

Chapter 1 : Distance Communication Technology | It Still Works

The array of new tools cropping up for use in online and distance courses is dizzying. New learning technologies are buzzing around like busy little bees, pollinating the online learning landscape with nuances and, as some might consider them, nuisances.

Tamara Knapp-Grosz, 90 percent of long distance relationships will end within the first year. Based on those numbers, if you are in a long distance relationship, the chances of your relationship lasting longer than 12 months is about the same as you getting into Princeton. While the numbers may be no more than a statistical reference, the fact remains that long distance relationships more often break a relationship than make them stronger. Look how far we have come today though and you realize that 90 percent is just a number. Technology and human innovation has made us smarter, improved the quality of life and has enabled us to understand far more than we ever imagined. Not only has technology helped improve these aspects of our lives, but it has also helped improve relationships, especially long distance. The Global Reach First used in , the webcam is one of the most widely used communication tools today. Thanks to low costs and improved features such as instant messaging and video conferencing, couples no longer have to go months at a time without seeing each other. Nothing will ever replace being with someone in-person, but technology has made it easier to stay in touch with friends and family. Additionally, according to TeleGeography, since its initial release in , Skype is now the largest provider of cross-border voice communications in the world. With over million total Skype accounts worldwide , Skype helps couples span continents and time zones. With the help of tools like Skype, you no longer have to hop on an airplane to see loved ones. What may be a 10 hour flight is now just a few clicks away. Through Facebook wall posts and photo walls, couples can message and keep up with each other in a convenient way. Long distance calling plans are cheaper than ever, thanks to VOiP. As technology continues to make communicating with others easier, the number of couples engaged in a long distance relationship is bound to increase. A great example of this are college students who are in a long distance relationship. Based on studies done by Dr. While this can be attributed in part to high school relationships carrying over into the first-year of college, much of it has to do with couples accepting that there is a chance they can make it. The percent chance may be low, but thanks to an ever growing spectrum of technology, long-distance relationships are becoming a realistic option. In fact, statistics show that being away from your partner may not be a bad thing. For many of us, both genetically and instinctively, we want to be at the side of our partner when possible. Based on a study by The Center for the Study of Long Distance Relationships, proximal relationships versus long distance ones share very similar trends as far as breaking up during the first year. As technology continues to improve, long distance relationships will continue to benefit. Skype for example recently announced a partnership with LG and Panasonic which will allow consumers to use Skype via their television. Not only will users be able to communicate through their televisions, but in high-definition quality. Additionally, it has been rumored that 2-way video chatting through your phone may soon be making its way into the US market.

Chapter 2 : Distance Education & Technology Integration

Distance education (online learning) is designed to expand your educational experiences independent of time, location and physical barriers. The University of North Georgia understands the challenges facing students who wish to further their education while balancing family, work or other demands.

Program practices to ensure access to students with disabilities Distance learning has been around for a long time. For years instructors have taught students across great distances via correspondence courses using printed materials. The early days of television witnessed the introduction of televised courses. Today, an instructor can video conference with several classrooms full of students. Early online courses using email were rapidly followed by web-based instruction. Today, the lines are blurred between different types of distance learning courses as multiple modes of delivery are employed in a single course. For example, a class "library" could be a website; class discussions could take place using message boards; some course content could be delivered using online materials and videos. Access to more students is a common reason given for providing instruction in a distance learning format. However, these access arguments usually focus on people separated by distance and time and often do not include consideration of the needs of people with disabilities. In fact, the design of many distance learning courses erects barriers to the full participation of students and instructors with some types of disabilities. Ensuring that individuals with disabilities can participate in distance learning courses can be argued on ethical grounds. Many people simply consider it to be the right thing to do. Others are more responsive to legal mandates. The Americans with Disabilities Act ADA of and its amendments mandate that no otherwise qualified individuals shall, solely by reason of their disabilities, be excluded from participation in, be denied the benefits of, or be subjected to discrimination in public programs. The ADA applies to Internet-based programs and services. Clearly, distance learning programs must make their offerings available to people with disabilities who are eligible to take a class. The following paragraphs discuss access issues and present design considerations for ensuring that a course is accessible to potential instructors and students with a range of abilities and disabilities. The field of universal design provides a framework for this discussion. Access Barriers Thousands of specialized hardware and software products available today allow individuals with a wide range of abilities and disabilities to productively use computing and networking technologies. If a prerequisite to a course is Internet access, administrators and instructors can assume that any student enrolled will have access to the assistive technology they require. However, assistive technology alone does not remove all access barriers. Described below are examples of access challenges in distance learning courses faced by students and instructors who have access to assistive technology. Blindness A student or instructor who is blind may use a computer equipped with text-to-speech software. Basically, this system reads, with a synthesized voice, whatever text appears on the screen. He cannot interpret graphics including photographs, drawings, and image maps unless text descriptions are provided. Printed materials, videos, presentations, and other visual materials also create access challenges for him. These barriers can be overcome with alternate media such as accessible electronic text and text-based descriptions. Other Visual Impairments A student or instructor who has limited vision can use special software to enlarge screen images. He may see only a small portion of a web page at a time. Consequently, he can easily become confused when web pages are cluttered and when layouts change from page to page. Standard printed materials may also be inaccessible to him; he may require large print or electronic text that his system can enlarge for him. Individuals who are colorblind cannot successfully navigate web pages that require the user to distinguish some color combinations. Specific Learning Disabilities Some specific learning disabilities impact the ability to read, write, or process information. A student with a learning disability may use a speech output or screen enlargement system similar to those used by people with visual impairments. She may have difficulty understanding websites when the information is cluttered and when the screen layout changes from one page to the next. Mobility Impairments A student or instructor with a mobility impairment who cannot move his hands may use an alternative keyboard or speech input to gain access to online course materials and communication tools. Another student or instructor may be able to use standard input devices, but lack the fine

motor skills required to select small buttons on the screen. If his input method is slow, a person with a mobility impairment may not be able to effectively participate in synchronous real-time communications. If any place-bound meetings are required in a distance learning course, a participant with a mobility impairment may require that the location be wheelchair-accessible.

Hearing Impairments Most Internet resources are accessible to people with hearing impairments because these resources do not require the ability to hear. However, when websites include audio output without providing text captioning or transcription, a student who is deaf is denied access to the information. Course videos that are not captioned are inaccessible to this student. He may also be unable to participate in a telephone conference or video conference unless accommodations are provided.

Speech Impairments A student with a speech impairment may not be able to effectively participate in interactive telephone conferences or video conferences. However, modes of participation that do not require the ability to speak, such as email, are fully accessible.

Seizure Disorders Attention-grabbing flickers, at certain rates typically between 2 to 55 hertz, can induce seizures for people who are susceptible to them. They should be avoided.

Universal Design The design of a distance learning class can impact the participation of students and instructors with visual, hearing, mobility, speech, and learning disabilities. Planning for access as the course is being developed is much easier than creating accommodation strategies once a person with a disability enrolls in the course or applies to teach it.

Universal design UD is defined by the Center for Universal Design CUD at North Carolina State University as "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design". At the CUD, a group of product developers, architects, environmental designers, and engineers established a set of principles of universal design to apply in the design of products, environments, and communication and other electronic systems. General principles include the following: UD principles and strategies have been applied to libraries and other educational products and environments. When UD principles are applied, products meet the needs of potential users with a variety of characteristics. Disability is just one of many characteristics that an individual might possess. Others include height, age, race, native language, ethnicity, and gender. All potential characteristics of participants should be considered when developing a distance learning course. Just as modern sidewalks and buildings are designed to be used by everyone, distance learning designers should create learning environments that allow all potential students and instructors to fully participate. The next sections of this publication provide examples of strategies for making distance learning courses welcoming, accessible, and usable to everyone. Be sure to include a statement on all promotional materials about how to obtain materials in alternate format and other disability-related accommodations.

On-Site Instruction The interactive video sessions, proctored examinations, and retreats for students in some distance learning courses require place-bound meetings. In these cases, the facility should be wheelchair accessible. The furniture should be flexible enough to accommodate wheelchair-users and accessible restrooms and parking should be available nearby. Standard disability-related accommodations, such as sign language interpreters, should be provided when requested. Instructors should speak clearly; face students when speaking to facilitate lipreading; and read aloud and describe text and other visual materials for those who cannot see them.

Internet-Based Communication Some distance learning programs employ a real-time communication in their courses. In this case, students communicate synchronously at the same time, as compared to asynchronously not necessarily at the same time. Besides providing scheduling challenges, synchronous communication is difficult or impossible for someone who cannot communicate quickly. For example, someone with a learning disability who takes a long time to compose her thoughts or someone whose input method is slow may not be fully included in the discussion. In addition, some synchronous software erects barriers for individuals who are blind. Instructors who choose to use synchronous tools should plan for an alternate method of communication.

Text-based, asynchronous tools such as email, message boards, and email-based lists generally erect no special barriers for students with disabilities. If a prerequisite to a course is for students to have access to email, the instructor can assume that participants with disabilities already have an accessible email program to use. Email communication between individual students, course administration staff, the instructor, guest speakers, and other students is accessible to all parties, regardless of disability.

Web Pages Applying UD principles makes web pages accessible to individuals with a wide range of

disabilities. W3C, an industry group that was founded in to develop common protocols that enhance interoperability and guide the evolution of the web, is committed to ensuring that the World Wide Web is fully accessible to people with disabilities. There are basically two approaches for making web page content and navigation accessible. Certain types of inaccessible data and features need to be avoided or alternative methods need to be provided for carrying out the function or accessing the content provided through an inaccessible feature or format. For example, an online learning designer can avoid using a graphic that is inaccessible to individuals who are blind, or can create a text description of the content that is accessible to text-to-speech software. Web pages for a distance learning class should be tested with a variety of monitors, computer platforms, and a web browser, including one with the graphics and sound-loading features turned off to simulate the experiences of people with sensory impairments. Testing to see if all functions at a website can be accessed using a keyboard alone is also a good accessibility test. Course designers using learning management systems LMSs; such as Blackboard, eCollege, Canvas can employ product accessibility tools to create accessible courses. Documents Students who are blind or who have specific learning disabilities that affect their ability to read may require that printed documents and electronic versions e. Making the content of printed materials available in an accessible web-based format HTML may provide the best solution. Otherwise, consult resources to make specific files accessible. Prepare to make them in text-based formats with structured headings and the content of images described in alternative text. Videoconference Ideally, whenever a video presentation is used in a distance learning course, captioning should be provided for those who have hearing impairments and audio description that describes aurally the visual content should be provided for those who are blind. If a video publisher does not make these options available, the distance learning program should have a system in place to accommodate students who have sensory impairments. For example, the institution could hire someone local to the student to describe the visual material to a blind student or to sign audio material for a student who is deaf. Real-time captioning developed at the time of the presentation or sign language interpreting should be provided for video conferences when requested by participants who are deaf. Teleconference Sometimes, online courses include teleconferencing opportunities for discussion in small groups. This mode of communication creates scheduling challenges for everyone. It is also inaccessible to a student who is deaf. Instructors who use teleconferencing for small group discussions should allow alternative communication e. Or, a student who is deaf might be able to participate in a teleconference by using the Telecommunications Relay Service TRS , where an operator types what the speaker says for a student who is deaf to view on his text telephone TTY and translates his printed input into speech. However, this system might be too slow to allow participation in lively conversations. Another accommodation approach involves setting up a private chat room on the web. A transcriptionist types the conversation for the student who is deaf to view. The student can also type his contributions into the chat room and they can be voiced by someone in the group who is monitoring the chat room.

Chapter 3 : Tech support for long-distance caregivers

The investment in distance learning technology can turn into long term cost reductions by reducing travel, delivery and training expenses, while increasing effectiveness and providing the ability to track results.

Technology is changing how we deliver education. However, getting up to speed on the innovative opportunities that come with new software and hardware can be helped by an occasional jumpstart. At the end of this column is a link to a listing of over online workshops and course offerings that cover every aspect of music technology education [click here to download a pdf of the listing](#). GoToMeeting and WebEX are popular examples of videoconferencing software that work well over broadband internet connections without special hardware requirements. Skype also offers multipoint conferencing. Webcams are usually optional, although many laptops now include built in cameras. Distance-learning instruction comes in two styles of delivery: Asynchronous classes offer pre-recorded lectures and demonstrations, while synchronous is live, real-time interactive streaming over the Internet. Some asynchronous workshops offer live chat sessions so students can interact occasionally with the teacher; these are called "blended learning. Three model approaches for distance-learning featured here are: IUPUI offers both asynchronous and synchronous instruction. This helpful structure has been in place since when Lynda Weinman and Bruce Heavin began posting training videos online at [www](#). With over one million individual, corporate, academic, and government subscribers, lynda. Schools are partnering with lynda. They also offer courses to learn skills surrounding these digital tools, such as Digital Audio Principles, Foundations of Audio, and Audio Mixing Bootcamp. Courses vary in length. For example, Pro Tools 10 is a nine-hour course and iTunes Essential Training is a four-and-a-half-hour course. However, each course is divided into bite-sized sections so students can learn at their own pace. There is no homework or grades associated with the video tutorials. Students either need to own the software or have access to it. Since all of the courses are video courses, the faster the Internet connection, the better. With self-directed asynchronous learning, you go at your own pace and direct your own learning path. There is no need to send large data files. All of the lynda. There are no deadlines for completing any courses all of which are available for a monthly subscription fee. This approach allows the flexibility to be able to watch a course from beginning to end, watch numerous courses in one session, or watch specific videos that cover particular skills and topics. The purpose of berkleemusic. A maximum of 20 students per class allows for more personal interaction between students and teacher. For larger classes, Berklee offers multiple sections of a course to keep that ratio. Out of the courses, there are many areas of music technology with which to engage. The music production area, for example, has between 30 and 35 courses. There are professional certificate programs, such as their most popular course of study, music production and technology, which is a collection of 12 different courses. In music production, there are about 30 courses and 20 certificates that give students more than 50 options of study. There are abundant courses for entry, intermediate, and advanced levels: Professional students have taken courses while on tour, including musicians from groups like Sugarland and the Dave Matthews Band. Every course is 12 weeks long and available on Mac and PC. Within every course, there is a one-hour chat interaction on a weekly basis. The live chat uses WebEx to coordinate all students in the class. The teacher uses video, audio, and screen-sharing to answer questions and may add additional information to the course in the weekly chat session. For the rest of the instruction, the student does the work privately in an asynchronous mode. Generally, five hours of outside home is required for every hour of on-line instruction each week chat, assignments, and quizzes. Students generally own their own software, but Berklee has partnered with companies directly to provide educational discounts for such programs as ProTools, Aberton Live, Logic, Sonar, and Cubase. They also use freeware, like a. Every course has hardware and software requirements, but Internet speed requirements are not that specific. Webcams are not required, but some teachers may request them. Some undergraduate courseware is transmitted over public television, while others are delivered asynchronously over the Internet. Most graduate degree courses are transmitted synchronously with a few courses utilizing podcasts or recorded video. IUPUI offers 10 online courses, plus elective courses for the masters degree in Music Technology and 10 courses for the masters degree in Music Therapy program.

All elective courses and three of the music technology core courses are available to students who are not enrolled in a degree. The average course has 42 hours of instruction for students. There is a designated time limit which conforms to university deadlines for completion of campus courses, usually a day or two after the final exam period. The faster the Internet connection the better, but students can use DSL at k or cable internet connections at 1. Students may also videoconference through Connect Pro during class and can Skype or iChat with an instructor or chat online outside of class meetings. Students do not need a webcam for any class. This year it will be held June , It is videostreamed live with on-campus students present. Closing Comments There are so many ways to access the latest learning in music technology. Examine the directory for a myriad of topics via both on-site and distant-learning. Hopefully, you will find what meets your needs and incorporate technology skills in your teaching. Also, check out the web supplement at: You might also consider earning a professional music technology certificate offered by TI: ME Technology Institute for Music Educators , which has workshops taught by their certified instructors from coast to coast. ME and its advantages for music educators. Many of their workshops are listed in this directory. I invite you to peruse this directory of music technology classes for opportunities in professional growth and career development. On-campus instruction is represented coast-to-coast. Distance learning is everywhere. This is a rich resource for both summer study and year-round learning. He is a TI: ME-certified training instructor and has a Ph. As a freelance author, Dr. Kuzmich has more than articles and five text books published. As a clinician, Dr. Kuzmich frequently participates in workshops throughout the U. For more information, visit www. Do you know a fantastic K instrumental music educator who is deserving of recognition in SBO? Click here to nominate a director On the Road Do you have a story to tell about taking your school music groups on the road? SBO wants to hear about it!

Chapter 4 : Technology And Long Distance Relationships – Creative Journal: Marketing and Creativity

Distance education or long-distance learning is the education of students who may not always be physically present at a school. [1] [2] Traditionally, this usually involved correspondence courses wherein the student corresponded with the school via post.

If you live an hour or more away from a person who needs your care, you can think of yourself as a long-distance caregiver. There are about 7 million of you in the U. Long-distance caregivers increasingly rely on technology to help with medication management, to get information on a treatment or diagnosis, to find support, and to search for services. But the industry is young. Wearable devices and sensors in the home can detect whether the fridge has been opened, doors are left open, or stoves have been running for a long time. But your parent, or the person who acts as their legal proxy, has to be comfortable with the fact that their data may be tracked and shared. So check with caregiver organizations or ask facilities where your loved one resides about products they have used and recommend. Then research device prices and monthly costs, and make sure you can cancel their service at any time. Also check on their shipping, setup, return, and other fees. Almost all of the examples that follow were compiled by the Center for Technology and Aging , a research group based in California. We have not tested them, so we are not recommending them, but we cite them as examples of types of products that may be helpful. However, there are two exceptions: Products can also measure heart rate , temperature, heart function, and movement. Many products provide Web and mobile tools for tracking and analyzing data. Some can record heart rhythms to monitor any heartbeat irregularities. In some cases, if users do not take their medications, caregivers can be notified via phone, e-mail, and text message. Models can take several consecutive readings and calculate the average. Some also have an irregular-heartbeat detector. Wearable monitors These monitors measure steps taken, speed, activity levels, calories spent, and amount of time with no movement. They can sometimes be worn as a wristband, clipped onto clothing, or carried in a pocket. Of course, your relative must be comfortable wearing or carrying around one of the devices and remember to use it. Sleep monitors Individuals and clinicians use these products to monitor sleep to adjust behavior or to provide indications of other concerns that might require a professional intervention, such as sleep apnea. For people who find an activity tracker uncomfortable to wear while sleeping, or who might not remember to put one on, these products use a sensor tucked under their mattress and a smart-phone app to record sleep information such as heart and respiration rates, motion, and bed presence. Personal safety devices Emergency-response systems. These include GPS tracking devices and personal emergency-response systems, which have evolved so that they can be activated while outside of the home. Two-way voice communication facilitated through a pendant or watch. Some claim a call for assistance is automatically placed if a fall is suspected but the user is unable to push a button. May come with the ability to call multiple contacts. You can locate them by computer, laptop, tablet, iPhone, or Android device. How to decide if long-term care insurance is right for you. Plus, 6 estate-planning minefields , and how to avoid them. Social communication These technologies include video-enabled PC or mobile-app solutions to communicate with remote family caregivers, other relatives, or friends. FaceTime, Google Hangouts, and Skype. Monitoring sensors Sensor products can check a number of items within a house: They can also lock doors and control other items in the home remotely. Activity sensors can be placed on the refrigerator, stove, door, and other objects around the home. Your relative may also wear a watch that monitors activity. You can allow caregivers and physicians to access the data. Set up notifications to be delivered by e-mail, text, or mobile app. Control the climate, manage the security system, lock and unlock doors, and even control the lights remotely. Cameras can be viewed remotely from a smart phone or computer. You may be able to get video motion alerts and the ability to pan and zoom. Or you might want to use a program that tracks suspicious activity. As soon as suspicious activity is suspected, an alert may be dispatched to your parent and one or more caregivers. Look for programs where no account numbers are available and no money can be moved to help avoid elder financial abuse.

Chapter 5 : Technology Tools Supported by Distance Education

Not long after the Big BangBig BangThe well-supported theory that some billion years ago, the entire universe was staggeringly small, hot, and dense. In a fraction of an instant, the universe.

Telepharmacy Telepharmacy is the delivery of pharmaceutical care via telecommunications to patients in locations where they may not have direct contact with a pharmacist. It is an instance of the wider phenomenon of telemedicine, as implemented in the field of pharmacy. Telepharmacy services include drug therapy monitoring, patient counseling, prior authorization and refill authorization for prescription drugs , and monitoring of formulary compliance with the aid of teleconferencing or videoconferencing. Remote dispensing of medications by automated packaging and labeling systems can also be thought of as an instance of telepharmacy. Telepharmacy services can be delivered at retail pharmacy sites or through hospitals, nursing homes, or other medical care facilities. The term can also refer to the use of videoconferencing in pharmacy for other purposes, such as providing education, training, and management services to pharmacists and pharmacy staff remotely. Neuropsychological tests are used to evaluate the cognitive status of individuals with known or suspected brain disorders and provide a profile of cognitive strengths and weaknesses. Through a series of studies, there is growing support in the literature showing that remote videoconference-based administration of many standard neuropsychological tests results in test findings that are similar to traditional in-person evaluations, thereby establishing the basis for the reliability and validity of teleneuropsychological assessment. Telerehabilitation Telerehabilitation or e-rehabilitation [36] [37] is the delivery of rehabilitation services over telecommunication networks and the Internet. Most types of services fall into two categories: Some fields of rehabilitation practice that have explored telerehabilitation are: Telerehabilitation can deliver therapy to people who cannot travel to a clinic because the patient has a disability or because of travel time. Telerehabilitation also allows experts in rehabilitation to engage in a clinical consultation at a distance. Most telerehabilitation is highly visual. As of , the most commonly used mediums are webcams , videoconferencing , phone lines , videophones and webpages containing rich Internet applications. The visual nature of telerehabilitation technology limits the types of rehabilitation services that can be provided. It is most widely used for neuropsychological rehabilitation ; fitting of rehabilitation equipment such as wheelchairs , braces or artificial limbs ; and in speech-language pathology. Rich internet applications for neuropsychological rehabilitation aka cognitive rehabilitation of cognitive impairment from many etiologies were first introduced in This endeavor has expanded as a teletherapy application for cognitive skills enhancement programs for school children. Tele-audiology hearing assessments is a growing application. Currently, telerehabilitation in the practice of occupational therapy and physical therapy is limited, perhaps because these two disciplines are more "hands on". Two important areas of telerehabilitation research are 1 demonstrating equivalence of assessment and therapy to in-person assessment and therapy, and 2 building new data collection systems to digitize information that a therapist can use in practice. Ground-breaking research in telehaptics the sense of touch and virtual reality may broaden the scope of telerehabilitation practice, in the future. Only a few health insurers in the United States, and about half of Medicaid programs, [40] reimburse for telerehabilitation services. If the research shows that teleassessments and teletherapy are equivalent to clinical encounters, it is more likely that insurers and Medicare will cover telerehabilitation services. Teletrauma care[edit] Telemedicine can be utilized to improve the efficiency and effectiveness of the delivery of care in a trauma environment. Telemedicine for trauma triage: They can provide clinical assessments and determine whether those injured must be evacuated for necessary care. Remote trauma specialists can provide the same quality of clinical assessment and plan of care as a trauma specialist located physically with the patient. Telemedicine is also being used in some trauma ICUs to reduce the spread of infections. Rounds are usually conducted at hospitals across the country by a team of approximately ten or more people to include attending physicians, fellows, residents and other clinicians. This group usually moves from bed to bed in a unit discussing each patient. This aids in the transition of care for patients from the night shift to the morning shift, but also serves as an educational experience for new residents to the team. A new approach features the team conducting

rounds from a conference room using a video-conferencing system. Video-conferencing allows the remote viewers two-way communication with clinicians at the bedside. Each lecture provides fundamental principles, firsthand knowledge and evidenced-based methods for critical analysis of established clinical practice standards, and comparisons to newer advanced alternatives. The various sites collaborate and share their perspective based on location, available staff, and available resources. This capability allows the attending to view the residents in real time. The remote surgeon has the capability to control the camera pan, tilt and zoom to get the best angle of the procedure while at the same time providing expertise in order to provide the best possible care to the patient. Telecardiology[edit] ECGs, or electrocardiographs , can be transmitted using telephone and wireless. This was because the hospital did not allow him to move patients outside the hospital to his laboratory for testing of his new device. In Einthoven came up with a way to transmit the data from the hospital directly to his lab. Mantri using an indigenous technique for the first time in India. Transmission using wireless was done using frequency modulation which eliminated noise. Transmission was also done through telephone lines. At the other end a demodulator reconverted the sound into ECG with a good gain accuracy. This system was also used to monitor patients with pacemakers in remote areas. The central control unit at the ICU was able to correctly interpret arrhythmia. This technique helped medical aid reach in remote areas. There are many examples of successful telecardiology services worldwide. Three hub stations through were linked via the Pak Sat-I communications satellite, and four districts were linked with another hub. Three hubs were established: These 12 remote sites were connected and on average of 1, patients being treated per month per hub. The project was still running smoothly after two years. Telepsychiatry Telepsychiatry, another aspect of telemedicine, also utilizes videoconferencing for patients residing in underserved areas to access psychiatric services. It offers wide range of services to the patients and providers, such as consultation between the psychiatrists, educational clinical programs, diagnosis and assessment, medication therapy management, and routine follow-up meetings. As of , the following are some of the model programs and projects which are deploying telepsychiatry in rural areas in the United States: In , the South Carolina Department of Mental Health established a partnership with the University of South Carolina School of Medicine and the South Carolina Hospital Association to form a statewide telepsychiatry program that provides access to psychiatrists 16 hours a day, 7 days a week, to treat patients with mental health issues who present at rural emergency departments in the network. There is an independent comparison site of current technologies. Links for several sites related to telemedicine, telepsychiatry policy, guidelines, and networking are available at the website for the American Psychiatric Association. This is a Commercial, For-Profit business. In the United States, the American Telemedicine Association and the Center of Telehealth and eHealth are the most respectable places to go for information about telemedicine. For this reason, most companies provide their own specialized videotelephony services. In June the U. Veterans Administration announced expansion of the successful telemental health pilot. Their target was for , cases in There is an independent comparison site that provides a criteria-based comparison of telemental health technologies. The most typical implementation are two computers connected via the Internet. The computer at the receiving end will need to have a high-quality display screen that has been tested and cleared for clinical purposes. Sometimes the receiving computer will have a printer so that images can be printed for convenience. The teleradiology process begins at the image sending station. The radiographic image and a modem or other connection are required for this first step. The image is scanned and then sent via the network connection to the receiving computer. Therefore, they do not need particular workstations to view the images; a standard personal computer PC and digital subscriber line DSL connection is enough to reach keosys central server. No particular software is necessary on the PC and the images can be reached from wherever in the world. Telepathology Telepathology is the practice of pathology at a distance. It uses telecommunications technology to facilitate the transfer of image-rich pathology data between distant locations for the purposes of diagnosis , education , and research. The use of " television microscopy ", the forerunner of telepathology, did not require that a pathologist have physical or virtual "hands-on" involvement is the selection of microscopic fields-of-view for analysis and diagnosis. A pathologist, Ronald S. In an editorial in a medical journal, Weinstein outlined the actions that would be needed to create remote pathology diagnostic services. A number

of clinical telepathology services have benefited many thousands of patients in North America, Europe, and Asia. Telepathology has been successfully used for many applications including the rendering histopathology tissue diagnoses, at a distance, for education, and for research. Although digital pathology imaging, including virtual microscopy, is the mode of choice for telepathology services in developed countries, analog telepathology imaging is still used for patient services in some developing countries. Teledermatology Teledermatology allows dermatology consultations over a distance using audio, visual and data communication, and has been found to improve efficiency. In a scientific publication, they described the value of a teledermatologic service in a rural area underserved by dermatologists. Teledentistry Teledentistry is the use of information technology and telecommunications for dental care, consultation, education, and public awareness in the same manner as telehealth and telemedicine. Tele-audiology Tele-audiology is the utilization of telehealth to provide audiological services and may include the full scope of audiological practice. Teleophthalmology Teleophthalmology is a branch of telemedicine that delivers eye care through digital medical equipment and telecommunications technology. Today, applications of teleophthalmology encompass access to eye specialists for patients in remote areas, ophthalmic disease screening, diagnosis and monitoring; as well as distant learning. Teleophthalmology may help reduce disparities by providing remote, low-cost screening tests such as diabetic retinopathy screening to low-income and uninsured patients. These patients were examined by ophthalmic assistants locally but surgery was done on appointment after viewing the patient images online by Eye Surgeons in the hospital 6â€”12 hours away. Instead of an average 5 trips for say, a cataract procedure, only one was required for surgery alone as even post op care like stitch removal and glasses was done locally. There were huge cost savings in travel etc. Typically, states with restrictive licensure laws also have several exceptions varying from state to state that may release an out-of-state practitioner from the additional burden of obtaining such a license. A number of states require practitioners who seek compensation to frequently deliver interstate care to acquire a full license. If a practitioner serves several states, obtaining this license in each state could be an expensive and time-consuming proposition. In , the U. In this PrEP initiative, PlushCare does not require an initial check-up and provides consistent online doctor visits, regular local laboratory testing and prescriptions filled at partner pharmacies. Remote surgery Remote surgery also known as telesurgery is the ability for a doctor to perform surgery on a patient even though they are not physically in the same location.

Chapter 6 : Technology puts 'touch' into long-distance relationships

Distance Technology, built on both REACH and the ECHO Project Model, for health care providers, was applied to supporting home visiting programs. Today, EC Distance Technology has expanded to include a variety of media and.

History[edit] One of the earliest attempts was advertised in This was in the Boston Gazette for "Caleb Philipps, Teacher of the new method of Short Hand ", who sought students who wanted to learn through weekly mailed lessons. The background to this innovation lay in the fact that the institution later known as University College London was non-denominational and, given the intense religious rivalries at the time, there was an outcry against the "godless" university. The issue soon boiled down to which institutions had degree-granting powers and which institutions did not. As Sheldon Rothblatt states: In the United States, William Rainey Harper , first president of the University of Chicago , celebrated the concept of extended education, whereby the research university had satellite colleges in the wider community. Founded in to provide training for immigrant coal miners aiming to become state mine inspectors or foremen, it enrolled new students in and matriculated 72, new students in By total enrollments reached , The growth was due to sending out complete textbooks instead of single lessons, and the use of aggressive in-person salesmen. The regular technical school or college aims to educate a man broadly; our aim, on the contrary, is to educate him only along some particular line. The college demands that a student shall have certain educational qualifications to enter it and that all students study for approximately the same length of time; when they have finished their courses they are supposed to be qualified to enter any one of a number of branches in some particular profession. We, on the contrary, are aiming to make our courses fit the particular needs of the student who takes them. For men who were older or were too busy with family responsibilities, night schools were opened, such as the YMCA school in Boston that became Northeastern University. Outside the big cities, private correspondence schools offered a flexible, narrowly focused solution. The National Association of Corporation Schools grew from 37 in to in Starting in the s, private schools opened across the country which offered specialized technical training to anyone who enrolled, not just the employees of one company. Starting in Milwaukee in , public schools began opening free vocational programs. Australia, with its vast distances, was especially active; the University of Queensland established its Department of Correspondence Studies in The International Conference for Correspondence Education held its first meeting in Planning commenced in under the Minister of State for Education , Jennie Lee , who established a model for the Open University OU as one of widening access to the highest standards of scholarship in higher education, and set up a planning committee consisting of university vice-chancellors, educationalists and television broadcasters, chaired by Sir Peter Venables. The British Broadcasting Corporation BBC Assistant Director of Engineering at the time, James Redmond , had obtained most of his qualifications at night school , and his natural enthusiasm for the project did much to overcome the technical difficulties of using television to broadcast teaching programmes. It has been at the forefront of developing new technologies to improve the distance learning service [26] as well as undertaking research in other disciplines. The election of the new Conservative government under the leadership of Edward Heath , in ; led to budget cuts under Chancellor of the Exchequer Iain Macleod who had earlier called the idea of an Open University "blithering nonsense". At the time, the total student population of conventional universities in the United Kingdom was around , Some open universities have grown to become mega-universities, [31] a term coined to denote institutions with more than , students. Although the expansion of the Internet blurs the boundaries, distance education technologies are divided into two modes of delivery: In synchronous learning, all participants are "present" at the same time. In this regard, it resembles traditional classroom teaching methods despite the participants being located remotely. It requires a timetable to be organized. Web conferencing , videoconferencing , educational television , instructional television are examples of synchronous technology, as are direct-broadcast satellite DBS , internet radio , live streaming , telephone , and web-based VoIP. These tools also support asynchronous participation by students being able to listen to recordings of synchronous sessions. Immersive environments notably SecondLife have also been used to enhance participant presence in distance education courses. Another form of synchronous learning that

has been entering the classroom over the last couple of years is the use of robot proxies [33] including those that allow sick students to attend classes. With these telepresence robots, the remote students have a seat at the table or desk instead of being on a screen on the wall. Students are not required to be together at the same time. Mail correspondence, which is the oldest form of distance education, is an asynchronous delivery technology, as are message board forums, e-mail, video and audio recordings, print materials, voicemail, and fax. Many courses offered by both open universities and an increasing number of campus based institutions use periodic sessions of residential or day teaching to supplement the sessions delivered at a distance. Many open universities use a blend of technologies and a blend of learning modalities face-to-face, distance, and hybrid all under the rubric of "distance learning". Distance learning can also use interactive radio instruction IRI, interactive audio instruction IAI, online virtual worlds, digital games, webinars, and webcasts, all of which are referred to as e-Learning. Experts in given fields broadcast lessons for pupils within the many schoolrooms of the public school system, asking questions, suggesting readings, making assignments, and conducting tests. This mechanizes education and leaves the local teacher only the tasks of preparing for the broadcast and keeping order in the classroom. The University was owned by the city, and local residents would pay the low tuition rates, receive their study materials in the mail, and listen by radio to live classroom discussions that were held on campus. Posin also was a pioneer in the field of distance education when he hosted a televised course through DePaul University. The radio courses faded away in the s. The study included the University of California, California State University and the community colleges. This study led to coordinated instructional systems legislation allowing the use of public funds for non-classroom instruction and paved the way for the emergence of telecourses as the precursor to the online courses and programs of today. Virtual education The widespread use of computers and the internet have made distance learning easier and faster, and today virtual schools and virtual universities deliver full curricula online. However, many of the techniques developed and lessons learned with earlier media are used in Internet delivery. In Jones International University was launched as the first fully online university accredited by a regional accrediting association in the US. Levels of accreditation vary: The majority of public and private colleges now offer full academic programs online. Even engineering courses that require the manipulation and control of machines and robots [60] that are technically more challenging to learn remotely are subject to distance learning through the internet. Distance education has a long history, but its popularity and use has grown exponentially as more advanced technology has become available. By , online learning programs were available in the United States in 44 states at the K level. Research shows that socialization plays an important role in some forms of distance education. There are many available that cover a broad range of topics. Paced and self paced models[edit] Distance education can be delivered in a paced format similar to traditional campus based models in which learners commence and complete a course at the same time. Paced delivery is currently the most common mode of distance education delivery. Paced courses may be offered in either synchronus mode, but self-paced courses are almost always offered asynchronously. Each delivery model offers both advantages and disadvantages for students, teachers and institutions. Kaplan and Haenlein classify distance education into four groups along the dimensions Time dependency and Number of participants: Open-access online course i. Online course that only offers a limited number of places and therefore requires some form of formal enrollment; 3 SMOCs Synchronous Massive Online Courses: Open-access online course that allows for unlimited participation but requires students to be "present" at the same time synchronously ; 4 SSOCs Synchronous Private Online Courses: Online course that only offers a limited number of places and requires students to be "present" at the same time synchronously. Institutes that offer both distance and campus programs usually use paced models as teacher workload, student semester planning, tuition deadlines, exam schedules and other administrative details can be synchronized with campus delivery. Student familiarity and the pressure of deadlines encourages students to readily adapt to and usually succeed in paced models. However, student freedom is sacrificed as a common pace is often too fast for some students and too slow for others. In addition life events, professional or family responsibilities can interfere with a students capability to complete tasks to an external schedule. Finally, paced models allows students to readily form communities of inquiry [63] and to engage in collaborative work. Self-paced courses maximize student freedom, as not only

can students commence studies on any date, but they can complete a course in as little time as a few weeks or up to a year or longer. Students often enroll in self-paced study when they are under pressure to complete programs, have not been able to complete a scheduled course, need additional courses or have pressure which precludes regular study for any length of time. The self-paced nature of the programming, though is an unfamiliar model for many students and can lead to excessive procrastination resulting in course incompleteness. Assessment of learning can also be challenging as exams can be written on any day, making it possible for students to share examination questions with resulting loss of academic integrity. Finally, it is extremely challenging to organize collaborative work activities, though some schools [64] are developing cooperative models based upon networked and connectivist pedagogies, [65] for use in self-paced programs. Benefits[edit] Distance learning can expand access to education and training for both general populace and businesses since its flexible scheduling structure lessens the effects of the many time-constraints imposed by personal responsibilities and commitments. With the many tools and programs that technological advancements have to offer, communication appears to increase in distance education amongst students and their professors, as well as students and their classmates. The distance educational increase in communication, particularly communication amongst students and their classmates, is an improvement that has been made to provide distance education students with as many of the opportunities as possible as they would receive in in-person education. The improvement being made in distance education is growing in tandem with the constant technological advancements. Present-day online communication allows students to associate with accredited schools and programs throughout the world that are out of reach for in-person learning. By having the opportunity to be involved in global institutions via distance education, a diverse array of thought is presented to students through communication with their classmates. This is beneficial because students have the opportunity to "combine new opinions with their own, and develop a solid foundation for learning". Distance education may be able to help to save students a considerable amount financially by removing the cost of transportation. Many textbooks are now available as electronic textbooks, known as e-textbooks, which can offer digital textbooks for a reduced price in comparison to traditional textbooks. Also, the increasing improvements in technology have resulted in many school libraries having a partnership with digital publishers that offer course materials for free, which can help students significantly with educational costs. It is able to promote good learning experiences and therefore, allow students to obtain higher satisfaction with their online learning. Students can then manipulate the coursework to fit their learning by focusing more on their weaker topics while breezing through concepts that they already have or can easily grasp. For those in a healthcare or mental health distance learning program, online-based interactions have the potential to foster deeper reflections and discussions of client issues [56] as well as a quicker response to client issues, since supervision happens on a regular basis and is not limited to a weekly supervision meeting. This helps the students have experiences of the classroom and social interaction that they are unable to receive at home or the hospital, while still keeping them in a safe learning environment. Over the last few years[when? An article from the New York Times, "A Swiveling Proxy Will Even Wear a Tutu", explains the positive impact of virtual learning in the classroom, [73] and another [74] that explains how even a simple, stationary telepresence robot can help. Instead of these students having no other academic opportunities, they may continue their education from their homes and earn their diplomas, offering them another chance to be an integral part of society. Distance Learning offers individuals a unique opportunity to benefit from the expertise and resources of the best Universities currently available. Students have the ability to collaborate, share, question, infer and suggest new methods and techniques for continuous improvement of the content. The ability to complete a course at a t pace that is appropriate for each individual is the most effective manner to learn given the personal demands on time and schedule. Self-paced distance learning on a mobile device such as a smartphone provides maximum flexibility and capability. Students must be provided with training opportunities if needed on each tool that is used throughout the program. The lack of advanced technology skills can lead to an unsuccessful experience. Schools have a responsibility to adopt a proactive policy for managing technology barriers.

Chapter 7 : Distance Learning - Information Technology | UWSP

As technology continues to make communicating with others easier, the number of couples engaged in a long distance relationship is bound to increase. A great example of this are college students who are in a long distance relationship.

By Sunday, we had scrambled to put together and successfully rock our Halloweekend outfits and picked out our classes for next semester. Some of us received our LSAT scores and study abroad acceptance emails. To top it all off, daylight saving time gave us another hour of sleep before we had to get up and continue to contemplate our futures. For many, the future holds the decision of whether or not to turn their current relationships into long-distance ones. Yes, I am talking about the dreaded LDR. For those studying abroad, it may seem daunting to have a transatlantic relationship. As a card-carrying LDR member, I can say that this is a discussion that no one really wants to have. It can end in one or two ways: We will make adjustments or we will end things right now. But luckily, long-distance relationships and millennials were seemingly made for each other. It takes certain qualities to maintain a relationship from afar. You have to be selfless, giving and willing to put someone else before yourself sometimes. Basically, becoming everything that people say our generation is not, according to a Pew Research Center study. However, emerging technology, which was not afforded to previous generations, does make LDRs very possible. We just have to hone it properly to make it work in our favor. When my parents were in college, they crossed the Illinois-Indiana border every month or so to visit each other. Granted, those were under different circumstances and the Hanks-Ryan pairing was constructed by Hollywood, but my point is that long-distance relationships can work. If people could manage their love sending emails back and forth, then we millennials, who have so much more at our fingertips, can tough it out. Our reliance on and readiness to use technology in all aspects of our life makes us more able to take on LDRs. Instagram and Facebook give us the highlights of their weeks. Gone are the days when we had to calculate how many incoming and outgoing texts we were sending a month – my limit in middle school was Now, we can always connect with people no matter how far away. This is even applicable while abroad. Many cell carriers have now gotten on board and offer affordable text messaging with their international plans. A long-distance relationship for a millennial is possible. So as you enter into your next phase of the school year, whether that is studying abroad or taking a job on a coast away from your boyfriend or girlfriend, make sure to weigh the options. Breaking up is hard to do, but missing an opportunity to learn how to love someone from a distance might prove even more difficult. Millennials, as selfish as we can be, can find a space to add one more thing to our list of aspirations. A successful long-distance relationship can be that attainable goal.

Chapter 8 : Telemedicine - Wikipedia

Technology is changing how we deliver education. However, getting up to speed on the innovative opportunities that come with new software and hardware can be helped by an occasional jumpstart. At the end of this column is a link to a listing of over online workshops and course offerings that.

New learning technologies are buzzing around like busy little bees, pollenating the online learning landscape with nuances and, as some might consider them, nuisances. Despite some of the initial frustrations some instructors encounter with learning them, these new technologies are making education at a distance more engaging, exciting, and malleable—*not* to mention, fun. Working as an instructional technologist, as well as teaching both online and face-to-face courses has given me a unique perspective on the technologies available for online learning; and in my opinion, they are worth taking the time to learn and use. Students can contact instructors and classmates through email, text messaging, and discussion threads. Or, they are increasingly gaining options to communicate in real-time through chat or instant messaging, web conferencing, and audio and video response options, most of which are available within the course, or can be integrated within the course. So, essentially, face-to-face, ear-to-ear, and eye-to-eye communication is readily available to the online learners of today. Actually, there might be more ways to communicate with instructors and classmates online than there are in face-to-face classes. This could be classified as a nuisance to some, but for those who crave connection with instructors and peers in online classes, the communication options are very fulfilling. Even social media can be used in an academic fashion to supplement communication and engage learners. I have created Facebook pages specific to courses I teach. A Facebook page can be created separate from a personal profile, and it can be accessed by those who do not have a Facebook account by simply providing them the link to the page. So, if I can meet students in their own worlds I can connect with them at greater levels. Embrace social media, and use it to empower students to communicate and learn. One useful web application that is being introduced in online courses is Polleverywhere. An online polling system, it allows for questions to be posed to an audience, and audience members can respond immediately in real time, or as long as the poll is left open. It is similar to clicker technology used in classroom environments. Polleverywhere allows for anonymous polling, as well as registered polling, so instructors can choose to track participation or not. Response types include multiple choice and open-ended responses, and a simple web link provides students all they need to respond to the poll. Instructors can use online polls to survey student knowledge or opinions that can, in turn, inform teaching strategies. Students can benefit from polls by seeing the opinions of classmates anonymously which increase transparency and honesty in their responses. Polls are great for starting or stimulating an interactive and thought-provoking online discussion. Web-conferencing for student collaboration is another technology that is being used more frequently in distance education. Google Hangouts is especially interesting because it is a free web-conferencing and collaborating tool where up to 10 people can interact at once, while working simultaneously on a document, form or spreadsheet in Google Drive. Also, they can do this while sharing their computer screens and browsing webpages or YouTube videos, all while recording the entire session via Hangouts on Air. Imagine the possibilities for students in small groups working on projects, for student study groups, or for instructor office hours. Glass is classified as a wearable technology that allows users to share their experiences, from the first-hand perspective, with others. Glass wearers can record videos, take pictures, navigate, and search the web while wearing the streamlined, modern Glass on their brow line just like a pair of glasses. As a user of Google Glass, I have seen the magnitude of impact this wearable technology has for educators and for individuals with disabilities. It seems ideal for demonstrating physical actions from the user viewpoint for learners. For example, I can envision a golf instructor wearing Glass to demonstrate key golf swing mechanics for students, or a surgeon demonstrating a steady hand during a critical procedure. As a public speaking instructor, demonstrating the impact of relating to and actually making eye contact with your audience, while employing gestures and effective body positioning, during a public speech would likely make a strong lasting impression on students, and it would reinforce key content. Visiting the far corners of the Earth, or outer space for that matter, from

the first-person Glass perspective can be none other than awe-inspiring. A person with disabilities can potentially use Glass, nearly hands-free, with voice commands, to navigate around a city and take pictures. All of these types of experiences are made possible with the wearable technology of today and the future. As one of my colleagues, Cody Connor, has always said: There is only the touch of a button separating the learner from the instructor, not to mention a world of knowledge that awaits online. Want more useful online education and teaching tips delivered directly to your inbox? Sign up for our email list in the box at the top right! Get Email Updates Receive useful resources to guide your education and career choices.

Chapter 9 : Distance education - Wikipedia

Hunt for distant worlds driven by technology advances. Over the last three decades, space scientists have scanned the skies for faint clues to the location of distant worlds called "exoplanets."

Technologies that were previously considered advanced are becoming commonplace and new technologies are still being developed. The nature of this trend is evident in the multitude of definitions of long distance learning. Office of Technology Assessment defines distance learning as the "linking of a teacher and students in several geographic locations via technology that allows for interaction" in Cartwright , According to the United States Distance Learning Association , "distance learning is the application of electronic means to education in all areas: K, higher education, continuing education, corporate training, and military and government training, telemedicine and those devoted to the pursuit of lifelong learning" USDLA, The Distance Learning Homepage of Western Carolina University defines distance learning as "the delivery of instruction to the right group of people at the right time in the right place. The educator and the learner may be separated by time, distance, or both. It may or may not include technology" WCU, 1 Clearly these definitions have some common ground and some differences. Distance Learning - A Paradigm Shift Most definitions of distance learning include the use of technology. Some, however, refer to the degree of interactivity and the distance between learners. Other definitions do not require the use of technology. In fact, distance learning, in the older paradigm, can be as simple as postal correspondence and telephone communications. Due to the technological advances of the recent past, a great deal of excitement and hope has been generated for the use of distance learning in education. Rapid advances in computer and telecommunications capabilities have made possible the development of learning modules that include elements such as video transmission, e-mail, the Internet, and the World Wide Web. These modules can function either as components of the learning process or as the basis for instruction. The progression of long distance learning from pen-pals, college correspondence courses, teleconferencing over speaker phones, teleconferencing via modem, transporting still pictures along with interactive audio, to the latest technology of two-way, full audio, full video communication has implications for public education. Technological advances have created a paradigm shift in education and the definition of distance learning, as described by James Morrison , who states that telecommunications, software, and the Internet eliminate walls and boundaries. In addition, he states that an increasing number of students want and need non-traditional, flexible schedules. Distance education is becoming a common practice as evidenced by the number of universities that offer distance education programs, the number of businesses offering distance learning and training programs, and the number of distance learning projects K that are being created or are currently in use. Issues and Forces Surrounding Distance Learning Ostensibly, distance learning has the capacity to reach many more people in a more cost-effective manner than traditional classroom instruction. However, there is a question whether the emerging technologies of distance learning will resolve equity and access issues or create new equity and access issues. For instance, Ameritech states that educational institutions are faced with the growing pressure to enhance curriculum quality while maintaining equity in education. Educators must find ways to accomplish this within the framework of extreme budget constraints. As resources shrink and learning requirements expand, many educational institutions are relying on communication technologies, such as distance learning, to enhance the effectiveness and efficiency of education Ameritech, , may be a contradiction to their acknowledgment of the educational challenge as the technological infrastructure, human resources, and training which are essential to effective distance learning do not come without expense. There exist inequities in access to these resources across the nation. Educators with limited funds find themselves scrambling to tap into the potential of long distance learning. This is why Lemke advocates for the use of less exotic cable and broadcast television, audio-conferencing, fax, a compressed video network, telephone, and voice mail , and therefore, less expensive technologies in our attempt to equalize access to educational resources. Special interests of rural education. The issue of access to information is of special interest to education systems in rural areas of the country. Distance education technologies can help rural schools overcome the disadvantages

of geographic isolation by expanding course offerings and learning opportunities, and by connecting teachers and students with access to a broader range of resource materials Barker and Hall, Barker states that high school administrators in sparsely populated rural areas are showing a great interest in interactive satellite instruction as a way to resolve teacher shortages and meet rigorous state graduation requirements p. He goes further by saying that distance learning can achieve the following: In a recent survey of distance education use in rural school districts, over half of the respondents strongly supported distance learning Barker, So, how will more rural districts be able to cull the benefits from distance learning, given the high cost of emerging technologies? When Does it Make Business Sense? The USDLA asserts that paying for distance education systems can be done through such mechanisms as issuing bonds to cover construction costs; legislation to install satellite dishes on every school in the state; state, national and Federal grant programs for local projects; and various other taxes and levies This assertion reframes the issue of equity and access within the context of tax base inequities and school funding. Affluent districts are more likely to be successful than poorer, rural districts who do not have an adequate tax base to support or enact the use of these mechanisms. Clearly, rural school districts will have to make tough decisions regarding the allocation of scarce resources if they are to reap the benefits of distance learning. The influence of the business sector. The apparent success of distance learning technology in the business sector is outlined by Dave Lewis attests that distance learning can enable companies that have remote or international sites to provide information in a more rapid and more consistent framework The challenge for education is to emulate the success of distance learning in the business sector. Schools must determine the importance of distance learning and ascertain the needs and resources available in order to gain the advantages of distance learning. The business sector has a financial interest in the success of distance learning in the public schools. Businesses will undoubtedly gain from the sale of the costly infrastructure for distance learning, as well as from the sale of the software and educational materials necessary for the development of distance learning. In addition, the business sector actively enlists educators to purchase training services. Many corporations and companies market these services on the World Wide Web. These web sites provide an opportunity to market products, programs, courses, training, and to offer help for organizations interested in exploring or enacting distance learning technologies. The influence of private education and home schooling. What is the role of the private and home school community on distance learning and public schools? Advocates of home schools and private schools alike have demonstrated an ability to obtain and make use of resources in order to improve upon the education provided by the public school sector. In addition, because the number of students served is smaller, fewer resources can go further with greater flexibility. Monohan and Wimber suggest that public school educators must take the initiative in the area of financing the costs for a technology-based program or they will be preempted by private and home schooling organizations. Finally, private schools and home schools are able to shift the focus from teacher as the deliverer of knowledge to teacher as a facilitator or guide to information. The New Paradigm - Questions and Prospects This paradigm shift from student-filled, single teacher-directed classrooms to "teacherless", boundary-less, timeless learning or schooling is causing a degree of stress to major stakeholders in the educational community. During May, a convocation entitled "Reinventing Schools: The Technology is Now! At the convocation some role changes in educational settings were delineated: This model of education calls for changing the roles of students, teachers, and schools. In the new model of school, students assume many of the functions previously reserved for teachers. In small groups, individual students act as peer-tutors for others. Because they are often the ones most familiar with new technologies, students lead by example, helping their classmates work through problems. In this way students begin learning from an early age how to communicate and how to assume greater responsibility for their own education. Teachers in contrast, change from being the repository of all knowledge to being guides or mentors who help students navigate through the information made available by technology and interactive communications Schools may emerge in unlikely places--such as office buildings--or more conventional schools may have branch campuses integrated into businesses, hospitals, or homes" National Academy of Sciences, One striking example of how educational stakeholders are reacting to the shift can be seen at the University of Maine where the faculty of seven campuses voted "no confidence" in the System Chancellor due to his advocacy of distance learning Lick,

Clearly, not all stake holders have reacted so strongly to the changes available by the advent of distance learning technologies. But, if the changes will include a reduced need for classroom teachers and an increased need for technological expertise, one can expect that the stakes will be high for teachers, teacher unions, and politicians. For effective implementation, and therefore acceptance of the use of distance learning technologies, educators might view this shift to be like all educational changes of value which require new skills, behaviors, and beliefs or understandings. The emerging technologies of distance learning can have a positive effect on the educational system if we recognize that change is a journey, not a blueprint and that the development of new skills, behaviors, and beliefs is a complex process that must embrace the problems inherent in change Fullan, So, what are the problems and questions related to the emerging technologies of distance learning; how can distance learning be most effectively implemented; and what are the prospects for the future? Hundreds of studies that attempt to assess the instructional effectiveness of new technologies in schools have been and continue to be conducted. This report maintains that most studies focus their research on the mode of instruction, media attributes, the context of learning, and distance learning success factors. The learning effectiveness is measured in terms of traditional student achievement, such as test scores and final grades. A related concern to the question of learning effectiveness is the quality of the educational experience as demonstrated by: Another concern, addressed in the first issue of Flexnews, states that there can be poor education either in the traditional classroom setting or when delivered over a computer network in a new model. This assertion focuses on the need not to replicate a classroom, but to maximize the attributes of computer mediated communications technology. The article finishes by promoting the idea that educators must explore how to best integrate this new learning context into their teaching styles and into the delivery of their particular subject matter Flexnews, The needs that are delineated in the report include: In addition to needs that can be met through institutional support structures, the report maintains that distance learners must: Another dimension of the needs of distance learners is an investigation of student attitudes toward distance learning. These attitudes contribute to the overall assessment of student needs and to the implementation of a distance education course. One Touch Systems, reporting on the relationship of interactivity and the effectiveness of the learning program, states that "interactivity is crucial to effective distance learning as it gives instructors valuable real-time feedback to material they are presenting Interactivity also allows students to ask questions and share ideas with their instructor, which helps to boost student attention level and interest" One Touch, Present programs in distance learning contain a wide range of interactivity with varying degrees of success. The report states that professional development for teachers is most effective when it: This report states that, ideally, faculty development programs are based on the goals of: Once the instructors have become comfortable with the technology, they must determine the role of distance learning in the classroom. Districts will choose to use distance learning technologies either as a resource that is a component of the overall instructional program and curriculum, or as the main method of delivery. The report "Reinventing Schools: The report calls for programs that rely on distance learning as a key that opens opportunities for students within the framework of a new model of school as previously described. The Future of Distance Learning What is the future of distance learning technologies in education? What are the prospects and implications? The report "Reinventing Schools: In a year-round model, schools might be open all day and all year, with groups of students rotating in and out of session. Following the trend toward multi-age grouping, classrooms might include students of different ages. Traditional minute classes will stretch or disappear to accommodate activities made possible by technology. A multi-disciplinary approach toward teaching and learning will result in longer-term projects that cut across disciplines, combining the subject matter of previously separate classes.