the information ecosystem in favour of becoming content providers. They are putting too much emphasis on producing services, software, and information resources that they hope will be marketable, with the result that their role as sources of teaching and research will become taxed and limited. They are experiencing a content provider paradox in that researchers and teachers need broad freedoms to access, change, and distribute content in order to create new knowledge but universities, as content providers, are seeking to employ highly restrictive contracts and encryption schemes to create artificial scarcity so that they can demand monopoly prices for their services. They are rushing to commodify education, with pernicious results.

Vail, K. (2005). The world of E-learning. *The American School Board Journal*, 192(9), 30-31.

Part of a special section on what the National Education Technology Plan means for educators. The Department of Education's third National Education Technology Plan can help educators teach the Millennials, the generation of children born between 1982 and 2000. The plan, based on a survey of student opinions and ideas, urges schools to strengthen leadership, consider innovative budgeting, support e-learning and virtual schools, encourage broadband access, move toward digital content, and

integrate data systems. However, the plan is being introduced at a time when the federal government is not putting new money into technology education.

Valasek, T. (2001). *Student persistence in web-based courses: Identifying a profile for success*. U.S.; New Jersey:

This paper reports the results of a study designed to identify common characteristics of students persisting in eight Web-based courses. An online survey was utilized to collect demographic information and Web instruction experience from students who completed online coursework. Results indicated that: (1) 59 out of 112 students completed the survey; (2) 34% had previous online course experience; (3) students reported logging into the course an average of 6.6 times per week; (4) 91% worked more than 10 hours a week; and (5) the average age for students who passed the courses with a C or better was 27.9, and the average age of students who failed or withdrew was 22.1. The researcher identified the following indicators of student persistence and success in online courses: (1) development of realistic expectations about how much time online learning will demand; (2) organization and ability to manage the demands of classes, work and home; (3) confidence using a computer; (4) the ability to keep pace with course work and assignments, logging in regularly and frequently; and (5) active participation in online class discussions.

Van Dusen, G. C. (2000). Digital dilemma: Issues of access, cost, and quality in media-enhanced and distance education. *ASHE-ERIC Higher Education Reports*, 27(5), 1-120.

The writer discusses issues of access, cost, and quality in media-enhanced and distance education. He identifies age, income, race and ethnicity, gender, previous education, geography, household type, physical disabilities, and learning disabilities as the specific obstacles facing higher education institutions trying to leverage technology to accommodate unprecedented growth. He examines a range of issues, including institutional mission and vision, efforts at collaboration and cooperation, price versus cost of technology, tangible versus intangible costs, and student technology fees and computer leasing arrangements that must be dealt with if the economic benefits of technologically mediated learning are to be realized. He explores the problem of Internet content, instructional design considerations, online assessment, and institutional support of faculty who integrate technology into instruction as specific issues of quality and effectiveness and offers seven conclusions and seven recommendations concerning the issues of access, cost, and effectiveness in higher education.

Verbeeten, M. J. (2001). Learner-centred? It's just a click away---. *Journal of Educational Technology Systems*, 30(2), 159-170.

There are two revolutions sweeping through higher education today: the first one is the move from teacher- to learner-centred education. The second one is the move from the traditional to the virtual classroom. This article examines the most recent literature on Web-based instruction by looking at authors who, based on their own personal experiences, take a positive approach to Web-based education, and who feel that Web-based instruction is learner-centred. Characteristics of learner-centeredness

as related to Web-based education are: access anywhere and at any time, and student engagement. Student engagement is accomplished through the creation of active learning modules, collaboration among students, and close teacher-student interaction. Virtual classes are effective since they address different learning styles. The article concludes that assessment of learning outcomes is a topic that needs to be addressed in future research.

Watson, L. W. (2004). Access and technology. *New Directions for Community Colleges*, (128), 31-38.

Community colleges are well positioned to provide underserved student populations with access to computer technology. This chapter explores the issues of access and technology from multiple perspectives in the community college, and explains how community colleges can develop a foundation for their technology plan.

Weigand, K. (2000). *Adult learners and distance education evaluation: Implications for success*. U.S.; Florida:

The telecourse education program created by Barry University in Florida was evaluated by use of a questionnaire designed to measure students' overall satisfaction or dissatisfaction with the telecourse process. The questionnaire contains questions about how students heard about the telecourses, whether services were accommodating, what they liked most and least about the process, their motivation, their feelings about the onsite sessions, whether they will register for another telecourse, and future courses they would like to see delivered. Evaluation questionnaires were sent to students' homes after the end of each course, with assurance of anonymity. Some of the findings were the following: (1) student motivation for taking telecourses included saving time, transportation problems, disabilities, trying something new, and preferring this method of learning; (2) advantages of taking telecourses were setting one's own schedule, flexibility, ability to repeat viewing of tapes, more time to write notes and assimilate information, guest speakers, and no need to travel; and (3) disadvantages included that it is easy for students to get behind, testing, the classes take more time and require more work than regular classes, and missing interaction with other students. The evaluation concluded that the students are highly enthusiastic about telecourses and excited about this new method of course delivery. The university plans to continue to listen to its students through the evaluation process in order to continue to develop the program successfully.

Weiss, R. E., Knowlton, D. S., & Speck, B. W. (2000). Principles of effective teaching in the online classroom. New directions for teaching and learning. The Jossey-Bass higher and adult education series. *New Directions for Teaching and Learning*, (84) This volume highlights the challenges that electronic classrooms pose to faculty and students. The papers discuss both the pedagogy and the design of online courses. The 11 papers include: (1) "A Theoretical Framework for the Online Classroom: A Defense and Delineation of a Student-Centred Pedagogy" (Dave S. Knowlton); (2) "Designing Instruction for Learning in Electronic Classrooms" (Gary R. Morrison and Peter F. Guenther); (3) "Components of the Online Classroom" (Zane L. Berge)

(4) "Making Decisions: The Use of Electronic Technology in Online Classrooms" (Michael Simonson); (5) "Students as Seekers in Online Courses" (Mark Canada); (6) "Accommodating Students with Special Needs in the Online Classroom" (Thomas J. Buggey); (7) "Humanizing the Online Classroom" (Renee E. Weiss); (8) "Promoting Deep and Durable Learning in the Online Classroom" (Douglas J. Hacker and Dale S. Niederhauser); (9) "Evaluating Students' Written Performance in the Online Classroom" (John F. Bauer and Rebecca S. Anderson); (10) "The Academy, Online Classes, and the Breach in Ethics" (Bruce W. Speck); and (11) "Epilogue: A Cautionary Note about Online Classrooms" (R. W. Carstens and Victor L. Worsfold).

Whiteman, J. A. M. (2002). *The adult learner in the computer mediated environment*. U.S.; Florida:

Computer-mediated instruction is particularly well-suited to typical community college students because it offers an alternative to the time and place constraints of traditional classrooms. Key characteristics of computer-mediated learning are as follows: instructors and students are separated by distance; instruction is delivered via computer technologies; communication is interactive; and learning is done asynchronously. Computer-mediated distance learning allows students to practice and acquire the skills needed to compete in a technology-dependent knowledge society. Virtual classrooms allow higher levels of learner participation by allowing students to take the time required to give well-considered responses and by leaving permanent records of discussions to which students can refer. The following are some guidelines for practitioners designing computer-mediated learning environments for adult learners: (1) provide opportunities for learners to create scaffolds within which they can make sense of new information; (2) create a learning community that is based on a high degree of interaction and sense of cooperation; (3) ensure that any synchronous communication tools (for example, chat rooms) included within the computer-mediated learning system coincide with the content contained in particular assignments; (4) build feedback mechanisms into the course; (5) view the online instructor's role as that of a facilitator; and (6) provide adequate, accessible technical support.

Whittington, L. A. (1995). *Factors impacting on the success of distance education students of the University of the West Indies: A review of the literature*. Barbados: This review of the literature examined a number of specific factors as they relate to the persistence and achievement of persons involved in distance learning. These factors are: (1) media of instruction; (2) instructor contact; (3) locus of control; and (4) certain demographic characteristics such as age, gender, income, and educational level. In preparation for the review, a search of a number of databases, including the Educational Resources Information Center (ERIC), Dissertation Abstracts Online (DAO), and Psychological Abstracts, was undertaken using these descriptors: attrition, dropout or persistence in distance education, achievement and performance in distance education, locus of control, instructor support and delivery model and demographic factors impacting distance education. It is clear from the review that the findings regarding the impact of the various factors on educational outcome are

mixed due to inconclusive research findings and the lack of generalizability, a finding attributed to the lack of common definitions.

Wilson, P. N. (1998). To be or not to be? Selected economic questions surrounding distance education: Discussion. *American Journal of Agricultural Economics*, 80(5), 990-93.

Wisan, G., Roy, P. G., & Pscherer, C. P., Jr. (2001). *Time as a dimension of the digital divide: Profiles over time of students taking online, face-to-face, or mixed delivery classes at a large virtual university. AIR 2001 annual forum paper*. U.S.; Maryland: A large virtual university, a participant in a major distance study, is tracking students' enrolment in online or both online and face-to-face classes (i.e., mixed). Although an online students' profile provides data for examining the digital divide, one-time snapshots are inadequate. Time must be included as a dimension of any analysis of demographic groups' participation in online education. Two aspects of time were analyzed: calendar time (3 years of trend data) and time in relationship to degree. The paper provides data on the ethnic, gender, age, and demographic distribution of online and "mixed" students. In all, data were available for 16,092 students in 1999, 18,311 in 2000, and 20,920 in 2001. Trend data on how ethnic groups and other demographic groups are self-selecting classes with different delivery formats speak more directly to understanding the digital divide. The paper provides 3 fiscal years of percentages (FY 1999 to FY 2001) of different demographic groups (ethnic, gender, age, and geographic) enrolment in online, mixed, and face-to-face education at a large, substantially virtual university during a period of rapid expansion in online education. The paper discusses the implications for the digital divide of this enrolment trend data.

Wisconsin Univ. System, Madison. (2002). Distance learning, 2002: Proceedings of the annual conference on distance teaching and learning (18th, Madison, Wisconsin, August 14-16, 2002). 468.

These proceedings contain 90 papers that address important human factors in distance education from several perspectives, provide insights into how those factors contribute to successful outcomes, and describe practical methods for implementing similar approaches in other settings. They include "Is Your E-Everything Accessible to Everyone?" (Anderson et al.); "Social Dynamics of Online Learning" (Baker, Woods); "Self-Directed Executive Education Courses" (Beatty et al.); "Managing the Development of Technology- Based Courses" (Bennett et al.); "Substituting for Yourself" (Bergmann, Bergmann); "Online Learning in K-12 Schools" (Blomeyer, Hemphill); "Faculty Preparation" (Brown, Henderson); "Management and Delivery of Technical BS Degree Completion and MS Degree Programs to Distance Learners" (Cockrell, Pearson); "PJs or Uniforms? Reaching Those Who Can't Reach You" (Coyne, Fitzner); "Design Issues, Standards, and Technology" (Culver); "State-wide Brokerage House for Online Education" (Deau et al.); "Faculty Development Models in Distributed Learning" (Greer); "Multipoint Videoconferencing" (Hayden et al.); "Building a Highly Accessible Web-Based Training Course" (Hedenblad, Rafferty); "In depth Look at Strategies for Mentoring

Online Adult Learners" (Jiang et al.); "Helping Faculty Develop Online Courses at a Distance" (Kahrhoff, Li); "Instructional Methods in Online High School Courses" (Keller, Cakir); "Instructional Strategies for Distance Education" (King et al.); "Online Education Investment Strategy" (Kraenzel); "Pedagogy, Multimedia, and Distance Education" (Krug); "Third Generation Online Courseware" (Kryczka, Hughes); "Learning by 'Doing' and 'Experiencing'" (Lim); "Providing Direct Service Distance Education to Students with Disabilities" (Magnuson, Kuehn); "Designing the Blend for Audiences in Developing Countries" (Miller); "Games to Teach By" (Mungai et al.); "Development of a Software Tool for Multi-institutional Faculty with Minimal Computer Experience" (Namuth, Guru); "Building Effective Virtual Teams Using Selection Interviews and Peer Assessment" (Newman); "Delivering Interdisciplinary, Competency-Based Professional Education Online" (Olson, Tribby); "Concentric Model for Evaluating Internet-Based Distance Learning Programs" (Osika, Camin); "Strategic Planning Process Model for the Implementing of Distance Education in Higher Education" (Pisel); "Designing a Blended-Delivery Course for Higher-Order Cognitive and Affective Learning" (Powell, Pisel); "Designing Web-Based Case Simulations for Medical Students" (Relan); "Administrative Strategies for the Online Classroom" (Rhoda et al.); "Assessment in Online Courses" (Runyon, Von Holzen); "Becoming a Learning Community" (Santo); "Cooperative Design Fostering Diversity and Interactivity" (Sarlin); "Effectively Using Self-Assessments in Online Learning" (Schulze, O'Keefe); "Writing for the Web Using 'Just-in-Time' and Performance Support Strategies" (Sheen et al.); "Increasing the Quality and Efficiency of Web-Based Course Production" (Stein); "Creating Course Evaluations for E-Learning" (Stoll, Ellis-Brye); "Institutional Responses to Plagiarism in Online Classes" (Stover, Kelly); "Assessing Career Impacts of an Internet Degree Program for RNs" (Taube et al.); "Creating Virtual Communities to Support Online Instructors" (Tompkins et al.); "Evaluation of Student Satisfaction with Distance Learning Courses" (Wagner et al.); "Experiential Learning Activities in Distance Education" (Westera); "Are You Practicing What Research Is Preaching for Distance Learning?" (Wijekumar); and "Instructor and Student Perceptions/Attitudes on the Design of Instruction for the Internet and ITV" (Zheng, Smaldino).

Witt, N., & Sloan, D. (2004). Access as the norm, not as an add-on. *The Times Higher Education Supplement*, (1638), 14-15.

The most effective way to ensure the accessibility of a piece of e-learning content is to involve people with disabilities in its development. In the long term, the issue of accessibility in e-learning must be treated in a holistic manner, which involves examining the role of the relevant Web site in the overall delivery of learning and teaching.

Yang, Y., & Cornelius, L. F. (2004). *Students' perceptions towards the quality of online education: A qualitative approach*

How to ensure the quality of online learning in institutions of higher education has been a growing concern during the past several years. While several studies have focused on the perceptions of faculty and administrators, there has been a paucity of

research conducted on students' perceptions toward the quality of online education. This study utilized qualitative methods to investigate the perceptions of students from two universities and one community college regarding the quality of online education based on their own online learning experiences. Interviews and observations were conducted with three students. Various documents were collected, digital and printed. Positive and negative experiences of students were examined. Factors that contribute to those experiences were also identified. The findings of this research revealed that flexibility, cost-effectiveness, electronic research availability, ease of connection to the Internet, and well-designed class interface were students' positive experiences. The students' negative experiences were caused by delayed feedback from instructors, unavailable technical support from instructors, lack of self-regulation and self-motivation, the sense of isolation, monotonous instructional methods, and poorly-designed course content. The findings can be used by instructors to understand students' perceptions regarding online learning, and ultimately improve their online instructional practices.

Yorke, M. (2004). Retention, persistence and success in on-campus higher education, and their enhancement in open and distance learning. *Open Learning*, 19(1), 19-32. Terms such as retention and persistence reflect the interests of different parties. Much of the empirical and theoretical literature deals with retention from a "supply-side" perspective. This article has three main sections. The first consists of a summary of recent empirical findings from surveys of students who left their on-campus programmes prematurely. The second section, which discusses a range of theoretical formulations, begins to shift the thrust of the article from on-campus programmes towards open and distance learning. The third considers some implications for persistence in open and distance learning that follow from the preceding two main sections. The article concludes by stressing the importance of the student experience.

Young, J. R. (1998). For students with disabilities, the web can be like a classroom without a ramp. *The Chronicle of Higher Education*, 44, A31-2. Efforts are underway at some U.S. colleges to accommodate students with disabilities using the World Wide Web. Fearing lawsuits or trying to be helpful, some colleges are seeking to design Web pages that are accessible to students with blindness, deafness, or other disabilities and to provide computer hardware to meet these students' needs. However, the rapid pace of change on the Web and the difficulty of providing text-based alternatives to interactive features based on graphics and animation mean that disabled users still face an uphill struggle in using the Web.

Young, J. (2004). Virtual schools: Personalizing learning online. *Media & Methods*, 41(2), 11-12. Some of the benefits of virtual schools and online learning are outlined. These benefits relate to enhanced course selection, Internet-based course delivery, flexible schedules, individualized instruction, and access to qualified teachers. Information

on the essential components of a successful virtual school and lists of virtual schools and online content providers for virtual schools are provided.

### References – Other Geographic Areas

Abbott, L., & Others. (1995). Videoconferencing in continuing education: An evaluation of its application to professional development at the university of Ulster (1990-95). *Educational Media International*, 32(2), 77-82.

Describes how videoconferencing was used at the University of Ulster (Northern Ireland) as a medium to deliver three modules to continuing education students over a five-year period. Discusses planning and implementation, and the move from conventional teaching to distance learning. Notes professional development reached an effective level and in one instance content improved.

Adey, D. C., & Others. (1987). *Distance education in southern Africa conference, 1987. Papers 7: Late submissions*. South Africa:

Ten papers and four abstracts of papers from the University of South Africa's Conference on Distance Education are presented. They include: "Access to Higher Education and Training in the South Pacific: The Role of Telecommunications and Distance Education" (Som Naidu); "Distance Education in Japan" (Takashi Sakamoto); "The University for Distance Education in Colombia: An Alternative Form of Education" (Linda Gladys Behaine de Cendales); "Development of Distance Education in Sri Lanka" (Dayantha Wijeyesekera); "Distance Education in India: Application of Modern Technology" (K.K. Sud); "The Teaching of Life Sciences at Everyman's University" (Ruth Arav); "Distance Teaching as an Integral Part of the In-Service Education of Mathematics, Physical Science and Biology Teachers" (Jan Nel, Dave Finnemore, Steve Rhodes); "UNISA's Documentation Section" (B.J. van der Walt); "Interactive Multi-media Learning: A Business Case Study in Distance Learning" (abstract only, R.C. Johnson); "Distance Learning: The South African Air Force Experience" (Neville Parkins); "Text Design in Distance Education: Print and Facilitating Adult Education" (abstract only, John Aitchison); "Distance Education in Developing Countries: The Indian Scene" (abstract only, B.S. Jain); "Distance Education and the Educator's Regime of Literacy" (abstract only, John Aitchison); and "Review of the Goals, Methods, Accountability and Future Planning of the Department of Library and Information Science of the University of South Africa" (Anna Louw).

Adult Higher Education Alliance. (2001). The changing face of adult learning. Adult higher education Alliance/ACE conference proceedings (Austin, TX, October 10-13, 2001). 193.

These proceedings included the following papers: "The Language of Interdisciplinary Programs or 'What Do You Mean by That?'" (Ezzell, Turner); "When Mothers Become Students: Impact on Children and the Family System" (Burns, Gabrick); "Multi-Discipline Theorizing Meets the Blackboard: The Evolving

Discourse Community" (Currey); "Streaming Media: Focus on the Learner" (Meacham); "Changing Student Faces: Adult Learners from Sponsored Workplace Programs" (Oaks); "Preparing Immigrant Adults for Post-secondary Education Through On-line Courses: Their IT (Information Technology) Access" (Diaz); "The Role of Conscious Reflection in Experiential Learning" (Coulter); "Building Online Learning Communities" (Resta et al.); "Born to be Wired" (Stewart et al.); "The Digital Divide: Adult Learners in Cyberspace" (Flowers, Woodruff); "The Changing Face of Theological Education for Adult Learners" (Hoy); "The Eye of Contemplation: Integrating Spiritual Empiricism with Adult Teaching/Learning" (Trott, Paige); "The Trouble with Systematic Racism" (Coffman et al.); "Service Learning in Adult Accelerated Programs" (Mitchell); "Online Adult Learning and Emotional Intelligence: Oxymorons?" (Hill, Rivera); "Inside the Circle of a Distance Learning Community" (Terry); "Teaching the Oppressor to be Silent: Conflicts in the 'Democratic' Classroom" (Cale, Huber); "Redefining Diversity Through Technology: Preparing Global Citizens and Building Inclusive Communities" (Caesar, MacCalla); "Online Conferencing as a Tool for Graduate Learning" (Payne et al.); "The Adult Learner in Academic Midlife: Persistence, Support and Integration in a Distance Learning Doctoral Education Program" (Stein, Glazer); "The Effect of Learning Styles on Success in Online Education" (Rothenberger, Long); "Adult Women Graduate Students: Imposters in the Academy" (Studdard); "The Changing Face of Adult Learning: A South African Perspective" (Thomas, Wessels); "Are We Being Transformed? High Achieving 'Imposters' Building Collegiality in an Upper-Division Seminar on Adult Education" (Lauderdale, Lantard); "A Conceptual Framework for Examining Factors which Influence Adult Learners' Use and Learning of Internet Technologies" (Chao); "The Texas Adult Education Credential Model" (Falk); "Standardizing Texas Adult Educator Professional Development: Adult Education New Teacher Project" (Jones); "The Good Fight: Nineteenth Century American External Degree Programs" (Pittman); "Faculty as Adult Learners: A Case Study of a System of Professional Development and Evaluation for Adjunct Faculty" (Turner, McCauley); "Factors Influencing Non-participation of African-American Male Inmates in Correctional Educational Programs" (Thornton).

Al-Jarf, R. S. (2002). *Effect of online learning on struggling ESL college writers*. Saudi Arabia:

Two groups of freshman students participated in the experiment. They were enrolled in their first ESL writing course. Before instruction, both groups were pre-tested. They wrote an essay. T-test results showed significant differences between both groups in writing ability. The experimental group made too many errors and had many writing problems. Both groups covered the same in class material, assignments and assessment. In addition, the experimental group used a Blackboard online course from home. Experimental students posted their threads, wrote short paragraphs and posted stories and poems. They located information in sites like "Yahoo Movies" and "WebMD." They word-processed their paragraphs and checked their spelling. At the end of the course, both groups were post-tested. They wrote an essay. Analysis of Covariance (ANCOVA) results showed significant differences between both

groups. The experimental group made more gains as a result of web-based instruction. They became more proficient, made few errors and could communicate easily and fluently.

Alsunbul, Abdulaziz. (2002). Issues relating to distance education in the Arab world.

*Convergence (Toronto, Ont.) [H.W.Wilson - EDUC], 35(1), 59.*

A study examined distance education issues in the Arab World, including the role of the Arab League Educational, Cultural, and Scientific Organization (ALESCO) in promoting distance education. Data were obtained from a review of the literature and the researcher's personal experience in the field. Findings revealed that ALESCO was the first organization in the Arab world to adopt distance education, its designation appearing for the first time in ALESCO literature. Moreover, its work inspired some subregional organizations to consider the launch of distance education initiatives. In addition, findings highlighted a number of major issues relating to distance education issues in the Arab world. These issues were related to a lack of vision, politics, information technology, instructional material, quality assurance, instructional staff, students' habits, student support services, and cost considerations. Recommendations for promoting distance education in the Arab World are provided.

Asbee, S., & Woodall, S. (2000). Supporting access in distance education through student-student mentoring. *Journal of Access and Credit Studies, 2(2), 220-232.*

A small-scale project matched 16 new students in the Open University with student mentors. The value of the experience was immeasurable for some. Implementing it on a wider scale might be cost effective in terms of adult student retention.

Baskin, C., Barker, M., & Woods, P. (2005). When group work leaves the classroom does group skills development also go out the window? *British Journal of Educational Technology, 36(1), 19-31.*

In moving towards what Lemke (1996) terms the interactive learning paradigm, higher education has adopted two key principles consistent with group learning technologies: learning is always mediated by and occurs through language (Falk, 1997; Gee, 1997); and learning is distributed across a range of other people, sites, objects, technologies and time (Gee, 1997). A third and relatively recent principle to emerge on the higher education scene that seems to contradict accepted views of group learning technologies is that: many universities now choose to offer learning resources online. This paper asks whether Information and Communication Technologies (ICTs) are robust enough to support, sustain and address industry, employer and government calls for greater attention to group skills development in university graduates. Data features an examination of respondent feedback (n 171) in an ICT-rich group work setting, and the subsequent ratings of group skills development over a 13-week period. This discussion offers an account of learner outcomes by adopting Kirkpatrick's (1996) four levels of evaluation of learning as a classification scheme for determining learner satisfaction (Level One), the effectiveness of learning transfer (Level Two), its impact on practice (Level Three) and the appropriation of learning behaviours by participants (Level Four). The contrasting patterns of ICT use between female and male users in the data are

discussed in relation to building social presence and producing social categories online. Differences reported here indicate that ICT group work is moving forward, but opportunities to challenge rather than reproduce existing learning relations and differences, remain largely unresolved.

Bates, Aw, & Gpe, Jose. (1997). Crossing boundaries: Making global distance education a reality. *Journal of Distance Education*, 12(1/2), 49.

Blumenstyk, G. (1999). Distance learning at the Open University. *Chronicle of Higher Education*, 45(46), A35-A38.

The success of Great Britain's Open University has become a model for distance education in the United States. The Open University is non-selective in admissions and designs its courses for part-time students and working adults. It plans to begin enrolling American students in a new sister institution, the United States Open University.

Bower, B. L., Ed, & Hardy, K. P., ed. (2004). From distance education to E-learning: Lessons along the way. *New Directions for Community Colleges*, (128), 5-91. A special issue on the journey from distance education to electronic learning is presented. Articles discuss changes and challenges in distance education, maxims for creating and sustaining a successful electronic learning enterprise, institutional issues that arise when distance learning joins the mainstream, issues and challenges associated with access and technology, the cost of electronic learning, instructional and work life issues for distance learning faculty members, new roles for student support services in distance learning, Oregon's state-wide distance learning collaborative, approaches to meeting new technological challenges, and policy as an inconspicuous barrier to the expansion of electronic learning. An annotated directory of additional information and resources for distance educators at community colleges is also provided.

Boylan, C., & Others. (1994). Audiographic teleteaching in pre-service teacher education. *Education in Rural Australia*, 4(2), 23-27.

Australian teacher education students responded to a questionnaire evaluating telematics teaching and learning strategies introduced in their pre-service rural education courses. Overall, students responded positively, indicating that the technology was easy to use and that it was a good way of providing quality education and curriculum diversity for isolated students.

Brett, P., & Nagra, J. (2005). An investigation into students' use of a computer-based social learning space: Lessons for facilitating collaborative approaches to learning. *British Journal of Educational Technology*, 36(2), 281-292.

Provision of computers in universities for self-study is taken for granted and is seen as a "must have" educational resource, yet it is very expensive to fund. Students report that they use the Internet as their first stop in approaching research tasks. Learning theorists posit the important role of social interaction in contributing to learning. The use of collaborative methodologies such as group work also illustrates

the importance, and perceived beneficial role of, learning with others. However, in general, student access to computers for self-study in UK Higher Education is provided through large rooms furnished with serried ranks of computers, which do not allow or encourage computer-based collaborative working. This study addresses this mismatch between approaches to learning and the way universities make computers available to learners. The University of Wolverhampton provides a social learning space with 24 computers on four fishbone-shaped tables, in a room without any restrictions on talking, eating, or drinking. It was provided so as to encourage learners to work collaboratively and to be able to integrate the use of a computer whilst doing so. This paper reports the initial findings of a study into its use, through questionnaires, observational data, and interviews. Has the provision of a computer-based collaborative learning space positively affected approaches to computer-based self-study? The results of this study inform how best Higher Education institutions might provide computer access to learners so as to encourage collaborative working and positively affect student approaches to their learning.

Bruce, N. J. (1992). Ensuring access and quality in open learning programmes: Communication and study skills training for ESL-medium higher education. *Hong Kong Papers in Linguistics and Language Teaching*, 15  
Tertiary institutions worldwide are catering increasingly to adult, part-time students who are entering higher education for the first time. This paper addresses the compound problems that these students face in attempting to pursue a distance education in a second language. It offers the specific example of Hong Kong and the access and degree programs offered by The University of Hong Kong's School of Professional and Continuing Education. The paper analyzes the types of study and communication problems open learning students may bring with them to their studies, and recommends a policy of communication and study skills training as a means of ensuring both program quality and student access to full degree programs.

Chikamatsu, N. (2003). The effects of computer use on L2 Japanese writing. *Foreign Language Annals*, 36(1), 114-127.  
Examined effects of computers on writing efficiency and quality among intermediate learners of Japanese. Subjects corresponded with Japanese peers by email and took computer and hand-written tests. Response times, accuracy rates, and t-units were compared. Results suggest learners benefited from computer writing. (VWL)

Child, D. (1989). *Access to higher education: Students with disabilities at the Open University. Working together?* United Kingdom; England:  
Services to students with disabilities at the Open University (OU) in Great Britain are described. This large distance teaching institution offers courses in multi-media form, using printed texts, audio and video material, radio and television programs, microcomputer software, and tutorial support (available either from local study centres or at 13 regional centres). Access for students with disabilities is facilitated through such services as preparatory courses to develop study skills for students with visual and hearing impairments, taped materials, identification of special needs in computer use, arrangements for home examinations, and assessment of individual

functional requirements. These services are supported by an information and resource network with specialist organizations and through links to national and regional governmental and government-funded agencies. Experiences of two students with severe physical disabilities are described. Suggestions for the future include: a pilot project to encourage other higher education institutions to facilitate access to the OU system; early planning and preparation of students; equipping students to use new assistive technology; and providing opportunities for students to review their situation and choose other options if desired.

Clerehan, R., Turnbull, J., & Moore, T. (2003). Transforming learning support: An online resource centre for a diverse student population. *Educational Media International*, 40(1/2), 15-31.

Part of a special issue on computer-mediated communication. The Online Student Resource Centre Web site, developed at Monash University in Australia, not only offers students opportunities to contact staff and access information regardless of their location, but, more significantly, it also provides a range of stand-alone tutorials and downloadable resources. Using Net Objects Fusion as the platform, these tutorials derive from print booklets and cover such topics as academic writing, reading, listening, speaking, grammar and study skills/exam strategies. The process and philosophy behind the development of these tutorials is outlined, and two of the tutorials are examined in detail to highlight some of the pedagogical challenges in translating print resources for the online environment.

Conrad, D. L. (2002). Engagement, excitement, anxiety, and fear: Learners' experiences of starting an online course. *American Journal of Distance Education*, 16(4), 205-226.

A study examined learners' experiences of beginning online courses. Participants were 28 students taking courses in a part-time online graduate program. Results revealed that participants' anxiety levels were high when starting their online courses and indicated that learners re-experience strong degrees of anxiety when starting subsequent online courses. Furthermore, results showed that participants wanted access to courses well in advance of course start dates, that participants' sense of engagement with courses depended more on their link with learning materials than with colleagues or instructors. Further results are discussed, and the implications of the results for practice are considered.

Coombs, S. J., & Rodd, J. (2001). Using the internet to deliver higher education: A cautionary tale about achieving good practice. *Computers in the Schools*, 17(3/4), 67-90.

This article reviews the development and delivery of a Higher Education course module as part of a large European University's Integrated Masters Program operating through a regional network of Rural Area Training and Information Opportunities (RATIO) telematic centres. The aim of the project was to provide remote learners living in the southwest of England with computer-supported solutions to access higher education as part of a technology-assisted distance education program. The module represented a shift from traditional educational

delivery systems by using instructional courseware via an Internet Web site. Personal communications with module participants were conducted with the use of e-mail and videoconferencing information technology (IT) resources. Out of the original sixteen participants who enrolled in this Masters course module, four actually completed the learning sessions and two submitted final assignments. This article considers the key lessons learned from this attrition rate and shares the mainly positive experiences of the remote tutor and the students engaged in this initiative. The implications regarding the use of the Internet for delivering higher education course modules through online distance learning are discussed in the light of cautions learned from this research project and important practical recommendations for future practice are made.

Cruise, R. J. (1993). Success factors relating to alternative delivery of education and training programs. *Education in Rural Australia*, 3(1), 19-23.  
Sunraysia College of TAFE (Australia) offers courses via six alternative delivery systems (outreach, correspondence, extended campus, teleconferencing, satellite, and videoconferencing). Twelve program and delivery variables were rated by 110 students with regard to their contribution to program success. Similar success factors were found for both traditional and alternative delivery methods.

Daniel, J. S. (2001). Lessons from the Open University: Low-tech learning often works best. *The Chronicle of Higher Education*, 48(2), B24.  
In late 1999, experts anticipated the dominance of e-learning and predicted that distance learning was doomed unless all knowledge was delivered online to a computer screen. Evidence from the highly successful Open University in Great Britain suggests, however, that students use the new technology not so much to study course material but to access specific services and in fact still prefer to read books as books and not as computer files.

Davidson, C. (2004). Brazil boosts online study. *The Times Higher Education Supplement*, (1672), 11.  
In an effort to address a teacher shortage and make education more accessible, Brazil plans a huge expansion of distance learning in 2005. The Brazilian government has allocated L 2.6 million for distance learning programs next year, an increase of almost 50 percent on the 2004 amount.

Davison, T. (1995). *Distance learning and information technology: The rhetoric and the reasonable*. Australia; Queensland:  
Distance learning in Australia has become much more popular in the last 20 years, with off-campus study increasing by 331 percent. At Central Queensland University, approximately half of the 9,000 students enrolled are studying at a distance. In order to provide high-quality distance education, a university, through its employees, must "care" for the students enrolled in these programs. Information technologies are increasingly used, and such techniques as videoconferencing, telephone conferencing, and telephone tutorials are a popular means of providing access to higher education and support for distance students. Some barriers to student access

to higher education include the following: the expectation that students will have the required technologies, although many cannot afford them; gender bias against the women who make up most of the distance student body; and students who do not know how to use the information technologies if they can get them. Suggestions for improving access to and success in higher education for distance students are as follows: community use of governmental education and training resources, community use of business and industry resources, and corporate sponsorship of community learning. If universities are to continue to fulfil their mission, they must balance technology with caring in order to help students access and profit from education. (Contains 20 references.)

Delany, J., & Wenmoth, D. (2001). Empowering an indigenous rural community: Local teachers for local schools. *Education in Rural Australia, 11*(2), 10-18. Christchurch College of Education (New Zealand) offers a distance teacher education course to a rural Maori community experiencing a teacher shortage. Program success is attributed to local initiative in establishing the program, significant local input into program development, attention to the student profile in course design and delivery, strategies for self-management and lifelong learning, and flexibility in program options.

Dupin-Bryant, P. A. (2004). Pre-entry variables related to retention in online distance. *American Journal of Distance Education, 18*(4), 199-206. This study identified pre-entry variables related to course completion and non-completion in university online distance education courses. Four hundred and sixty-four students who were enrolled in online distance education courses participated in the study. Discriminant analysis revealed six pre-entry variables were related to retention, including cumulative grade point average, class rank, number of previous courses completed online, searching the Internet training, operating systems and file management training, and Internet applications training. Results indicate prior educational experience and prior computer training may help distinguish between individuals who complete university online distance education courses and those who do not.

Ehrmann, S. C., & Others. (1994). *The future of post-secondary education and the role of information and communication technology: A clarifying report* No. CERICD9411). France: Most countries participating in the Organisation for Economic Co-operation and Development are faced with rapid economic and socio-cultural changes and growing demands for education and training. Postsecondary education faces the challenge of providing high-quality education for all adults who need it in a cost-effective manner. One of the most promising ways seems to be to develop self-directed learning at a distance. The status of distance education versus face-to-face education is changing rapidly for five important reasons: (1) the cost of self-instruction will be lower than that of comparable face-to-face courses over the long run; (2) although open and flexible learning institutions are gaining acceptance, distance learning has been seen as peripheral and of lower status than traditional education creating

obstacles for the mobility of students between modes; (3) distance learning institutions have pioneered pedagogical innovations and forms of cooperation by teams of university teachers to design interdisciplinary courses; (4) good distance learning programs afford better student-teacher interaction than traditional lectures; and (5) technology is breaking down barriers of distance allowing students involved in the same course to communicate and form a virtual classroom. Technology is not only transforming distance education, but also conventional face-to-face education, by providing students with new possibilities for self-instruction. The introduction of technology in both distance and face-to-face education is a complex process that will be influenced by the combination of factors like ethos and culture. Contains 29 references.

Evans, T. E., & Juler, P. E. (1992). *Research in distance education: 2. revised papers from the research in distance education seminar (2nd, Gee long, Victoria, Australia, 1991)*. ISBN-0-7300-2012-6. 224.

Nineteen papers concerning various aspects of distance education and distance education research are presented in this document. The papers are: (1) "Introduction, Celebrating Difference in Research in Distance Education" (Terry Evans); (2) "Discourse or Discord? A Dilemma of Distance Education" (Philip Juler); (3) "Reconceptualising Distance Education" (Garry Gillard); (4) "Constructivist Epistemology and Its Implications for Contemporary Research in Distance Learning" (Olugbemiro Jegede); (5) "Distance Education: Researching Formations" (David Harris); (6) "Revealing Links: Post-Fordism, Postmodernism and Distance Education" (Mick Champion); (7) "Privileging Others and Otherness in Research in Distance Education" (Richard Guy); (8) "Openness in Distance and Higher Education as the Social Control of People with Disabilities: An Australian Policy Analysis" (Christopher Newell and Judi Walker); (9) "Theorising Adult Change and Development through Research in Distance Education" (Alistair Morgan); (10) "Life Course Analysis and Research in Distance Education" (Nick C. Farnes); (11) "A Method for Assessing Student Use of Study Notes" (Stephen Relf and Terry Geddes); (12) "Research in Teleconferencing: Proximics and Student Participation" (Mohammed Razha Rashid, Omar Majid, Abdul Rahim Ibrahim, and Mohammed Ridzuan Nordin); (13) "Student Attendance and Costs of On-Campus Commitments for Distance Education Students" (Eve Cuskelly and John Dekkers); (14) "Computers as Distance Education Research Tools" (Lin Thompson); (15) "Language Learning for Off-Campus Students" (James Butare-Kiyovu); (16) "Creative Conflict Theory and Postgraduate Research in Distance Education" (Ernst Ralf Hintz); (17) "Distance Education: Targeting the Primary Producer and Computer Technology" (Robin Pilcher and Ross Wilson); (18) "Alternatives to Residential Schools: Empowering Students To Succeed at Home" (John Eiseman and Mary Jane Mahony); and (19) "Reflections on Team Research in Distance Education" (David Kember, Tammy Lai, David Murphy, Irene Siaw, Julianne Wong, and K. S. Yuen).

Eversole, R. (2002). *Regional university access: A case study from the south west. Education in Rural Australia, 12(1), 34-42.*

A study examining university service delivery in isolated rural south-western Australia interviewed 25 active and inactive distance students. Issues identified include isolation, lack of peer interaction/support, limited access to academic resources, and the need for motivation. Respondents indicated that methodology, face-to-face contact, and an understanding of local learning cultures were more important than technology.

Fenwick, J. E. (1985). *Individualized learning*. New Zealand: Distance Education Service.

Individualized learning by distance education is discussed, with examples from Lincoln College, New Zealand. After identifying advantages and disadvantages of this approach for students, five degrees of freedom in learning encompassed by this mode are covered that involve content, method, pace, assessment, and sequence. Freedom of content allows students to choose what they learn within a particular part of the course. Students can also choose the learning methods that they find most suitable, work at their own pace, and learn at times and places that they choose. Students can choose whether or not they are to be assessed, and if so, what form assessment takes. In addition, students can choose in what order they wish to study the material. Individualization requires that the content and the objectives relating to the content be adopted to meet the learner's needs and abilities. A task-based distance education course (Diploma in Agriculture) at Lincoln College uses a learning package. Based on a task-analysis of framing systems, standardized skills specific to each task have been identified. In addition to task-related assessment sheets in the learning packages, students write two farm reports.

Hawkridge, D. (1988). Distance education and the World Bank. *British Journal of Educational Technology*, 19(2), 84-95.

Review of distance education projects in developing countries focuses on those that have been funded by the World Bank from 1963 to 1985. Systems for primary, secondary, college level, adult, and teacher training students are included; case studies are provided; and educational objectives and cost effectiveness are discussed.

Henning, E., & Westhuizen, D. (2004). Crossing the digital divide safely and trustingly: How ecologies of learning scaffold the journey. *Computers & Education*, 42(4), 333-352.

The article addresses the issue of learning to e-learn in borderless programs in a globalised learning landscape and the associated problems of scaffolding the journey across the digital divide. The authors argue that the assumption underlying such courses is that cross-cultural programs are viable because they are conceived and designed to be 'global', and that they assume this design to be inclusive. Henning and Van der Westhuizen claim that the global discourse in most domains can take only marginal note of the need to infuse such programs with a local semiotic-a course design criterion for which they argue. They furthermore forward the notion that the majority of the world's prospective e-learners need various bridging mechanisms in order to be able to access the broader discourse and that one of these mechanisms can be explored through the metaphor of "information ecologies" as proposed by

Nardi and O'Day {Nardi, B.A., & O'Day, V.L. (1999). *Information ecologies. Using technology with heart.* Cambridge, MA: The MIT Press}. They also conclude that issues of the learners' trust in the course and its system need to be considered when contemplating programs for diverse target groups. By way of a case study, consisting of three portraits of adult learners, they explore the limitations of assumed distributed cognition and claim that learning is, in reality, contained/constrained in the familiar local narrative of the novice adult e-learners in a rural South African context. The case study illustrates how the resistance to technology and its power base becomes an obstacle for the students and how the support of peers becomes the main scaffolding mechanism for their entry into electronic learning environments. The findings thus show how the social context becomes the facilitator and the scaffold for e-learning, more than technology and the curriculum itself.

Ho, C. P., & Burniske, R. W. (2005). The evolution of a hybrid classroom: Introducing online learning to educators in American Samoa. *TechTrends*, 49(1), 24-29.  
A study investigated the effectiveness of combining on-site and online instruction in a hybrid course on educational technology for teachers in American Samoa. Data were obtained from analysis of feedback from both students and teachers in three sections of the course. Findings revealed that this hybrid course identified problematic areas for both students and instructors, with regard to time, access, and workload. Moreover, findings suggested that the process of designing and facilitating hybrid courses in American Samoa required constant negotiation of pace of instruction and acculturation to online learning.

Hoskins, S. L., & van Hooff, J. C. (2005). Motivation and ability: Which students use online learning and what influence does it have on their achievement? *British Journal of Educational Technology*, 36(2), 177-192.  
There has been much recent research examining online learning in universities, but two questions seem to have been largely overlooked in this context: (1) Which students voluntarily utilise web-based learning; and (2) Does this use influence their academic achievement? The current study aimed to determine whether the approaches to studying, ability, age, and gender of 110 undergraduates in the second year of a psychology degree predicted the extent to which they utilised online learning using Web Course Tools (WebCT) in support of a core Biological Psychology unit. Data were obtained from WebCT's student tracking system, Entwistle and Ramsden's 18-item Approaches to Studying Inventory (1983) and academic records. Multiple linear regressions and discriminant function analysis were used to examine whether individual differences predicted WebCT use, while analysis of covariance determined whether web use influenced academic achievement. The number of hits, length of access, and use of the bulletin board was predicted by age, with older students using WebCT more. These factors were also influenced by ability and achievement orientation. The degree of participation in self-assessment was not predicted by student variables, but, of those that repeated an online quiz, improvement was more likely in those with lower achievement orientation. Only bulletin board use influenced achievement, with those posting messages outperforming those not using, or passively using bulletin boards.

However, because individual differences will determine the extent to which students utilise this facility, it is suggested that future research should focus on developing online learning environments that incorporate activities with both a beneficial influence on learning and appeal to a wide student population.

Jung, I. (2003). Online education for adult learners in South Korea. *Educational Technology, 43*(3), 9-16.

Analyzes three applications of online learning and technology in South Korea: development of single-mode virtual universities; online education in conventional universities; and Web-based corporate training. Concludes with principles of online learning derived from experiences in implementing such environments.

Kataoka, H. C. (1986). Televised Japanese language program: The first year. *Foreign Language Annals, 19*(6), 491-498.

The Televised Japanese Language Program provides long-distance Japanese instruction by recycling videotapes of live classes. This system is an effective and economical means for offering instruction in foreign languages when there is insufficient staff.

Katz, Y. J. (2002). Attitudes affecting college students' preferences for distance learning. *Journal of Computer Assisted Learning, 18*(1), 2-9.

Describes a study of undergraduates in Israel that examined the relationship between two distance learning ICT (information and communication technology)-based configurations. Results indicate that psychological attitudes held by students differentially facilitate efficient use of distance learning approaches. Considers satisfaction with learning, level of control, and study motivation.

Kippers, & J, M. (1998). Distance education in India. *University Affairs, 39*(8), UniWorld.

Kotey, B., & Anderson, P. H. (2005). Comparing the performance of distance learning and traditional students in a business simulation exercise. *Industry and Higher Education, 19*

The performance of distant students in a simulation exercise for a Small Business Management (SBM) course was compared with that of internal students and the demographic and psychological variables associated with the performance of each student group were examined. Distant students matched or exceeded the performance of internal students in spite of the setbacks associated with distance learning. Work experience and rational information processing were associated with the performance of distant students but not with that of internal students. Distant students proved more able to achieve the multiple learning objectives of the course. Effective online interaction among students can help reduce the setbacks associated with independent learning for distant students and the work experience gap for internal students.

Larher, T. (2002). E-learning: Market structure, platform functions, standardisation. *Communications and Strategies*, 0(47), 167-76.

Lelliott, A., Pendlebury, S., & Enslin, P. (2000). Promises of access and inclusion: Online education in Africa. *Journal of Philosophy of Education*, 34(1), 41-52.  
Part of a special issue on the philosophical problems of online distance education. An overview of problems relating to access to information and communications technology in Africa is presented.

Lusnia, K. B. (1999). *Teaching teachers long-distance: A paradigm-shift for the teacher-planner in Mexico*. Mexico:  
This paper describes and examines an experimental and innovative program at the Centre for the Teaching of Foreign Languages at the National Autonomous University of Mexico to provide teacher education courses by means of distance learning. This program was undertaken in response to a scarcity of qualified language teachers. It is aimed at teachers who have at least a bachelor's degree in applied linguistics or a related field and have a reading knowledge of English. Six courses are planned: Learning applied linguistics at a distance; linguistic aspects for communicative approaches; reading comprehension; language testing; introduction to applied linguistics; and writing for English teachers. All courses except for the introductory course are four months long. Distance education plays an important role in educational institutions because of its flexibility and accessibility to populations who might not otherwise be able to complete a degree or take continuing education courses. It is not quick, easy, or cheap as is widely believed. The same course taught in a classroom cannot simply be delivered via distance education; significant adjustments must be made. Teachers at both ends of the process must be involved in course planning and the learning process. The teacher/planner begins to realize the importance of learning theories in the context where the student is physically absent and where the planner must make the learning process accessible, valuable, and motivating. Four appendices, including graphics, data, and references are included.

Madison-Colmore, O. (2003). E-mentoring: A mentoring model for African American college students at a predominantly white institution. *Peer Facilitator Quarterly*, 18(4), 49-51.

Introduces the E-Mentoring model, an electronic version of mentoring in which African American college alumni share their perspectives and experiences with African American college students at predominantly white institutions. After describing two mentoring models designed for minority students, the article focuses on E-Mentoring, noting advantages and disadvantages of this form of mentoring, and offering implications for student affairs professionals.

Marginson, S. (2004). Don't leave me hanging on the Anglophone: The potential for online distance higher education in the Asia-pacific region. *Higher Education Quarterly*, 58(2-3), 74-113.

In the last decade there have been many attempts to mount online distance higher education programs on a global scale, led by the e-learning industry and university

companies and consortia, some with government support: e.g. Universitas 21 Global, Cardean University, Fathom, NYU Online and the UKe-University. A primary commercial objective has been student markets in the Asia-Pacific nations, especially China, given unmet domestic demand and the growth of cross-border education. However while for-profit providers such as the University of Phoenix Online have shown mass online programs are viable in targeted markets, albeit more expensive than face-to-face programs, would-be global ventures have faltered or collapsed. The paper reviews the failure of English language global e-learning in the light of industry marketing strategies, the economics of online education, and the specifics of Asia-Pacific nations including unmet demand for education. It argues that for exporter universities, the potential of cross-border online education can only be realised if communications capacity in the Asia-Pacific nations is enhanced; and online programs are teaching-intensive, and customised for cultural and linguistic variations. Long-term equal partnerships with local and system providers are essential. For policy makers, the implosion of global e-learning points to the need to use expert judgment in relation to the different options for enhancing the capacity of higher education at home and abroad. It also suggests the need for greater scepticism about commercially driven scenarios and claims of company prospectuses, and about the viability of market-controlled paths of development.

Maslen, G. (2003). Australia sharpens focus on distance. *The Times Higher Education Supplement*, (1589), ii.

An overview of distance education in Australia is provided. A recent survey has found that 23 of Australia's 40 universities offer more than 200 fully online courses, all universities in Australia use the Web for teaching and learning, and Australians have near-universal access to computers and the Internet. The development of a global online mega-university has excited and terrified Australian planners, but although global online courses are technologically feasible and offer huge investment returns, online global delivery has failed to capture the imagination of students.

Merrick, N. (1998). Access denied. *The Times Educational Supplement*, (4290), 31.

According to a report by government advisers on lifelong learning in Great Britain, millions of adults are missing out on training and education because they do not have access to the Internet and other information technologies. The report calls for a network of local information technology centres or learning spaces where people can have access to the Internet and urges more companies to allow non-employees to use their learning centers.

Mukerji, S., & Tripathi, P. (2004). Academic program life cycle: A redefined approach to understanding market demands. *Journal of Distance Education*, 19(2), 14.

Education can develop intellectual capability in people, which may in turn lead toward development of a more humane society. Open and distance learning (ODL) has provided one means of achieving social objectives democratically. In India significant success has been achieved through a network of 10 open universities and 104 institutes of open and distance education (IODE). Challenge and competition in

the education sector have presented a new situation where institutions are now viewed as conglomerates and educational programs as educational products. Established ODL institutions need to compete. The students are perceived as end users or customers in the emerging education market. Institutions require innovative marketing strategies in this highly competitive market for services, and these strategies depend on the stage of maturation of the educational programs in an academic program life cycle (APLC).

Muraleedharan, K. (2004). Internal resources generation and utilisation in conventional distance education institutes: The case of three universities in Kerala. *Journal of Educational Planning and Administration*, 18(2), 199-215.

Retreating of State to its conventional corners and consequent resource constraints, and gripping the social overheads like education in developing economies, have made it imperative on the part of the Universities in India to generate their own internal resources and reduce their dependence on public exchequer. In search for their own resources, these universities have efficiently harnessed the recent paradigm shifts in the frontiers of higher education globally towards open market driven, lifelong and learner-centred education from all the opposite counterparts, and have resorted to establish distance education centres. Apparently, this has enabled these universities to cater to the unreached and the marginalized in the mainstream education in a big way. But, from the point of economics, what needs to be explored is how far these universities were able to generate their own resources and how these resources are put to their best uses. The paper addresses this question with reference to three conventional universities in Kerala.

Murphy, K. L. (1990). *Patronage and an oral tradition: Influences on attributions of distance learners in a traditional society. (A qualitative study.)*. U.S.; Kansas: Case study methodology was used to provide an in-depth examination of influences on distance learners' achievement attributions in order to gather data about educational orientation, study approaches, and beliefs about success and failure. The four subjects were drawn from 15 first-year distance learners pursuing degrees at Anadolu University's Open Education Faculty (OEF) in Eskisehir, Turkey. Together, these subjects had characteristics that mirrored the population of first-year OEF students. Data were gathered over an 11-month period through questionnaires and interviews. It was found that the four kinds of attributions usually tested in attribution research (effort, ability, luck, and task difficulty) were not altogether appropriate for Turkish distance learners, who perceived a wide range of learning conditions to be salient factors in their anticipated success and failure. The students attributed their success both to effort and to a variety of positive conditions, whereas they attributed failure primarily to negative conditions in the learning environment. The study demonstrated the complexities of the cross-cultural application of attribution theory in a distance learning context, particularly in a developing country where Islamic influences of patronage and an oral tradition prevail.

Ommerborn, R., & Schuemer, R. (2001). *Using computers in distance study: Results of a survey amongst disabled distance students*. Germany: FernUniverstat.

A study at Germany's FernUniversität sent a questionnaire to 300 enrolled distance education students (mostly adult, mostly part-time) who labelled themselves as severely disabled or chronically ill (about 2 percent of students), asking them about the types of their disabilities and their attitudes toward computer-assisted learning and online classes. The study found that a higher (43 percent) than usual (37 percent) number of the students with disabilities were women, and their median age (43 years) was older than the students as a whole (32 years). About 45 percent of those questioned mentioned more than one type of disability or illness, with damage to the skeletal support system mentioned most frequently (38 percent of all answers), followed by central nervous system disorders and internal diseases (13 percent each), sight impairments (10 percent), hearing impairments (9 percent), and mental or psychological illnesses (9 percent). About 30 percent of the students did not use computers, usually because of cost and lack of opportunity to learn how to use them. Students cited advantages of computer use, including easier essay writing; Internet access, access to information and library research; potential for uses other than study; and easier communication with the university. Disadvantages cited included cost, physical problems caused by long work with computers (such as eye strain and wrist disorders), lack of training opportunities, and reinforcement of the isolation typical of distance learning. Students made the following suggestions for improving the use of computers in distance learning with disabled students: (1) better access to study centres for physically disabled students; (2) permission to use computers during written examinations; (3) more training on computers and information about assistive devices; (4) more modes of information transmission (multi-media); and (5) access to the Internet for all students without making it mandatory because of varying needs of students with different types of disabilities.

Özden, M. Y., Ertürk, I., & Sanli, R. (2004). Students' perceptions of online assessment: A case study. *Journal of Distance Education*, 19(2), 77.

For many reasons the use of computer-assisted assessment (CAA) is increasing. Although computer-based examinations increase in use, research is lacking about students' perceptions of online assessment in general and of categorized fields of online assessment systems. The aim of the study was to investigate students' perceptions of the use of CAA and to investigate the potential for using student feedback in the validation of assessment. To determine the students' perceptions of online assessment, an examination Web site was developed and implemented as part of the assessment of Masaüstü Yayıncılık (Desktop Publishing), a course given by the Department of Computer Science at Kocaeli University, Turkey. The study was descriptive, using a paper-based survey and interviews for data collection. Participants were third-year students enrolled in the course. Descriptive analysis of the questionnaire and interview data showed that the most prominent features of the online assessment system were immediate feedback, randomized question order, item analysis of the questions, and obtaining the scores immediately after the exam. Participants reported the effectiveness of the online assessment system. Although there is much room for improvement in online assessment systems in the near future, such systems are accepted by computer-friendly youth.

Paulsen, M. F. (1992). From bulletin boards to electronic universities: Distance education, computer-mediated communication, and online education. ACSDE research monograph, number 7. Report: ISBN-1-877780-09-X. 76.

This monograph presents a collection of separate papers that focuses on pioneering projects in computer-mediated communication (CMC) and distance education. The first section of the monograph contains two papers describing the author's experiences with CMC projects that formed the foundation for his further CMC work: "NKI Electronic College," a distance education program using computer conferencing at NKI College in Oslo (Norway); and "Teaching across the Atlantic," a computer-conference-based course conducted by experts from both sides of the Atlantic. In the second section, two papers--"Innovative Computer-Conferencing Courses" and "Computer-Mediated Communication and Distance Education around the World, An Annotated Bibliography"--provide 16 examples of the CMC projects in 12 countries the author has encountered through literature reviews and personal communications. Three articles that compile experiences, conclusions, and predictions for the future based on the author's perceptions and theories are presented in the final section: "GO MEEC," which describes a goal-oriented method for establishment of an electronic college; "The Electronic University," which predicts the development of future electronic universities; and "The Hexagon of Cooperative Freedom," which proposes a distance education theory attuned to CMC. Most of the papers include references; a total of 79 references are contained overall.

Phillips, R., Cummings, R., & Lowe, K. (2004). Rethinking flexible learning in a distributed learning environment: A university-wide initiative. *Educational Media International*, 41(3), 195-205.

Part of a special issue on distributed learning. A study investigated the implementation of flexible study materials focused on student access instead of delivery at Murdoch University in Perth, Western Australia. Participants were 477 students at Murdoch University who used the new study materials. Results revealed that this new model of education delivery made the learning environment more flexible for both on-campus and off-campus students. Moreover, it was more cost effective for the university and contributed toward the start of a systematic curriculum renewal process aimed at enhancing student achievement and operational efficiency.

Prewitt, T. (1998). The development of distance learning delivery systems. *Higher Education in Europe*, 23(2), 187-196.

The history of distance education, traditionally a peripheral university activity, is chronicled, beginning with the advent of the British Open University and through developments in technology that are rapidly blurring the distinction between traditional and distance education. Distance-learning techniques are described that will change students' reading and writing skills and the teacher-student relationship. Potential problems are examined.

Ridge, E., & Waghid, Y. (2001). Equity and distance education. *Equity & Excellence in Education*, 34(3), 80-86.

Discusses how distance education can solve South Africa's problems of access to quality higher education, noting the need for radical shifts in perspective and sophisticated understanding of academic literacy. Explores key features of proposals by the Council on Higher Education (developing human capital and reducing high levels of structural inequality and underdevelopment). Examines structural aspects, materials development, and language needs.

Rowe, M. (2003). Ideal way to lighten the load. *The Times Higher Education Supplement*, (1589), iii.

Analysts believe that e-learning may be the only solution to the huge and insuperable demand for higher education in Asia. E-learning offers increased access to learning opportunities, provides a quantum leap in economies of scale, and is expected to boom if SARS forces students to study more at home. Nonetheless, there are cultural factors and technological obstacles to be overcome if e-learning in Asia is to be truly successful.

Stenning, M., & Hemsworth, M. (2001). Wanting to put a name to the face. *Adults Learning (England)*, 13(4), 21-23.

Focus groups of distance learners in south-eastern England found that learners were reluctant to contact unfamiliar guidance staff; they wanted staff to visit communities and the university to make its presence more visible. Although distance learning was the only option for many, the need for human contact remained strong.

Tirri, K., & Nevgi, A. (2000). *Students' views on learning in virtual university*. Finland: This study examines Finnish college students' views on learning in a virtual university. Respondents studied at Helsinki Virtual Open University (HEVI) and the Apaja Internet Service from 1995-99. HEVI is a Web-based learning environment where students can study, get advice, receive help from tutors, and use office services. Apaja Internet Service provides Web-based courses for university graduates to promote skills relevant to the labour market. Respondents completed a questionnaire evaluating the advantages and disadvantages of Web-based learning. The questionnaire measured basic components of learner-centred and constructivist ideas in learning. Students assessed how learning was tailored to meet their individual needs and how well they received personalized guidance and feedback. They also assessed the disadvantages of Web-based learning by evaluating difficulties due to technology and expenses. Overall, the application of constructivist approaches to Web-based learning had more advantages than disadvantages. However, different students had unique needs, which must be acknowledged more in planning and implementing Web-based courses and learning environments. Age and educational background were important factors influencing students' views on the advantages and disadvantages of Web-based learning.

Tysome, T. (2000). A human face still beats net. *The Times Higher Education Supplement*, (1465), 26.

The idea that online learning is an acceptable substitute for more traditional teaching methods and face-to-face contact is being rejected by many prestigious business schools in Great Britain. Recruitment campaigns are instead being based around the message that high-quality teaching, learning materials, and support are what really count. The campaigns portray the Internet as a mere enhancer of these things that offers superior communication, access to information, and flexibility.

Wang, L. C., & Dalton, D. W. (1997). *Online English learning using internet for English-as-a-foreign-language students*. U.S.; Ohio:

Learning to communicate in English is an essential tool to access many resources via worldwide networks in the global society. Like students from many other countries, students in Taiwan study English for years, but lack opportunities to practice. For English-as-a-Second-Language students, the World Wide Web provides a learning environment in which language skills can be developed through communication with native speakers of English. A framework, the Online American Culture Learning Centre, was created to study cross cultural distance education through the Web. This experiment between Kent State University (Ohio) and the National Taiwan Normal University will create an English learning environment through the discussion of six major topics on the Internet: Thanksgiving, Yellowstone National Park, American Football, Rock 'n Roll, Shopping Malls, and Garage Sales. Training materials for these topics are being used in a pilot study to assess their efficiency. Pre-service teachers from Kent State University will serve as tutors and monitor student progress. Each tutor will have one student, who will correspond via e-mail. The project will explore whether online distance education can enhance learning in a foreign language and whether such exchanges promote multicultural understanding. Evaluation questions will be administered online, and surveys from students and tutors will be used to assess the feasibility of the approach.

Ward, M., & Newlands, D. (1998). Use of the web in undergraduate teaching. *Computers & Education*, 31(2), 171-184.

The use of the World Wide Web in higher education is increasing at an exponential rate. However, little research has been done on the quality and nature of students' learning in a Web based system. This paper discusses the views of students on an experiment at Aberdeen University in which the Web was used to replace face to face lectures. The results suggest that students exercised greater choice of when to study and experienced few problems of lack of access to computers or of technical failures. The experiment appears to have saved students time and not to have involved them in much financial expenditure. The findings as to how the students actually used the Web materials were less encouraging. Most students appear to have printed a paper copy of the Web documents at the earliest opportunity, while only a minority of students went in search of other relevant Internet sites. The experiment suggests that the transition from a traditional to a computer based system will

involve considerable investment of time by lecturers new to the Web, in the acquisition of new skills and the preparation of Web materials. The Web has great potential to benefit students' learning but there are few shortcuts to the realisation of this potential.

Williams, P. (2002). The learning web. *Active Learning in Higher Education*, 3(1), 40-53.

The incorporation of undergraduate key skills programmes has been a major cause of concern for some years now, recently given added impetus by the Dearing (1997) report. This article discusses the development, implementation and evaluation of electronically disseminated key skills materials at the University of North London. Take up of these was positively correlated with academic success, although misuse of on-line discussion was evident. Lecturers and students differed markedly in their perception and evaluation of the system. Many of the advantages trumpeted by academics were dismissed by learners, who felt that material posted on-line gave them extra work; represented an abrogation of lecturers' teaching duties and shifted printing costs from the institution to the student. Network and other access problems caused further disenchantment. The article concludes that more attention needs to be paid both to student needs and attitudes, and to the resource implications of running such a system.

Wojtas, O. (2002). E-learning solves a resource problem. *The Times Higher Education Supplement*, (1553), 8.

Nigeria is establishing a national virtual university project that is set to serve 18 study centres across the country in a bid to combat a dearth of academic books and journals. According to the Nigerian minister for education, giving the centres access to a digitized library is the only cost-effective way of making sure that books are available as the country tries to increase student numbers at a time of declining resources.

Woodley, A. (1986). Distance students in the United Kingdom. *Open Learning*, 11-13.

Funded by the Department of Education and Science in 1981, this study was carried out by a team of researchers from a polytechnic institute, a private university, and the Open University. A national sample of about 4,500 mature students who were taking a wide range of courses--from evening classes to full-time higher degrees--completed detailed questionnaires eliciting information on their background and educational experiences. Among those students sampled were a substantial number of distance students who form the subject matter of this paper. In order to discover the extent to which student populations vary, the students were divided into five groups: Open University undergraduates; Open University associate students; National Extension College students; NALGO Correspondence Institute students (a trade union for public sector employees); and private correspondence students. Following the return of the questionnaires, data were analyzed and summarized in 12 tables according to the following variables: age, sex, employment status, current educational qualifications, social class, subject of study, level of course, reason for taking the course, father's social class, qualifications held on leaving school,

educational mobility, and social mobility. Results indicated that the student populations were very diverse, and it is suggested that each institution needs to survey its own student population when designing distance courses, rather than relying on findings from elsewhere.

Yuhui, Z. (1988). China: Its distance higher-education system. *Prospects*, 18(2), 217-228. Examines the origins and development of China's distance higher-education system which is projected to enrol two-fifths of all college students by the 1990s. Describes the organizational structure of the radio and television universities. Discusses courses of study and use of media; addresses financial concerns; and surveys achievements, limitations, and needed improvements.

Zhang, W., Perris, K., & Yeung, L. (2005). Online tutorial support in open and distance learning: Students' perceptions. *British Journal of Educational Technology*, 36(5), 789-804.

The Open University of Hong Kong (OUHK) offers 199 courses with online features to enhance the distance learning environment. The university has arranged these courses to provide students with greater flexibility in interacting with tutors, classmates, and the content itself. Integral to learner flexibility online is access, valuing computers and online learning, endorsement, and language proficiency. The current investigation attempts to explore these issues by examining the perceptions of OUHK students enrolled in courses with online tutorial supports. The methods of questionnaire survey and semi-structured interview were employed. Surveyed using multistage stratified sampling technique were 449 OUHK. Students enrolled in 18 upper level courses (9 English, 9 Chinese) at the OUHK. Forty-two students were randomly selected for a follow-up interview. Five major topics were explored including: (1) accessing the Internet; (2) perceptions of technology; (3) rationale for using the Internet, in course work; (4) learning strategies used by the tutor online; and (5) perceptions of the online tutorial support.

**Appendix B: Excluded References**

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