

**Annotated Bibliography on e-Learning and Application of
Educational Technology in African Countries, or in Contexts
Relevant to Africa.**

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Table of Contents:

Section 1: Related to the Use of Technology for Teaching and Learning within Universities	1
Section 2: Related to Use of Technology for Distance Learning	12
Section 3: Related to Use of Technology for the Professional Development of Teachers	17
Section 4: Other e-Learning Articles as Appropriate	20
<i>Importance of e-Learning in Developing Countries</i>	20
<i>Design and Evaluation of e-Learning</i>	22
<i>Barriers in Harnessing the Full Power of ICT for Teaching and Development</i>	23
<i>eGranary- Educational Resources on the Public Internet in Africa</i>	25
<i>U.S. Perspective on Technology Initiatives in Higher Education</i>	26
<i>Expanding Public-Private Partnership Activities in e-Learning</i>	26
<i>African Virtual University</i>	27
<i>ICT in Libraries</i>	27
List of e-Learning Journals and Websites	30
Inventory of e-Learning and Educational Technology Research and Training Centers	31

Section 1: Related to the use of technology for teaching and learning within universities – Annotated Bibliography

Stephen M. Mutula. **Assessment of Africa's Telematics, Policy and Regulatory Infrastructure: Potential for E-learning.** Conference paper. 2003

Increasingly, a number of universities worldwide including some in Africa are making positive attempts to implement e-learning strategies in order to enhance equity, quality, share instruction technology resources, compete in global environment of higher education and meet the rising demand for tertiary education. The problems that bedevil Africa's tertiary education sector are compelling for the implementation of e-learning strategies. This paper examines Africa's higher education environment from the point of view of the continent's telematics status. The paper recommends policy, legal and regulatory frameworks that are necessary to create an enabling environment to harness opportunities of e-learning in order to address Africa's higher education problems.

Available online at: <http://www.ntesu.org.za/html/conference/papers/mutula.pdf>

Dr. Elijah I. Omwenga . **A Training Needs Assessment Study on the use of Information and Communications Technologies (ICT) in supporting the provision of Science and Engineering Education in Five East African Universities.** Paper. 106p. September 2004

A UNESCO/ANSTI sponsored study to carry out a needs assessment of five Universities in East Africa in order to determine their state of readiness to embrace ICT and educational technology. The paper reports on students' access to computer facilities, the percentage of staff with computers in the offices; the networking of computers in the faculties of science and engineering, nature of link with the Internet, general computer literacy of staff and students and factors that affect the use of ICT as an educational technology. It also determines in each university the resources (both human and material) required to enable the institution to use ICT as an educational technology; indicates the resources required for each level of use of ICT as an educational technology and the level of within classroom interaction, at the level of interaction within departments, faculty and campus and the level of interaction with the wider world. The objective of the report is also to establish training needs for the use of ICT in science and engineering education.

Available online at : <http://webmail.fandm.edu/Session/20672-00dal35cnfox0Uw6venH-ilgjfjw/MessagePart/INBOX/6079-02-B/Needs%20Assessment%20report%20Oct04.pdf>

ME Herselman and HR Hay. **Challenges Posed by Information and Communication Technologies (ICT) for South African Higher Education Institutions.** June 2003

The revolutionary change which is taking place in Information and Communication Technologies (ICTs), has dramatic effects on the way universities carry out their functions of teaching, learning and research, particularly on the creation, dissemination and application of knowledge. These developments pose unprecedented challenges to higher education institutions (HEIs) in developing countries particular in South Africa as South Africa is viewed as the leading country on the continent. In the paper, various aspects of capacity building in ICT for higher education institutions in Africa are discussed. Consideration has been given to physical, institutional and human capacity building in ICT in African HEIs. These institutions must develop, use ICT and integrate it into teaching, learning as well as research and development. The HEIs in collaboration with the private sector must be the drivers of ICT development. The facilities offered by ICT are tremendous in order to educate the teeming millions on the African continent, using technologies such as on-line courses, the African Virtual University (AVU) and other long distance educational facilities driven by ICT. A final consideration for all HEIs is that if they do not have Internet connectivity with reasonable speed (minimum of 64Kbps) and relevant ICT facilities in the next one year they will not be in a position to fulfil the purposes for its establishment. The papers suggests that HEIs in SA should all address an ICT policy and determine how their visions can incorporate the ICT profile and ICT policy to the benefit of the future of the institution and its stakeholders.

Available online at: <http://proceedings.informingscience.org/IS2003Proceedings/docs/119Herse.pdf>

Laura Czerniewicz and Cheryl Brown. **Information and Communication Technology (ICT) use in teaching and learning: practices in Western Cape higher education institutions.** *Perspectives in Education* v. 23. December 2005

This article reports on some of the findings of a regional study into the access to and use of Information and Communication Technologies (ICTs) in five higher education institutions in the Western Cape. The attention here is on use of ICTs by academic staff and students. In this paper we describe how and to what extent ICTs are being used as part of teaching and learning in higher education institutions in the Western Cape. The focus is on the way technologies are being used, in conjunction with specific teaching strategies, to support particular learning experiences. The questions we address in this paper are: “To what extent are ICTs being used as part of teaching and learning events in higher education in the Western Cape?”; “How are ICTs being used as part of teaching and learning events in higher education in the Western Cape?”; and “How are ICTs being used by specific groups as part of particular teaching and learning events?”

Daniel A. Wagner, Bob Day, Tina James, Robert B. Kozma, Jonathan Miller & Tim Unwin. **Monitoring and Evaluation of ICTs in Education: A Handbook for Developing Countries.** Prepared by infoDev. 2005

This publication is intended as an introduction and guide for busy policymakers and practitioners grappling with how to understand and assess the ICT-related investments underway in the education sector. This short but comprehensive work is specifically designed to meet the needs of developing countries, and it is hoped that its publication will help to stimulate further efforts in this emerging and very important field.

Philip M. Uys, Paul Nleya, and G.B. Molelu. **Technological Innovation and Management Strategies for Higher Education in Africa: Harmonizing Reality and Idealism.** *Educational Media International*, v. 41 no. 1 p. 67-80. March 2004

This paper analyses and suggests possible technological innovation strategies in higher educational institutions in Africa. The paper describes management issues in the implementation of eLearning with particular reference to its usage in higher education abroad and in Africa, and also suggests appropriate approaches for technological innovation of higher education in Africa. The major findings of the paper, which are based on three case studies, suggest that eLearning needs to be implemented within a strategically developed framework based on a clear and unified vision and a central educational rationale. The findings further highlight the importance of using a combination of strategies--top-down, bottom-up and inside-out--during the diffusion process to attain coherence, collegiality and ownership. The process of technological transformation is not a smooth translation process but one of dislocations, dilemmas and uncertainties and it is an art to effect change and sustainable technological transformation since people are central to this transformation process.

Bassoppo-Moyo and C. Temba. **Evaluating eLearning: A Front-end, Process and Post Hoc Approach.** *International Journal of Instructional Media*, v. 33 no. 1 p. 7-22. 2006

This paper examines eLearning from three related perspectives, two of which address the planning and administration of online courses. The second part of this paper examines the assessment and evaluation of learning outcomes in an eLearning environment. The initial phase thoroughly explores current and recommended front-end approaches to improving online instruction. It looks at the organizational aims and the vision within which eLearning can be applied. The second phase examines the planning, implementation and administration of online courses. It investigates characteristics of effective eLearning environments that address physical, technical, pedagogical, professional and environmental elements. The third and final phase explores several reliable and valid approaches to online measurement and testing methods that are designed to eliminate such problems as plagiarism, technical problems associated with access, matching learners' and instructors' technical skill levels, learner isolation, and the impersonality of computerized assessment.

The Challenges of a Modern Tertiary Education System: Paradigm Shifts for Educators and Information Professionals in Sub-Saharan Africa. African Journal of Library, Archives & Information Science v. 16 no. 1 p. 45-52. April 2006

The 21st century ushered in a new world order whereby the work place is asking for graduates who have acquired a strong intellectual framework for accessing information to create new things effectively. This calls for pedagogic restructuring in higher education and in particular the adoption of resource-based teaching and learning systems. The changing education landscape and the different formats in which resources are prepackaged have also ushered in new roles for academic librarians who are now actively involved in helping library users to acquire information literacy skills. Academic librarians are the chief instructors in information instructional programmes and serve as consultants on information issues and problems. Information professionals need to provide instructions on research methods and other areas that deal with incorporating information and communications technologies (ICTs) into learning.

J.W. Fresen and L.G. Boyd. **Caught in the Web of Quality.** International Journal of Educational Development v. 25 no. 3 p.317-331. May 2005

This study investigates the quality assurance of web-supported learning and may be considered a self-evaluation exercise of the e-learning design and production unit at the University of Pretoria, South Africa. While the 'quality' discourse and the 'e-learning' discourse are topical, there is little evidence of research projects which attempt to diminish the gap between them (Reid, 2003). The theoretical framework on which this study is based is that of an integrated, process-based quality management system, applied to web-supported processes and products. The paper is presented in three parts, namely the methodology of the quality management system, critical success factors for web-supported learning, and a student feedback survey measuring client satisfaction.

Edward L. Meyen, Ron Aust and John M. Gauch. **e-Learning: A Programmatic Research Construct for the Future.** Journal of Special Education Technology v. 17 no. 3 (Summer 2002) p. 37-46. Summer 2002

The Internet and its applications in education and industry have significantly influenced how we teach and learn. This has all occurred as a consequence of emerging technologies and the demands for online instruction by consumers. In the midst of this environment of rapid growth, a new form of pedagogy has emerged. However, much of it is not the result of research. This paper addresses the need for a conceptual approach to researching, e-learning instructional design and the technologies employed as a basis for e-learning. A programmatic research construct is offered as a structure for building a conceptual model. Three categories of variables are considered in building the construct. They include outcome, in situ, and independent variables. The intent of the paper is to engage researchers and developers in a process of further defining the variables and translating them into research questions that might serve as guidelines in building the literature base for the pedagogy of online instruction.

Broere, H. C. Geysler and M. Kruger. **Technology Development: Imperatives for Higher Education.** South African Journal of Higher Education v. 16 no. 3 p. 5-12. 2002

Discusses the enhancement of higher education in South Africa through technology, exploring some relevant aspects through learner-centered and managerial perspectives. Outlines some critical conditions to integrate technologies into teaching and learning. (SLD)

Philip Uys. **A syntagm of networked educational management: case study – University of Botswana.** Campus-Wide Information Systems v. 21 no.1 p. 22 – 28. February 2004

Networked educational management has emerged as an effective, distributed management approach for managing educational technologies and e-learning in educational institutions. This management model has been developed during the writer's doctorate research and implementation of e-learning (also referred to as networked education) at Massey University, New Zealand, as well as on consulting assignments over the last six years including a five-month consulting engagement at Cape Technikon, South Africa. Networked educational management has found its widest syntagmatic expression or manifestation at the University of Botswana where the writer has been leading the university-wide implementation of modern educational technologies and e-learning since early 2001. This paper describes this syntagm or practical

manifestation of networked educational management and concludes that networked educational management, as a new educational management paradigm, has promising features for addressing the need for client satisfaction within higher education while also ensuring that strategic imperatives of the institution are being fulfilled.

Mandi Axmann, Wiida Fourie and William Duncan Papo. **Adding Net Value: The Nature of Online Education at a South African Residential Institution.** Educational Media International v. 39 no. 3-4 p. 267-73. September 2002

Discussion of online learning focuses on course development at a South African residential institution that incorporated online assignments into a face-to-face journalism course to introduce information technology. Describes course structure, activities, assessment methods, student involvement, and problems with students' lack of computer skills and access to personal computers and the Internet. (LRW)

Asia:

K.L. Kumar. **Science and Technology Courses via E-Learning: An African Scenario with Lessons from South East Asia.** International Journal on E-learning v. 1 no. 3 p. 65-70. July/September 2002

Part of a special section on e-learning prospective in the Asia-Pacific region. The writer discusses the need for e-learning in the African context. He reviews some of the limited studies of the use of e-learning in Africa and the progress made in this area South East Asia. The writer concludes that innovative measures must be adopted to teach electronic courses in science and technology, where practical work is crucial to both the understanding of the concepts and the growth of the individual to the profession.

M. Bhattacharya ed. **Special Issue on E-Learning Prospective in Asia Pacific.** International Journal on E-learning v.1 no.3 p. 5-6, 23-70. July/September 2002

A special section on e-learning prospective in the Asia-Pacific region is provided. Articles discuss the differences between communities of practices and quasi-communities; the convergences of distance education, on-campus learning, and e-learning in Australia; a framework for the implementation of situated online, collaborative, problem-based activity; the emerging trend of knowledge management through e-learning in Indian higher education; adaptivity through the use of mobile agents in Web-based student modeling; and science and technology courses via e-learning in Africa.

Satoru Fujitani, Bhattacharya, Madhumita and Kanji Akahori. **ICT Implementation and Online Learning in Japan.** Educational Technology v. 43 no. 3 p. 33-7. May/June 2003

Part of a special issue on online learning and information technology in the Asia-Pacific region. The implementation of information and communications technology (ICT) in education and online learning in Japan is discussed. Although there have been ambitious research and development efforts, the use of ICT and online learning has not been particularly appreciated at large numbers of schools in Japan. However, a project called E-Japan Strategies is now underway to emphasize the educational use of ICT and progress in the implementation of ICT in schools. Moreover, a new curriculum that puts emphasis on the use of ICT will have powerful inducements to educate students with a certain level of knowledge and skills. A suggested model for online learning in education is discussed.

Sneha M. Joshi, K. Pushpanadham, and Anjali Khirwadkar. **Knowledge Management through E-Learning: An Emerging Trend in the Indian Higher Education System.** International Journal on E-Learning v. 1 no. 3 p. 47-54. July/September 2002

Part of a special section on e-learning prospective in the Asia-Pacific region. The Indian higher education system must integrate information and communication technologies (ICT) into the system for both academic and administrative tasks. As information is actively digitized, it is evident that both students and teachers of higher education will need access to and an ability to use ICT. The integration of ICT into higher education is not a simple task, and it will require large investments in hardware, software,

training, and content development. As the Indian government will not be able to provide the funds for such large investments, higher education must develop a close collaboration with private organizations, such as NIIT, Aptech, Microsoft, and Infosys.

Australia :

Cameron Richards. **Distance Education, On-Campus Learning, and E-Learning Convergences: An Australian Exploration.** International Journal on E-Learning v. 1 no. 3 p. 30-9. July/September 2002

Part of a special section on e-learning prospective in the Asia-Pacific region. The writer discusses, in an Australian context, an integrated rather than add-on model of e-learning convergences. This model applies to both distance education and on-campus online courses, reflects the use of information and communication technologies as an extended new literacy rather than discrete set of skills or information in a vacuum, and represents a new educational paradigm that builds upon, but goes beyond, a constructivist perspective in the academic and commercial sphere. It involves an approach that encompasses both appropriate and effective learning environments and activities and the interplay of social knowledge and individual performance grounded in specific and concrete contexts.

Based on U.S. model:

The influence of system characteristics on e-learning use. Computers & Education v. 47 no. 2 p. 222-44. September 2006.

The benefits of an e-learning system will not be maximized unless learners use the system. This study proposed and tested alternative models that seek to explain student intention to use an e-learning system when the system is used as a supplementary learning tool within a traditional class or a stand-alone distance education method. The models integrated determinants from the well-established technology acceptance model as well as system and participant characteristics cited in the research literature. Following a demonstration and use phase of the e-learning system, data were collected from 259 college students. Structural equation modeling provided better support for a model that hypothesized stronger effects of system characteristics on e-learning system use. Implications for both researchers and practitioners are discussed.

Germany:

Henning Patzold. **Increasing Value Without Increasing Effort? The Use of WebCT in Accompanying Face-to-Face Lectures Under the Constraint of Low Budget.** Journal of Distance Education v. 20 no. 2 p. 78-84. Fall 2005

The writer describes an e-learning offering that was implemented at low cost in a general pedagogy course at the Technical University of Kaiserslautern, Germany. The course involved a blended learning format to allow discussions to be added to the lecture. The e-learning element of the course aimed to give students an opportunity to deal with the concepts mentioned in the lecture and the literature through online chats and forum discussions and to offer students a way to prepare better for the examination by creating such resources as online quizzes and lists of central concepts. Overall, the online activities proved of benefit to the students and the teachers, with students who made extensive use of the online material performing better in the examination and teachers becoming more precise in their planning and gaining an additional way to estimate how competent students make use of the concepts taught in the lecture.

Scotland- reasons for lack of e-learning in universities:

Margaret Wallace. **An investigation into copyright concerns as a barrier to the widespread development of e-learning practice within Scottish further education colleges.** Information & Communications Technology Law 15:79-119 no. 1 2006

The article highlights the need for a strategic approach to e-Learning development with clear guidance information available to all. Electronic learning has the potential to transform the way teaching is both

designed and delivered. Government at local, national and international levels have heralded the advent of e-Learning as a positive contribution towards the achievement of a wider lifelong learning agenda. In actuality, the adoption of online learning practices by public education providers has been much slower than anticipated. Frustrated by limited progress to date, educational agencies have recently sought to identify major factors impeding development. Variables such as access to technology, adequate funding strategies and increased awareness of initiatives at senior level within educational institutions have all become the focus of further research. The issues of cultural change among academic communities and re-engineering of operational procedures within schools, colleges and universities can be seen as the key determinants of successful widespread adoption and development of e-Learning practice. This article reports the findings of research carried out within the Scottish further education community. The primary research conducted investigated academics' copyright concerns as a barrier to the widespread adoption of e-Learning practice. The study surveyed Scottish further education academic staff regarding levels of usage of existing e-Learning environments and found copyright concerns to be the legal area of most concern, even greater than data protection or freedom of information. Copyright was the most frequent area of request for legal awareness training among teaching practitioners. The survey and report takes account of major initiatives in e-Learning development including JISC studies, funding council reports and governmental strategic planning. Detailed consideration of the impact of these initiatives form a major part of the secondary research along with an analysis of staff development support to date. A need for coherent training and guidance focused on practitioners' needs was highlighted by the research. Reflections were that this had not yet been made available in a form recognized by the practitioners. Following the adoption of the European Union Copyright Directive into British law in 2003, the exemptions afforded to education have been radically altered. The article also contains an in-depth analysis of these changes and a review of existing literature on the subject.

High School:

Michelle Selinger. **Cultural and Pedagogical Implications of a Global E-learning Programme.** Cambridge Journal of Education v. 34 no. 2 p. 223-239. June 2004

An eleven country internal evaluation of the Cisco Networking Academy program across Europe, the Middle East and Africa, revealed a number of issues related to the globalization of e-learning. The Academy program is a 280-hour web-based course that teaches students to install, maintain and troubleshoot computer networks. It was developed in the US by educators and Cisco network specialists and is taught in educational institutions in over 150 countries worldwide. Hitherto research on cultural influences on teaching and learning have been limited to overseas students being taught in an unfamiliar culture or online by teachers with unfamiliar pedagogical strategies. Through interviews with both students and teachers and observation in classrooms, this study reveals how important local tutors are in helping students adapt to the style of the material and to make a course developed in another country both culturally and pedagogically relevant.

John G.Hedberg and Lim Cher Ping. **Charting Trends for E-Learning in Asian Schools.** Distance Education v. 25 no. 2 (October 2004) p. 199-213. October 2004

Numerous schools in Asia are implementing innovative strategies to ensure the success of electronic learning. Three issues that are critically important for the success of these initiatives relate to the design of learning tasks, support and resources in the learning environment, and reorganization of methods of communication. Each of these potential challenges is discussed.

John Eggleston. **Forging ahead.** The Times Educational Supplement no. 4245 p. 12. November 1997

Botswana is leading the way in design and technology education in southern Africa, with a well-established and highly developed program in its senior secondary schools and a newly introduced mandatory three-year program for junior secondary schools. The subject enjoys a level of resourcing that is the envy of many other countries. In contrast to the situation in Great Britain, there has been no attempt to erase the country's tradition of skills.

Books:

Mike Savage, Ed. and Prem Naidoo, Ed. **Popularisation of Science and Technology Education: Some Case Studies from Africa.** Commonwealth Secretariat, London (England) 270p. 2002

This book contains case studies concerning the popularization of science and technology education in Africa. Science and technology, and science and technology education, play an important role in the development of a country's economy, environment, social relations, and other sectors. African countries recognize this role and many have committed considerable resources to the development of science and technology and their educational systems. In African countries, science and technology education stresses the memorizing of facts rather than problem solving, and concentrates on the teaching and learning of a cultural and irrelevant science and technology. African countries must, therefore, recognize the need to promote, develop, and sustain a relevant science and technology culture, which includes problem solving and indigenous aspects, in order to narrow the gap between them and industrialized countries. Chapters include: (1) "Issues and Realities" (Prem Naidoo and Mike Savage); (2) "The Contribution of Science and technology " (Prem Naidoo and Mike Savage); (3) "Choosing Good Science in a Developing Country" (Robert Adams); (4) "University Science and technology Education and Economic Development" (Emmanuel Fabiano, Keto Mshigeni, and Osmund Mwandemele); (5) "Small-Scale Industries in the Popularization of Science and technology in Ghana" (Jesse Amuah); (6) "The Suame Magazine" (Henry Brown-Acquaye); (7) "Indigenous Knowledge Systems and Their Economic Potential in South Africa" (Otsile Ntsoane); (8) "Promoting Co-Operation in Science and technology in the SADC Region" (Michael Kahn); (9) "Regional Co- Operation for Capacity Building in Science and technology " (J.G.M. Massaquoi and Mike Savage); (10) "Improving Girls' Participation and Performance in Science, Mathematics and technology -Based Education" (Jane Mulemwa); (11) "Using the Mass Media to Promote Science and technology " (Mike Savage); (12) "Malawi and Zanzibar: Exemplars of Inquiry Science in School and the Community" (Mike Savage); (13) "Non- Formal and Formal Approaches to Science and technology Education in Malawi" (Matthew Chilambo); (14) "Popularizing Science and technology: The Case of Swaziland" (Bongile Putsoa); (15) "The Contribution of Applied Science to the Popularization of Science and technology: A Ghanaian Case" (Jophus Anamuah-Mensah); (16) "Promoting the Public Understanding of Science and technology: The South African Case" (Bothale Tema, Kebogile Dilotsotlhe, and Jaap Kuiper); (17) "Indigenous technology as a Basis for Science, Mathematics and technology Education at the Junior Secondary School Level: A Sierra Leonean Case Study" (Sonia Spencer); (18) "Using Television to Promote Science and technology " (Marian Addy); (19) "A Synthesis" (Prem Naidoo); and (20) "Towards a Theory of Change: A Postscript for Policy-Makers" (Mike Savage). (MVL)

William Horton and Katherine Horton. **E-learning Tools and Technologies: A consumer's guide for trainers, teachers, educators, and instructional designers.** John Wiley & Sons. 592 pages. 2003

A comprehensive guide to help you cut through the hype in order to select the best E-Learning tools and vendors for your specific needs. With its ability to both reduce operating costs and train more people, E-Learning is an attractive option for companies that are trying to balance business and educational goals. But in order to implement an E-Learning program, you'll have to wade through hundreds of learning management systems, learning content management systems, authoring schools, and collaboration environments to determine what solution will work best for your situation. In this in-depth book, recognized E-Learning experts William and Katherine Horton survey the entire field of E-Learning tools for you. They provide you with a systematic way to identify, evaluate, and choose products and services based on different E-Learning scenarios.

Paul Tiyambe and Zeleza Adebayo Olukoshi ed. **African Universities in the Twenty-first Century.** Volume II: Knowledge and Society. 350 pages. 2004

As the twenty-first century unfolds, African universities and indeed universities everywhere, are undergoing unprecedented change and confronting multiple challenges brought about by the vast and complex processes of globalisation and technological change. Powerful internal and external forces – political, pecuniary and paradigmatic – are reconfiguring all aspects of university life constituted around the triple mission of teaching, research and service. Important chapter: "Knowledge Creation and Dissemination in African Universities with Special Reference to Information and Communication Technologies (ICT):"

Alison A. Carr-Chellman. **Global perspectives on e-learning : rhetoric and reality.** Thousand Oaks, Calif.; Sage Publications. 2005.

Articles include: China's online education : rhetoric and realities / Ke Zhang -- The gap between e-learning availability and e-learning industry development in Taiwan / Jiang Jiaqi -- The distance in education and online technologies in India / Priya Sharma -- Online learning and differential participation in a democratic society : Ireland as a case study / Sarah Fitzpatrick & Paul Conway -- E-learning democracy and social exclusion? : issues of access and retention in the UK / Ormond Simpson -- International study circles / Ben Salt -- A critical look at distance education in Turkey / Husra Gursoy -- Canada's SchoolNet : wiring up schools? / Leslie R. Shade & Diane Y. Dechief -- The new frontier : Web-based education in US culture / Alison A. Carr-Chellman -- New Zealand : is online education a highway to the future? / Bill Anderson -- Towards borderless virtual learning in higher education / Colin Latchem -- Development and democracy in Namibia : the contribution of information and communication technologies (ICTs) / R. Kavena Shalyef & Hilda Nakakuwa -- Can you lead from behind? : critical reflections on the rhetoric of e-learning, open distance learning and ICTs for development in Sub-Saharan Africa (SSA) / Wayne Mackintosh -- Stalled : e-learning as thwarted innovation / Robert Zemsky & William F. Massy

Section 2: Related to use of technology for distance learning- Annotated Bibliography

Yared Getachew. **Access and Utilisation of ICTs: the Case of Distance Education in Ethiopia.**

Education and training are strategic tools that a society needs to continuously apply in order to sustain a global competitive advantage, create a better standard of living and / or development. To this effect, Distance Education (DE) has increasingly been used in most parts of the world as a viable alternative to the conventional education. Since the success of any DE depends on the appropriate and effective application of ICTs in its system, the repeated reports about the high prevalence of problems in most developing countries with regard to the use of ICTs in DE deserve serious research attention. More specifically, the paper examines the current status in the use of ICTs in DE programs in Ethiopia, the possible problem areas in the use of ICTs in DE and forwards recommendations could be made for the better use of ICTs in DE in Ethiopia.

Available online at:

<http://ethiopiaknowledge.org/Final%20Papers/Distance%20Education%20in%20Ethiopia,%20Yared%20Getachew.pdf>

Adeline Du Toit and Marie-Luce Muller. **Training Competitive Intelligence Analysts via the Web: The University of Johannesburg Experience.** Journal of Education for Library and Information Science, v. 46 no. 4 p. 320-32. Fall 2005

Internet and Web-based hardware and software are being developed and supported on an international scale. The Department of Information and Knowledge Management at the University of Johannesburg, in cooperation with IBIS Business and Information Services, presented the first-ever course in South Africa on competitive intelligence analysis in 2003. The short course in Strategic Competitive Analysis is described as an example of a successful Web-based distance learning programme.

Glen M. Farrell Ed. **The Development of Virtual Education: A Global Perspective. A Study of Current Trends in the Virtual Delivery of Education.** Commonwealth of Learning, Vancouver (British Columbia). 178p. 1999

This document contains 11 papers examining the methodology and findings of a study of the virtual delivery of education throughout the world. "Introduction" (Glen M. Farrell) explains the study methodology, which entailed the identification of 10 global regions and commissioning of an individual in each region to write a paper describing the state of practice of virtual education in the region and the potential impact of virtual education initiatives on current practices in distance and open education. The authors and titles of the remaining 10 papers are as follows: "The Development of Virtual Institutions in Canada" (Glen M. Farrell); "Distance and Virtual Learning in the United States" (Peter J. Dirr); "Distance and Virtual Learning in the Caribbean" (Peter J. Dirr); "Open and Distance Education Programmes in Latin America" (Victor Guerra Ortiz); "European Trends in the Virtual Delivery of Education" (Robin Mason); "Virtual Institutions on the African Continent" (Vis Naidoo, Casper Schutte); "Virtual Institutions in the Indian Subcontinent (Including Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka)" (Sugata Mitra); "Virtual Institutions in East and Southeast Asia" (Michael Robertshaw); "Virtual Education Institutions in Australia: Between the Idea and the Reality" (Suellen Tapsall, Yoni Ryan); and "Trends in the Virtual Delivery of Education in New Zealand and the Pacific Islands" (Lalita Rajasingham). (MN)

Ina Fourie. **Teaching Indexers and Abstractors through Distance Teaching Programmes.** Mousaion v. 22 no. 2 p. 191-211. 2004

Distance teaching programmes can offer working adults valuable opportunities for furthering their careers in a dynamic indexing and abstracting environment that includes database indexing, book indexing and Web indexing. On the basis of experience gained at the University of South Africa (UNISA), a study of the practice of distance teaching and an instructional design model developed by the author, suggestions are offered for the design of distance teaching programmes for indexers and

abstractors. The model specifies the aspects to consider, namely teaching philosophy, characteristics of distance teaching (including the benefits and disadvantages), situation analysis, formulation of aims and learning outcomes, actual development of the programme (including the selection of media and teaching strategies), selection of assessment methods, offering of learner support and evaluation of the programme. Suggestions are made for the teaching of indexing and abstracting, bearing in mind that there are different models of distance teaching programmes. The choice of a model would depend on the particular situation (e.g. the availability of information technology infrastructure). Reprinted by permission of the publisher.

David A. Light. **Pioneering distance education in Africa.** Harvard Business Review v. 77 no. 5 p. 26. September/October 1999

The World Bank's African Virtual University (AVU) is using sophisticated communication technologies to bring knowledge to an undereducated continent. Launched in 1997, the AVU enables students in 16 African nations to take courses and seminars delivered via satellite by professors from universities around the world. The lessons are primarily taught by American and European institutions and are beamed to 22 universities in Africa, and courses have sought to fill gaps in the curriculum, particularly in engineering and science, with a growing emphasis on business training. In the past year, around 2,000 hours of instruction have been broadcast and around 5,000 students have completed at least one semester-long course, with another 1,000 taking part in shorter seminars. For managers who can see market openings in Africa, the AVU may serve as a useful means of training African workers. The success of the program is examined, and some of the challenges it faces are discussed.

O. Felix Ayadi, Adekoya, A. Adyemi and Fidelis Ikem. **Exploring a Distance Education Partnership between Historically Black Colleges and Universities and African Universities.** Journal of Black Studies v. 35 no. 6 p. 763-78. July 2005

Technology can be used to establish cooperative and educational partnerships between universities in Africa and historically black colleges and universities (HBCUs) in the U.S. Such partnerships would benefit both participating HBCUs and African universities in a number of ways. An advanced information infrastructure would help the African labor force to compete and succeed in the global economy, thus generating competitive and gainful employment for individuals and supporting growth and economic development for the continent. In addition, a joint venture between universities in Africa and HBCUs would provide African-Americans with opportunities to connect with their roots.

P.R. Ramanujam. **Distance Open Learning in the Developing Asian Countries: Problems and Possible Solutions.** ZIFF Papiere 117. 2001

Problems facing distance open learning in the developing Asian countries were examined, and possible solutions were proposed. The prominent features of distance and open learning in 10 developed nations were identified. Existing distance education (DE) systems in developing nations in Asia, Africa, and Latin America were reviewed and found to share the following features: inadequate finances; poor communication and infrastructural facilities; the absence of clear governmental policies; limited use of audiovisual media; a shortage of experts to develop multimedia courses; a lack of financial and academic autonomy for distance teaching institutions; and distance education's low social and academic status because of quality issues. The review indicated that blindly copying Western models of DE is more dangerous than evolving indigenous models for developing countries. The future of DE in developing countries was shown to depend primarily on the ability of DE institutions to respond to the specific needs of learners at different levels. The following actions were recommended for improving DE in developing Asian countries: (1) review existing institutional structures and governance; (2) evaluate existing methods of teaching and learning and existing support systems; and (3) recognize the potential of information communication technologies and evolve appropriate policies for distance open learning. (Contains 30 references.) (MN)

The State of the Art of Distance Education in SEAMEO Member Countries. SEAMEO Forum v. 2 no. 2 p5-12. Jan-Jun 1995

Discusses the distance education programs of nine SEAMEO (Southeast Asia Ministers of Education Organization) countries. Highlights include technological advances and technology needs; educational reform; formal and nonformal education; educational resource centers; educational media including print materials, broadcast media, and audiovisual materials; open universities; elementary, secondary, and higher education; and program developments and problems. (AEF)

A. G. H. Ismail. **Face-to-Face and Distance Learning in Sri Lanka: Contradictory or Complimentary.** Sri Lanka. 1992

This paper explains the effectiveness of distance teaching in Sri Lanka and shows the importance of face-to-face components in distance learning to meet the needs of students and resources. Distance education in the Third World and the current status of distance education at the Open University of Sri Lanka (OUSL) are described, and the characteristics of distance learners in Asia and Sri Lanka are noted. The results of a survey of students who had been in the OUSL distance education program are cited: (1) these students expected a learning system similar to learning taking place in conventional settings; (2) they preferred face-to-face teaching; (3) they lacked self confidence in self learning; (4) they expected continuing help and guidance from the institution; and (5) most were not used to and had no access to modern technology. The lack of autonomy, limited resources, and past experiences of the students are seen as major inhibitors to the development of distance education in Sri Lanka; and a complementary system of distance teaching and face-to-face teaching in the form of tutoring and counseling is recommended. (ALF)

Johannes C. Cronje. **Pretoria to Khartoum--how we taught an Internet-supported Masters' programme across national, religious, cultural and linguistic barriers.** Journal of Educational Technology & Society v. 9 no. 1 p. 276-88. 2006

This article tells the story of the design, development and presentation of eighteen months of coursework for a Master's degree programme in Computer-Integrated education at the Sudan University of Science and Technology in Khartoum from 2002 to 2004. The focus is on what was learnt in adapting a programme presented at the University of Pretoria to cope with the challenges of teaching at an institution thousands of kilometres away, where technological infrastructure, time and policy issues; and even the weather played an often disruptive role. The data sources from which the story is constructed are field notes and preparation material, the project diary, informal discussion both physical and online; interviews and email messages with students, local facilitators, local administrators and presenters; as well as the electronic artefacts produced by the students. A comparison between a synthesis of the literature and the narrative description leads to the identification of seven assumptions that may guide the design, development and presentation of international, cross cultural Internet-supported teaching initiatives.

Gary Natriello, ed. **Distance Learning.** Teachers College Record v. 107 no. 8 p. 1582-904. August 2005.

A special issue on distance learning is presented. Articles discuss a learner-centered framework for e-learning; some of the common metaphors used to describe the Web and its application to distance education; an evaluation of a virtual schooling innovation in an Australian senior secondary schooling context; the potential of jigsaw role playing to promote the social construction of knowledge in an online graduate education course; an innovative approach that attends to sociocultural perspectives of learning and models sociocultural pedagogy; the decentered teacher and the construction of social space in the virtual classroom; the use in large-enrollment classes of a Web site called Plants, Pathogens, and People; the findings of an intensive study of online education; how adults learn from asynchronous written dialogue through the lens of psychological type preferences; the characteristics that make e-learning a unique environment; the findings of a metanalytic study of research on distance education; and the developments shaping distance learning and their implications for educational researchers and for the future of education.

Asia:

Simon Marginson. **Don't Leave Me Hanging on the Anglophone: The Potential for Online Distance Higher Education in the Asia-Pacific Region.** Higher Education Quarterly v. 58 no. 2/3 p. 74-113. April/July 2004.

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, NYUOnline 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 customized 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 skepticism about commercially driven scenarios and claims of company prospectuses, and about the viability of market-controlled paths of development

Book:

Kjell Erik Rudestam. **Handbook of Online Learning: Innovations in Higher Education and Corporate Training.** Sage Publications, Inc. 472 pages. 2002

This book not only is that rare breed that addresses online learning in both higher education and corporate environments but every chapter is intriguing, informative, and accurately grounded. This book provides a comprehensive, timely, and informative look at online learning in higher education and corporate training settings. For an update on the state of e-learning in educational and training environments, simply read this book.

Section 3: Related to Use of Technology for the Professional Development of Teachers- Annotated Bibliography

Tim Unwin. **Toward a Framework for the Use of ICT in Teacher Training in Africa.** Open Learning v. 20 no. 2 p.113-129. June 2005

There is a gulf between the rhetoric of those advocating the use of ICT in education in Africa and the reality of classroom practice. This paper explores some of the reasons for this, and outlines a possible framework for the successful implementation of teacher training programmes that make advantageous use of appropriate ICTs. It argues that six fundamental principles of good practice must be addressed for such programmes to be effective: a shift from an emphasis on 'education for ICT' to the use of 'ICT for education'; an integration of ICT practice within the whole curriculum; a need for integration between pre-service and in-service teacher training; a need for the development of relevant and locally produced content; a need for appropriate educational partnerships; and an emphasis on the development of sustainable costing models. The paper concludes with a framework for action to deliver the very real benefits of ICT for teacher training in Africa.

Jenny Leach. **Do New Information and Communication Technologies Have a Role to Play in Achieving Quality Professional Development for Teachers in the Global South?** Curriculum Journal v. 16 no. 3 p. 293-329. September 2005

This paper is addressed to the international community of educators and educational policy makers who, it is argued, need to commit to joint research and creative action in respect of the challenge of Education for All (EFA). The first section, A Global Challenge for Teacher Development, sets out: the implications for teacher education of the Education For All agenda; the potential of new information and communication technologies (ICT) in addressing this problem; an overview of an applied research project exploring new models of teacher education using ICT in rural and resource challenged environments. In the second section Towards New Models of Professional Development, four categories of teacher professional knowledge from this model are used to interpret and explore the findings of the project and its impact on teacher knowledge and development. The paper concludes that ICT can no longer be viewed as some sort of optional pedagogic strategy available in ever increasing sophistication, as well as quantity, to only a small proportion of the world's teachers. They need to be seen as an essential aspect of teaching's cultural toolkit in the 21st century, affording new and transformative models of development that extend the nature and reach of teacher learning wherever it takes place. Such models must be experienced, shared and evaluated by educators world wide if the global commitment to achievement of the EFA targets is to become a reality.

Susan McKenney. **Technology for Curriculum And Teacher Development: Software To Help Educators Learn While Designing Teacher Guides.** Journal of Research on Technology in Education, v. 38 no. 2 p. 167-9. Winter 2005

This article describes research on the quality of a computer program designed to help secondary level science teachers in southern Africa create exemplary paper-based lesson materials. Results of this study show that the content, support, and interface of the program combine to form a tool that is considered by both users and experts to be valid and practical. Findings further indicate that it has the potential to help users create good quality materials while learning from the design process, but that this potential depends primarily on how the program is implemented. (Keywords: ICT, curriculum development, teacher professional development.) Reprinted by permission of the publisher.

Leah C. Keino, Ria Van Wyk and Suzanne Hendrich. **Curbing Migration of Talent in Africa: Initiatives for Collaborative Action.** Journal of Family and Consumer Sciences, v. 97 no. 4 p. 65-8. November 2005

Conducting a needs assessment, family and consumer sciences (FCS) faculty from Iowa State University and the University of Stellenbosch in South Africa examined how shared online courses could be used to develop faculty capacity for FCS education and increase access to higher education in South Africa. This collaborative needs assessment highlighted the need to use emerging digital technologies to increase

access to higher education in South Africa and bridge the knowledge gap between developed and developing nations. Other findings and implications of this collaborative needs assessment are discussed.

Kay Stables and Richard Kimbell. **Technology Education in South Africa: Evaluating an Innovative Pilot Project.** *Research in Science Education* v. 31 no. 1 p.71-90. 2001

Reports on the evaluation of a three-year curriculum initiative introducing technology education through a learner-centered, problem solving and collaborative approach. Draws attention to the critical impact the project had on the pedagogy of teachers. (DDR)

Shelley B. Wepner, Liging Tao and Nancy M. Ziomek. **Three Teacher Educators' Perspectives about the Shifting Responsibilities of Infusing Technology into the Curriculum.** *Action in Teacher Education* v. 24 no. 4 p. 53-63. Winter 2003

The purpose of this study is to identify ways in which teacher educators shift responsibilities to infuse technology into their methodology courses and student teaching assignments, and to see if there are changes in students' skills as a result of new requirements. Three education faculty and 39 students participated. The following data sources were used: faculty's reflection journals; observations of student presentations in real classrooms and in college classrooms; students' reflection journals; students' evaluation of the technology requirements; and students' lesson plans. Pre- and post-study technological surveys showed significant differences in two areas. Four general categories of shifting responsibilities emerged from the study: (1) a shift in our role as instructor; (2) a shift in the way we plan for instruction and supervision; (3) a shift in our actual instruction and supervision; and (4) a shift in the way we monitor students' progress with technology infusion.

Shelley B. Wepner, Liging Tao and Nancy M. Ziomek. **Broadening Our View About Technology Integration: Three Literacy Educators' Perspectives.** *Reading Horizons* v. 46 no. 3 p. 215-37. (January/February 2006)

What can we realistically expect teacher educators to do with technology, given the contexts in which they find themselves, the skills that they bring to their contexts, and the changes that they would need to make? We attempt to answer this question through three self-studies as we integrated technology into methods courses and student teaching supervision. Data sources included reflective journals, lesson plans, observations, and interviews. Pre-established categories and constant comparative method were used to analyze the data. Three common themes emerged (the issue of technology integration; the interdependence of skills, responsibilities, and context; and the mediation of context) that lead us to conclude that the notion of technology integration varies in different contexts. The paper mentions two studies that actually have focused on the contexts in which faculty members integrated technology. Studies indicate that faculty use of technology has been affected by the technical skills of the faculty (Myers, Miels, Ford, & Rurke, 1997), level of access to technology (Boling, 2003; Wepner, et al., 2003), technical support (Boling, 2003; Morrow, et al., 2002), and university teaching experiences (Boling, 2003), and curricular appropriateness of technology integration (Wepner, et al., 2003).

Asia:

Therese Laferriere, Mary Lamon and Carol K. K. Chan. **Emerging E-Trends and Models in Teacher Education and Professional Development.** *Teaching Education (Columbia, S.C.)* v. 17 no. 1 p. 75-90. March 2006

With the advent of the knowledge era, teacher education needs to prepare teachers to face the changing technological contexts and to model pedagogies and tools for better forms of learning. Despite much enthusiasm about the roles of technology in education, its role in transforming teacher learning, in ways aligned with advances in the learning sciences and contemporary socio-cultural perspectives, few changes have occurred. While many teacher educators are turning away from technology after early attempts met with mitigated success, some are pushing the boundaries of teacher education and professional activity systems. This paper identifies and analyzes emerging trends and models in e-learning for teacher education and professional development from the developing research base; both international trends and current developments in the Asia-Pacific region are described. We focus on

progressively more sophisticated approaches including: (1) renewal of delivery of information with online repositories and courses; (2) rise of web-supported classrooms; (3) participation in learning networks and communities; and (4) knowledge creation in knowledge-building communities. We propose that technological innovations accompany social and pedagogical changes, and for the betterment of education, teachers need to play key roles as owners and designers of their learning. The potentials and challenges regarding these emerging trends in e-learning and their implications for teacher learning are examined.

Carol K.K.Chan and Ming Fai Pang. **Teacher Collaboration in Learning Communities**. *Teaching Education* (Columbia, S.C.) v. 17 no. 1 p. 1-5. March 2006

Part of a special issue on teacher collaboration in learning communities. An introduction to the special issue is provided. This special issue addresses the teacher learning issue in light of current changes in technological, socioeconomic, and educational contexts worldwide, with particular emphasis on the Asia-Pacific region. Specifically, it explores how to use teacher collaboration in learning communities to prepare teachers to face the challenges of this new era.

Section 4: Other e-learning Articles as appropriate - Annotated Bibliography

Importance of e-learning in Developing countries:

C. Kante and V. Savani. **e-Learning - The New Frontier in the Developing World.** TechKnowLogia. 5 (1). 2003

Countries across the globe are at different stages of integrating information and communications technologies (ICTs) into everyday practice, including teaching and learning. While the debate over the true value-added of e-learning versus face-to-face delivery of training content still rages, we all seem to agree that there is a tremendous opportunity for technology to revolutionize learning, just as it did for business. In this article, we will not attempt to compare e-learning with other content delivery mechanisms. Rather, we will focus our discussion on the educational potential of e-learning, with a particular emphasis on the seemingly endless opportunities associated with the use of e-learning in the developing world. We will elaborate on what we believe are the caveats for any e-learning initiative to attain its expected objectives, and convey the possibilities for application of e-learning in the difficult context of the developing world.

Available online at:

http://www.techknowlogia.org/TKL_active_pages2/CurrentArticles/main.asp?IssueNumber=19&FileType=PDF&ArticleID=458

Guidelines for institutional self-assessment of ICT maturity in African universities. Association of African Universities.

The objective of the study was to synthesize the knowledge base of how African universities are using ICTs to improve their teaching methods, enhance learning, strengthen research functions, and manage library and other academic information services. The study would also provide a guide for assessing institutional capacity to integrate technology with pedagogy and to reform curriculum development. The purpose of this report is to encourage institutional arrangements that can help stakeholders in African universities make prudent investments in ICT and maximize benefits. African institutions are urged to seek synergy among themselves in order to make well-coordinated responses to current and future challenges in the information age. This report aims to help the stakeholders and decision-makers of individual institutions make informed choices in their strategies for the introduction, development and application of ICTs in their universities.

Available online at: <http://www.aau.org/english/documents/ICT-GUID.pdf>

Daniel Wagner, Tim Unwin and al. **Monitoring and Evaluation of ICT in Education Projects: A Handbook for Developing Countries.** InfoDev publications. 2006

A review of monitoring and evaluation impact evidence; core indicators for monitoring and evaluation studies; developing a monitoring and evaluation plan; capacity building and management; pro-equity approaches to monitoring and evaluation: gender, marginalized groups and special needs populations, and dos and don'ts in monitoring and evaluation.

Laura Czerniewicz. **Cape of Storms or Cape of Good Hope? Educational Technology in a Changing Environment.** British Journal of Educational Technology v. 35 no. 2 p145-158. March 2004

This article locates and describes the work of the Multimedia Education Group (MEG) at the University of Cape Town (UCT). This work is contextualised by three national and international challenges, these being (1) the need to increase access to new technologies and overcome the digital divide, (2) the need to respond to a new communication order, and (3) the urgency of transforming higher education in post-apartheid South Africa. Operating in a fragmented policy environment, MEG has focused on developing educationally appropriate low-cost interventions, supporting academically disadvantaged students, and understanding the relationship between online and contact educational interventions. MEG's experiences

suggest that this kind of emergent work requires new ways of working, contributing to transformation within the institution itself. The work also creates epistemological challenges because it is interdisciplinary and because educational technology is a field that is not yet firmly established.

Design and evaluation of e-learning:

Monica Landoni and Paloma Diaz. **E-education: Design and Evaluation for Teaching and Learning.** Journal of Digital Information v. 3 Issue 4. 2003

This paper addresses the need for a conceptual approach to researching, e-learning instructional design and the technologies employed as a basis for e-learning. It describes the goals of this issue of the Journal of Digital Information. Design and usability of e-learning objects are the main focus of the papers in this issue. It provides readers with some insights into the state-of-the-art of research in usability in e-education, showing how independent this area has become. There are still a number of open challenges, such as the holy grail of setting recognised and workable standards, and the definition of criteria for measuring how successful e-learning objects are in achieving their objectives. This is what makes research in this area such a challenge.

R. W. Burniske. **East Africa Meets West Africa: Fostering an Online Community of Inquiry for Educators in Ghana and Uganda.** Educational Technology Research and Development v. 51 no. 4 p. 105-13. 2003

How might one design and facilitate a hybrid course for educators in Africa to explore ways of integrating technology with the theme of sustainable development? How might such a course overcome technological constraints, linguistic barriers, and cultural differences to foster online discussions? How might participants create and sustain a telecollaborative learning community that enables relative novices to develop the skills necessary to participate in distributed, online learning activities?

Barriers in harnessing the full power of ICT for teaching and learning:

Daniel G. Alemneh and Samantha K. Hastings. **Developing the ICT Infrastructure for Africa: Overview of Barriers to Harnessing the Full Power of the Internet.** Journal of Education for Library and Information Science v. 47 no. 1 p. 4-16. Winter 2006

The synergies of numerous emerging trends are shaping creation, access, use and preservation of information resources. The digital library environment provides scholars with access to more diverse and previously unavailable contents that span myriad technologies across institutions and nations. Although the uses of Internet technologies provide new directions for scholarship, there are discrepancies among nations and regions. These technologies have not been fully exploited in Africa in particular. As research and scientific inquiry depend on both the availability of heterogeneous resources from multiple sources and their openness to easy and continued access, addressing the universal access issue is paramount. This article discusses and provides an overview of some of the barriers or principal factors most likely to influence Africa's efforts in harnessing the full power of the Internet and ICT for teaching and learning.

Elizabeth Henning, and Duan van der Westhuizen. **Crossing the digital divide safely and trustingly: how ecologies of learning scaffold the journey.** Computers & Education, v. 42 no. 4 p. 333-52. May 2004

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 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 elearning, more than technology and the curriculum itself. Copyright (c) 2003 Elsevier Ltd

Elmaire Engelbrecht. **Adapting to changing expectations: Post-graduate students' experience of an e-learning tax program.** *Computers & Education*, v. 45 no. 2. September 2005.

In response to the impact of information and communication technology on traditional business and commerce practices, and the empowerment of individuals by the growth of information available on the Internet, educators are challenged to adapt the curricula and delivery modes of educational programs for knowledge workers, such as tax accountants. Today's tax accountants are expected to be computer and information literate, and are valued for their critical thinking skills based on subject knowledge. This article evaluates the implementation of an e-learning Masters Program in Taxation in South Africa based on the feedback from students. Three criteria are used: the use of technology, the learning design, and flexibility of the tax program. Students reacted positively to the use of technology, but expressed concern about the lack of interaction between students, and between students and teachers. The author argues that the choice of technologies, the outsourcing of teaching services, and the program facilitator's teaching approach emulate the face-to-face tax program and therefore still support a teacher-centered teaching and learning approach. Students and teachers who are used to a traditional teacher-centered teaching and learning approach often measure the quality of a learning experience by the amount of information transmitted by a subject expert. Getting students to take responsibility for their own learning poses a bigger challenge than improving students' computer and information skills. Several recommendations are made to improve e-learning programs that will produce self-directed, lifelong learners who can be productive in an information-based economy.

Andrea Useem. **Wiring African Universities Proves a Formidable Challenge.** *Chronicle of Higher Education* v. 45 no. 30 p. A51-A53. April 1999

Lack of funds and competition for scarce resources have made it impossible for many African universities to gain access to technology. Internet use is extremely limited, and the infrastructure is inadequate to support rapid expansion. Information technology, when available, is seen as a way for African academics to overcome isolation by once again making academic journals affordable. (MSE)

John M. Mativo. **The Challenge of Teaching Technology in a Developing Nation.** *Tech Directions*, v. 65 no. 5 p. 22-5. December 2005

A report on the challenges that face the Department of Technology at the University of Eastern Africa in Baraton, Kenya, is provided. Some of the challenges facing this department include its rural location, lack of trained and qualified personnel, inadequate facilities, and students' dependence on government employment.

Cheryl Brown and Laura Czerniewicz. **Access for all? Unpacking the complexities of access to ICTs for diverse South African higher education students.** Paper for World Forum on the Information Society. November 2005

This paper examines the resources that students in five higher education institutions in South Africa have access to, in order to use ICTs for teaching and learning. The paper uses a complex conceptual framework of access to describe the kinds of access to specific resource groupings that students have available to them. The framework is summarized here. In particular, the paper explores whether and how different groups of students access specific resource groupings differently. Finally the paper touches briefly on the relationships between specific groups of students, their access to resource groupings, and their use of ICTs for teaching and learning. The need for this study arises from a transforming national and global environment where educational change is inextricably bound up with information and communication technologies (ICTs). At the same time, transformation imperatives, especially since the

South African 1994 elections, have required higher education institutions to foreground issues of social equity and redress. Thus technology and transformation, access and diversity are closely interwoven matters, which need to be simultaneously understood and acted on.

Andy Cawthera. **Computers in Secondary Schools in Developing Countries: Costs and other issues (including Original data from South Africa and Zimbabwe)**. 57p. 2002

This research is mainly concerned with the costs of computers in schools in developing countries. It starts with a brief overview of the information revolution and its consequences. It then briefly examines some of the arguments for the use of computers in schools in developing countries, before reviewing previous work undertaken on the costs of such provision. An analysis of this literature indicates that the costs of equipment (hardware and software) may account for only 16 to 20% of the total cost of computer provision (excluding salaries) over five years. The cost data gathered at school/telecenter level, as a part of this research, is then analyzed. A framework that yields data on housing, equipment, training, running and external support costs was developed and used to gather this data. The data is categorized into Basic, Basic plus and Deluxe provision. Basic and Basic plus provision use second-hand /refurbished equipment, with Basic plus provision also providing raining and support. Only Deluxe provision purchases new equipment. In addition to this, a rural school, community based telecenter provision and commercial provision are looked at. The data supplied is analyzed with various figures being produced for the different categories. The paper then raises other issues which can affect computer provision and utilization including the processes of allocating provision, training of teachers in the use of ICT and models of provision. Conclusions are then drawn and recommendations made. A glossary of acronyms and technical terms is provided. Eighteen tables are included. Appendixes include: efficiency calculations; centrally financed government provision; details of community-based telecenter provision supplied by the U.S.; adjustments made to data received; and reflections on this research and what can be learned for future research. (Contains 10 references and 18 tables.) (AEF)

eGranary- educational resources available on the public Internet in Africa:

Mark Fitz. **Food For Thought: Localized Content Aids Disconnected Africa**. Econtent, v. 28 no. 7/8 p. 10-11. July/August 2005

The WiderNet Project, a nonprofit organization based at the University of Iowa, has introduced the eGranary Digital Library project in an effort to help third world institutions store important educational information at the local level. In the same way in which a village might collect all of its grain together in a granary to insure against famine, an eGranary gathers information into a centralized repository that lacks the difficulties and expense of using the public Internet in Africa. Each eGranary consists of an information-laden hard drive containing a compilation of educational resources available on the public Internet.

U.S. perceptive on effect of technology initiatives in higher education:

Elizabeth A. White, Shelly B. Wepner and Donna C. Wetzel. **Accessible Education Through Assistive Technology**. T.H.E. Journal v. 30 no. 7 (February 2003) p. 24-6, 30, 32. February 2003

A study examined assistive technology initiatives in higher education. Data were obtained from public and private universities and colleges. Results highlighted the complexities of assistive technology's application in higher education and the lack of a specific plan in preservice education. Efforts by some institutions to integrate assistive technology in education courses and a national assistive technology initiative are discussed.

Pascal G. Zachary. **A Program for Africa's Computer People**. Issues in Science and Technology v. 19 no. 3 p. 79-85. Spring 2003

U.S. academics and business professionals can help make the information sector an engine for economic development in Africa. The steady flow of educated people out of Africa creates a brain drain, putting great pressure on university and technical professionals who remain behind, raising costs, and reducing output. U.S. universities, with the support of government and international organizations, can play an

important role in helping African universities and their surrounding technical communities. The growing computer community in Africa has the skills and interest to take advantage of stronger links to U.S. computer scientists and electrical engineers, who can make a few inexpensive and flexible efforts to integrate the African high-tech sector. The writer illustrates the drive to develop a home-grown cadre of software programmers and computer engineers in Africa with the case of several individuals from the growing computer community of Ghana.

Expanding public-private partnership activities in e-Learning:

Norman LaRocque and Michael Latham. **The Promise of E-learning in Africa: The Potential of Public-Private Partnerships.** IBM Endowment for the Business of Government. January 2003

The report is based on the premise that e-learning is now a viable tool for addressing the significant education challenge in Africa. The report argues that adopting e-learning in Africa will increase education access and quality, as well as lower education cost. There are now an increasing number of success stories with e-Learning throughout the African continent. This report describes models and approaches of public-private education partnerships that are now in place. While e-learning is not a cure for all the problems related to education in Africa, it is clearly a tool that now must be taken into serious consideration by policy makers and donors. Introducing e-learning technologies in primary, secondary, and higher education in Africa will clearly present many challenges. Thus, partnerships with the private sector will be an essential part of any strategy to bring e-Learning into Africa in a systematic and cost-effective way. There is now considerable potential for expanding public-private partnership activities in e-Learning, including the delivery of services, private finance initiatives, demand-side initiatives, and strategic partnerships.

Available online at: <http://www.businessofgovernment.org/pdfs/LaRocqueReport.pdf>

1st International Conference on ICT development:

Catherine Ngugi. **Report on the AVU (African Virtual University) Odel Seminar: Supporting Open, Distance and e-Learning in African Universities.** June 2006

The report covers the topics discussed at the 1st International Conference on ICT for Development, Education and Training in Ethiopia, May 2006. These include : open educational resources in support of ODEL programs; capacity enhancement for supporting ODeL program development, delivery and management, and bandwidth consortia to reduce connectivity costs in support of ODeL programs.

Report available at: www.avu.org

Tony Bates. **National Strategies for e-Learning in Post-Secondary Education and Training.** Fundamentals of Educational Training. no. 70. UNESCO. 2001

The author sets out key questions that must be tackled when designing e-learning policy strategies. To what extent should e-learning be regulated/deregulated? How to strike a balance between public and private providers? What are the issues at stake in financing e-learning? The report discusses the growth and regulation of e-learning; the costs and benefits of e-learning; building on the existing public sector post-secondary education infrastructure and using e-learning to transform post-secondary educational system. There is also a discussion on the need to funding strategies and e-learning developments in a sustainable manner.

Available online at: http://maple.ubc.ca/mapletest/revisions_ded/downloads/126230e.pdf

ICT in Libraries:

A. S. Obajemu, A. Ibegwam. **A Survey of Librarians' Attitudes to Training Programmes on ICT Application to Cataloguing and Classification Workshops in Nigeria.** African Journal of Library, Archives & Information Science v.16 no.1 p. 19-27. April 2006

A survey of 84 participants at the Cataloguing, Classification and Indexing Group of the Nigeria Library Association workshop in 2004 was carried out with a view to determining the impact of the annual workshop on the application of information and communications technologies (ICT) to cataloguing and classification, in Nigerian libraries. The work covered 43 libraries -- universities, polytechnics, colleges of education, research institutes and ministries/parastatals/agencies which cut across the 6 geopolitical zones of Nigeria (North-East, North-West, North-Central, South-West, South-East and South-South).- The data analysed showed that the workshops organised in recent years had spurred the action of the participants at those workshops to further pursue ICT (78[percent]). The findings also revealed that the workshops have had positive impact on the participants with respect to the application of ICT to cataloguing and classification. Recommendations for libraries that intend to computerise their catalogues were proffered.

Minishi-Majanja and K. Mabel. **Information and Communication Technologies in Library and Information Science Education in South Africa.** Mousaion v. 22 no.2 p.150-71. 2004

Information and communication technologies (ICTs) have become central in the education and training of Library and Information Science/Service (LIS) because of the great influence of these technologies on the profession. The purpose of this study was to determine the extent to which ICTs are applied in research, teaching, learning and academic administration, and establish the levels of ICT support available in South African LIS schools in terms of policies, infrastructure, hardware and human resource. The descriptive survey method was applied. Questionnaires were electronically mailed to 15 LIS education departments in January 2003, out of which 9 (60[percent]) responded. Some of the data was updated by respondents in July 2004. The findings indicated that all LIS departments in South Africa had responded to ICT developments by offering a wide range of ICT modules and embracing the use of ICTs in teaching, research and academic administration. It was observed that changes or modifications in existing qualifications and programmes are ongoing activities in several institutions. The majority of LIS departments in South Africa have interactive Web pages within the respective university/technikon Websites. However, for teaching and learning, only a few of the LIS schools used ICTs in presentation of lectures, while for research, teleconferencing and e-publishing ICTs were not yet extensively exploited. The study recommends that South African LIS schools should increase the use of ICTs in teaching and learning, as is the case in administration, to foster greater effectiveness. South African LIS schools should take advantage of experiences of online and distance education already well established among some universities in South Africa, in order to reach work-bound and other disadvantaged students due to distance from learning centres. The advantages of good Internet access should also be exploited and a mechanism for supporting accessibility should be lobbied for students from the technologically disadvantaged areas.

Daisy McAdam. **e-Learning for Management and Marketing in Libraries.** IFLA Publications Serie No. 115. 2003

This publication reflects the content and richness of the IFLA satellite meeting held in Geneva, Switzerland, in 2003. It was devoted to e-learning for the marketing and management of libraries and was organized by the IFLA Management & Marketing Section, with the help of the University of Geneva, the Ecole nationale supérieure des sciences de l'information des bibliothèques (ENSSIB, France) and the Agence Intergouvernementale de la Francophonie-INTIF. Contributions from experts examine the fundamental e-learning issues raised in Africa, Europe, India and North America, as well as illustrating the power and diversity of this new teaching medium. In the final, informal discussions, chaired by Réjean Savard and Jean-Michel Salaün, we are given many tentative insights into what the future holds for both teachers and students alike.

Book:

Michael Allen. **Michael Allen's Guide to E-Learning.** Wiley. 356 pages. 2002

An industry leader speaks out against boring, ineffective, costly e-learning and provides practical guidelines for creation of powerful, e-learning-based performance solutions. e-Learning is emerging rapidly in schools, businesses, and at home. Millions are being invested in this new, widely available

technology purported as the solution to learning challenges. Dr. Michael Allen, commonly considered the father of modern interactive learning, raises concerns about misuses of the technology, missed opportunities, and money wasted on boring, ineffective e-learning. The book offers specific, pragmatic, common-sense approaches to guide the development of successful technology-assisted learning. A free CD-ROM is packed with sample applications. Michael Allen's Guide to e-Learning enables business executives to become discerning e-learning investors and instructional designers to create meaningful performance solutions.