

INTRODUCTION

A Glimpse into the Future: Our World in 2010

As we look into the future, rehabilitation, education and training, and organizational and leadership expectations will be dramatically changed by technology and distance education. Our world in 2010 will be very different from that of today. In 8 short years, there will be significant transformation in individual expectations, learning, and systems for vocational rehabilitation personnel and the consumers they serve. However, the core of the rehabilitation process will remain constant: the critical relationship between the counselor and the consumer. The focus on careers and employment will direct the counseling relationship. Professionalism will increase, and lifelong learning for consumers and rehabilitation personnel will be an expectation and a reality.

To illustrate our world in 2010, we present five individuals—a consumer, a counselor, a human resource specialist, an educator, and an administrator—and describe their progression, current environment, and expectations.

The following is a glimpse of Juan, an employed consumer of the state rehabilitation organization in the year 2010.

I am 22 this year and have just graduated from college majoring in molecular computing. I was born in southern Mexico and moved to the United States when I was 3 years old. You seniors in rehabilitation will delight in knowing I was sponsored in college by my rehabilitation counselor, whom I've met only twice in person but whom I've talked with numerous times using my computer phone. Most of my counseling was completed online and even included my family when we were developing my educational plan. My voice-command computer phone is a wireless device that transmits to an earbob and screen glasses, which I use for work, recreation, and communication. The sound and wide screen are awesome! At 4" x 6", it is one of the larger computers and is getting outdated, but until I receive some more paychecks, it will have to do. I took most of my classes on the computer phone. My new job allows me to work from anywhere, as our shared virtual office space

exists only on a server. We are doing some cutting-edge design on the new molecular computers running at 6.2 terahertz.

I was asked to comment on some of my earliest memories. The first president I remember was President Clinton when I was 11 or 12, and my earliest memory of war was a lot of talk about Afghanistan. I do remember reading about the Gulf War and Vietnam, but I am not entirely sure when they occurred. My early interest was TV, Nintendo, and skateboarding until I got hurt. Now I am fascinated with battery-powered electronics. A few years back the emphasis changed in rehabilitation from changing the environment to accommodate my mobility needs to changing me to accommodate any environment. That's why I'm so proud of my Nimbus 2010 PTV (personal transport vehicle) that allows me to go wherever I want—over stairs or different terrain—in a standing position. It is really great! I am happy to be living in an era when I can work and do what I want to do without anyone's help. Rehabilitation has paid off for me.

Juan's counselor, Carol, is a certified rehabilitation counselor in a state rehabilitation organization. The state organization has changed in the past 8 years through legislative mandates, changes in federal and state priorities, restricted budgets, and dramatic developments in technology and education.

I have a specialized certificate in rehabilitation technology. Since I joined the state rehabilitation organization in 2001, there have been a number of changes.

The Rehabilitation Act, as amended, was reauthorized in 2008. The legislation, entering its 90th year of continuous federal support, remains the oldest domestic legislation in the United States. There is an increased focus on workforce development, careers, and lifelong learning for persons with significant disabilities, especially those who are receiving Social Security benefits.

Numerous administrative changes occurred in the past 8 years. I operate from a virtual office and gather in my unit on Friday mornings for consumer and counselor discussions, education and training, and completion of routine organizational demands. I determine my work hours to respond to my professional performance plans, the availability of the consumers and employers, and my personal expectations. My supervisor operates from a home office, and I communicate with her via technology. My supervisor is primarily a mentor and coach addressing critical issues between the consumer, the consumer's community resource mentor, and me. The ratio of supervisors to counselors is 15 to 1. The money saved from a flatter administrative structure and the reduction of expensive office space is directed to counselor performance pay and consumers' education and employment plans.

I use a wireless communications system, which has immediate access to Internet 2 from anywhere in the country. The system has voice, picture, print, and multiple conferencing capabilities. The communication system provides internal case management functions and uses smart systems for data input, analysis, and retrieval. The system replaces the laborious processing functions of administrative personnel. State and federal reporting requirements are managed through the Web-based data system. This system links me to the state agency and the various reporting requirements.

I completed my graduate degree in rehabilitation counseling through distance education in the early part of the century and am developing specialized competencies to meet consumer needs. The lifelong learning regulations of the Rehabilitation Act are addressed through multiple educational technologies. I am currently enrolled in a diversity learning experience from the University of California at Berkeley and completed a course in economics and workforce development from Rutgers University in New Jersey. Because of the significant number of consumers from Mexico, I will be taking a study module on disability and the family from the Universidad de Sonora. The educational experiences are linked to my performance pay and advancement. Because of the immense changes in education, learning, and research, Congress and all state legislatures indicated that government personnel would continually be enrolled in educational opportunities to ensure relevancy and currency of knowledge and experiences. Educational opportunities are a part of my performance plan and are completed via multiple learning strategies.

The staff development personnel of 2002 have been transformed into lifelong learning specialists in 2010. They are considered integral to the agency's immediate and long-term planning and strategic changes. Jean, who started with the organization as a counselor in 1990, earned her graduate degree in rehabilitation in 1997. She continued her education and earned postgraduate certificates in adult learning and instruction. In 2003, she served an agency internship as a professional mentor. Let us see what her role is in 2010.

I am a specialist in the Office of Lifelong Learning within the state rehabilitation organization. This is my most demanding position. Years ago, my colleagues and I were called human resource development coordinators. Our role focused on coordinating training events for agency personnel. My predecessors were responsible primarily for compliance with federal, state, certification, and accreditation requirements. A system-wide shift to lifelong learning prompted an expansion in the way our work was viewed and the role it plays in maximizing organizational and personnel outcomes. Rapid advances in instructional technology increase access to a broader range of learning activities for employees, consumers, and their community partners.

The mission of the Office of Lifelong Learning is to support person-centered learning through diverse designs that ensure choice and access. Our learning community is rich in diversity—of learners, activities, environments, geography, and relationships. My colleagues and I are guided by learner-centered principles as we develop multiple approaches, tools, and learning experiences. We work in partnership with private-sector business and industry, other public-sector organizations, and educators from around the globe—all of whom are committed to adult learning approaches.

My job is dramatically different from that of my predecessors. They were often responsible for maintaining a statewide training calendar, coordinating meeting space, and hauling around all that audiovisual equipment! Within minutes, I can convene a videoconference using handheld units. Web-based classrooms continually track learner participation, usage, and outcomes within the state agency. Supervisors are a vital part of the learning process. They serve as mentors to self-directed learners and make possible the practical application of concepts and ideas.

Leadership over the past 8 years has made our progress possible. The Office of Lifelong Learning exists as a result of system-wide support through resources, policy development, increasing distance education options, and the belief in the efficacy of adult learning.

The educator in the university is significantly affected by the changes in expectations of the learners and community employers and by the changing nature of higher education. In the late 1990s, the relevancy and value of technology and distance learning were extensively discussed. Stephen is typical of the university educators who are addressing the challenges of education and the influences of technology on instruction, the educator, and the learner.

I completed my master's degree in rehabilitation counseling through a traditional on-campus program in 1985. After 3 years of counseling experience, I decided to pursue my doctorate part-time and then full-time during the last year of study. I finished my degree in 1993 just as distance technology was being considered for communications and resource information in the rehabilitation field. Congress authorized the Comprehensive System of Personnel Development (CSPD) requirements, and the need for education for practicing counselors was a common topic of discussion among educators, administrators, and funders.

Our university administration, the graduate studies dean, and the faculty senate debated the relevancy and efficacy of distance education for over 3 years. They agreed that we could consider parts of courses and, with numerous approvals, a complete course offering via distance. In 1996, a full distance education graduate degree was out of the question. Our faculty debated the relevancy of distance education and its application in our human services discipline. Many of us believed it was impossible to teach human behavior without seeing and touching the student.

A transformation began around the turn of the century. The federal and state agencies began to take the CSPD concept seriously. The need for qualified personnel—now—was very real. Federal funding became available, and some of our colleagues in other universities across the country started offering courses in our community. They were attracting employed rehabilitation personnel who wanted the academic credentials and experiences but did not have the time to sit in a class one or two days a week for five or six semesters. Then the adult learners in our courses started using technology to communicate with all of us.

Out of desperation, I offered my first course—with great fear and trepidation—in the fall of 2002. I spent many hours understanding technology, examining my course content, and thinking about what I wanted the adult students to learn. As I worked on the course curriculum, the content fascinated me, and I realized how I had stopped being creative in my traditional courses. Unfortunately, something happened that I never expected when I entered academia: I had been willing for everyone to change except me.

For the past 8 years I have been teaching our distance and on-campus students. There is no longer a distinction between the styles and approaches to teaching. I have co-taught three courses with a colleague in Dublin, Ireland, on disability management from U.S. and European perspectives. I have “guest lectured” with colleagues across the country and in three other countries without ever leaving my home. The course content is constantly

changing, and I am learning more from the learners in my courses than I ever thought possible. There is a renewed excitement about the curriculum, and I can actually see learners using information to make a difference in the lives of individuals with disabilities.

There are some downsides. The learners have access to me—via the Internet—24 hours a day and 7 days a week. Office hours are virtual. I know the personalities and the needs and dreams of my distance learners better than those of the learners on campus, but in many instances, I have never seen or talked to my virtual learners. I know that the learners are driving the relevancy of the curriculum and I must remain current and accessible or they will “switch off the computer” and transfer to another university.

When I became a faculty member, I believed I knew how to teach, and I expected my students would automatically learn. I now realize that my learning was only beginning and that I must continue to change and to examine the relevancy and importance of my content and instruction. Technology is no longer enrichment in my instruction; it has become the backbone of my profession.

The state rehabilitation organization has changed during the past 8 years. The administrator embraces the principles of stewardship (Block, 1993) and serves as a leader, mentor, and collaborator with multiple partners within the state. Administrators’ career paths have been changing over the years, and they have had to balance the changes in systems, technology, and consumer and community expectations. Treva is reflective of current state rehabilitation administrators. The following is a glimpse of her progression and current work.

It is an interesting process to look back over your career and wonder how you arrived at your current position. As I look out my window today, I am the director of rehabilitation in my state. I have just accepted this job and moved here from a rural office where I had been a counselor, supervisor, and director of the Office of Lifelong Learning—an office completed in a virtual setting. The career steps between the two jobs have been very interesting.

When I began employment with the agency in 1997, I was assigned to the rural office as a rehabilitation counselor. I had completed my associate of arts degree in a tribal college and then completed my last 2 years at a state university. The rural setting allowed me to work with the local tribal rehabilitation program and other consumers with diverse backgrounds.

In 1999, my job as a rehabilitation counselor was at risk. I had accepted the position with a bachelor’s degree in psychology from my undergraduate university and was looking to settle in for my career in this rural community. It was quiet. I was a part of the community, and I was hundreds of miles away from the two population centers, the capital city, and typical organizational politics in our state. However, the CSPD began to set the standard for rehabilitation counselors, and I had to return to school or lose my job. No universities offering graduate programs were close enough for me to attend, so the state agency came up with a plan. I was offered a distance education option with a cohort group from five state agencies through a university in another state. The program involved videos of classes, work with cohort members, Internet and e-mail chat groups, electronic research,

and on-site supervision from a local certified rehabilitation counselor. By 2001, I had a master's degree in rehabilitation counseling and received my certification.

You might ask why all this is important today as I start this new position. Well, distance education became a model for the agency—both for staff and for our consumers, people with disabilities. We discovered that distance education could overcome accommodation issues, rural community challenges, and employment requirements for specific education and training. It offered a way for people to stay at home, get their education and training, and then get local jobs. It created all kinds of new opportunities for our consumers. We could get fully accredited degrees for them, create local study groups, and gain support from local employers because we could offer more qualified workers. For rural areas, and for individuals with transportation challenges, distance education has become the meaningful first choice rather than something people settled for.

For me, distance education has offered other dramatic changes. Once I completed my master's degree by distance, I was motivated to learn more. Education and new ideas were more accessible. By 2003, I was ready to pursue a doctorate in rehabilitation leadership. I did not have to leave my rural community. I still had to make lifestyle changes to keep up with the work, but I was able to take on the challenge of increasing my skills and moving towards a strong leadership role. By 2007, when I completed my dissertation, "Distance Education as a Tool to Change State/Federal Rehabilitation," I was determined to make a real difference in my state. I became a supervisor, then the director of the Office of Lifelong Learning and, today, the director of the state agency. We use distance education models for staff and consumers and to increase organizational responsiveness. No one model is the key to success. Video-conferencing, streaming video, televideo, Internet, e-mail, cohort study, and research groups all have a place. Distance education helped me advance. It helps our consumers advance. Today it is one of the most powerful tools in our organization. I am the emerging model of state director.

These scenarios reflect a glimpse into the next decade. While none of us can predict the future, we know there will continue to be consumers with disabilities who are either entering or returning to the workforce. There will be a significant role for public-sector rehabilitation efforts. Rehabilitation personnel must increase their knowledge, skills, and abilities and remain abreast of changes in the environment.

Technology will dramatically influence our access, work days, and education. As an example, Molitor (2001) indicated that Internet devices worldwide will increase from 100 million in 2001 to 361.9 million in 2010. Just this one statistic reflects the change in the future.

The questions of education and lifelong learning will move from "Do we need to?" to "How do we remain current and competent?" Distance education will become education through many strategies and means. We suspect that the distinctions between traditional education and distance education will fade into the past within the next 8 years. The key will be learning and ensuring currency, relevancy, and applicability for all learners—children as well as adults.

References

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1. Distance Learning: History and Antecedents

A variety of factors have influenced the development of distance education over time. These factors include social, workforce, educational, technological, and legislative changes. This chapter reviews the history of distance education and discusses how these influences, separately and collectively, affect the current status of distance education programs available to vocational rehabilitation (VR) professionals.

History

Many public VR professionals think of distance education in terms of the relatively recent growth of master's degree programs and courses available for state VR counselors to meet the requirements of the Comprehensive System of Personnel Development (CSPD) section of the 1998 revision of the Rehabilitation Act of 1973. However, the development and advancement of distance options for education have been part of the educational fabric for over a century.

Distance learning began with the written word. Before writing, a student had to be within earshot of the teacher to learn. Once information could be reduced to writing, the student could be separated from the teacher. Over the years, the options for presenting information to the student have continued to grow.

Distance learning first came into the public view with the advent of correspondence courses for various subjects. One of the earliest large-scale efforts involved the teaching of a shorthand system in England in the 1830s. In 1870 in New England, Anna Ticknor, coined the “mother of American correspondence study” for her 24 years of work, developed a correspondence curriculum to provide educational opportunities for women and founded the Society to Encourage Studies at Home.

In 1883, the state of New York recognized the emergence of the correspondence school movement by authorizing degrees by correspondence. The Chautauqua Institute was authorized to confer degrees to Sunday school teachers. The students attended classes during the summer

and completed their coursework at home during the winter months. This early model, which involved some classroom participation at the school, can still be seen in many programs today.

In 1890, the Colliery Engineer School of Mines, a small school in Wilkes-Barre, Pennsylvania, developed a home study course on mine safety. That effort evolved into the International Correspondence Schools, of which we are all familiar through ads in magazines and other mass media. The first true college-level courses to be made available by mail were offered by the University of Chicago.

Until this time, the growth of distance education depended on one medium, the printed word. But the world of technology was evolving rapidly. In the late 1890s, a large step forward occurred with the invention of radio. Broadcast capability expanded the distance learning experience to include the spoken word. Unlike the telephone, which was restricted to one speaker and one listener, the radio expanded the audience manyfold.

The next significant development was television. Now voice and picture could both be delivered. In 1957, *Sunrise Semester* debuted on the CBS Television Network. The program offered college credit courses over a commercial television network at 6:30 am. The show ran until 1982. During this period, additional media were developed such as videotape, which allowed the television presentation to be “asynchronous.” The student and teacher no longer needed to be “synchronized,” available at the same time. The student could record a lecture and view it at his or her convenience.

By 1982, the personal computer was here to stay. E-mail was available to the public, and the Internet, a worldwide network of connected computers that formed the backbone of the “information super-highway,” was expanding at an unbelievable rate. The idea of taping moved into the computer world with the advent of “streaming video.” With this technology, a computer file could be e-mailed or accessed on a website and a lecture or demonstration viewed at the user’s convenience. Couple computers with closed-circuit television, streaming video, online chat groups, videoconferencing technology, and virtual reality, and the possibilities for distance education explode.

Factors Influencing the Development of Distance Education

The number of distance education programs at the postsecondary level has increased due to a variety of social, workforce/market-related, educational, technological, and legislative factors. Action and progress in each area play a part in the current status of distance education programs available to VR professionals. Social factors that influence the development of distance education include the women’s rights movement, the civil rights movement, the disability rights movement, the changing nature of the American family, and changing expectations regarding the need for continuing and advanced academic learning. Workforce factors include the increased relevance of the global economy, higher technological and professional skill requirements for employment, changes in workforce demographics, and the rapidly changing nature of the competitive employment market. Educational factors include the changing demographics of

postsecondary students and changing attitudes toward lifelong learning and workforce development. Technological factors drive the shift in distance education away from traditional face-to-face models of group communication and toward more personal, accessible, and higher-tech options. Finally, legislation responds to the aforementioned factors, supports and funds innovation, monitors the impact of activities on citizens' needs, and establishes standards and regulations to create or support change. Each of these factors can be shown to impact the educational needs of VR professionals.

Social Factors

Changes in society influence all aspects of daily living, including employment and learning. Our social and cultural attitudes have changed dramatically from the inception of our nation, particularly in regard to disability and difference. In 1789, following the Revolutionary War, the federal government accepted the responsibility of providing pensions to disabled veterans. In 1795, Thomas Paine wrote his pamphlet *Agrarian Justice* (published in English in 1797), in which he proposed a social insurance program for the nations of Europe and potentially for the young American Republic (Bortz, 2002). On July 16, 1798, the Marine Hospital Service was established by an act of Congress to provide for the temporary relief and maintenance of sick and disabled seamen. This was the first prepaid medical care program in the United States that was federally administered and financed through compulsory employer tax. This service later became the Public Health and Marine Hospital Service, predecessor to the Public Health Service of today (Bortz, 2002). Throughout the 1880s, public health programs and institutions as well as private, union-based, and international medical and social benefit programs emerged. In 1898, the first state law providing pensions for the blind was enacted in Ohio.

In June 1920, following World War I and the rise in industrial technologies, the Vocational Rehabilitation Act (commonly called the Smith-Fess Act) was one of the first federal grant-in-aid programs passed by Congress. It was originally conceived as a vocational training and counseling program for industrially injured civilians. The restoration of medical and physical ailments was introduced as part of this program in 1943. In the area of general public health and welfare and support for the aged, children, and people with disabilities, the August 1935 Social Security Act (R.R. 7260, P.L. 271, 74th Congress) became law (Bortz, 2002).

Social influences seen during the Depression and World War II, including the rise in nationalism, patriotism, and interdependence, were reflected in the social legislation enacted at the time. In 1941, the Rehabilitation Coordinating Committee was established within the Federal Security Agency by order of the administrator. It was charged with continuing the development of a program of coordination among the various federal services engaged cooperatively with state governments in the general field of service to the disabled. In 1942, President Franklin D. Roosevelt asked Congress to establish within the Federal Security Agency a single rehabilitation service as the central authority to coordinate and expand state and federal services for rehabilitation of civilians and military personnel. In 1943, amendments to the Vocational Rehabilitation Act established the Office of Vocational Rehabilitation in the Federal Security Agency. In 1944, the G.I. Bill of Rights, the Serviceman's Readjustment Act of 1944, was

approved. It linked successful readjustment to the workforce to education and training, special placement services, and readjustment allowances while the veteran was finding employment (Bortz, 2002).

During the boom of the postwar years, the Vocational Rehabilitation Act was amended to call for cooperation of VR agencies with state public assistance agencies, the Bureau of Old-Age and Survivors' Insurance, and other public agencies providing services related to VR services. The 1954 Vocational Rehabilitation Act Amendments included new provisions to provide specific funds for training staff.

The 1960s were marked by the view that an active, modern government was an effective means of combating social challenges. Federal reform initiatives during the 1960s included antipoverty programs, allowed-earnings provisions under the Social Security Act, public housing development, urban development campaigns, and the 1964 Civil Rights Act. The Vocational Rehabilitation Act Amendments of 1965 (P.L. 89-333) were intended to improve and expand the existing VR legislation by allowing more flexible financing and administration of state VR programs, increasing the number of federal projects for rehabilitating older workers, and establishing more workshops and services for older and disabled persons.

In the 1970s, as the nation's economy entered recession, costs and benefits were analyzed and the focus shifted away from the strongly centralized federal management of government programs. Growing environmentalism and health research identified new risks, directly represented in federal black lung benefits for coal miners (Bortz, 2002). The women's movement contributed to changes in the workforce that began in the war years and have continued through the present.

The social reforms of the 1960s and the strong group identity and civil rights development of the 1960s through the 1970s had a direct impact on the view of individuals with disabilities. Veterans returning from Vietnam presented significant challenges to public support systems. Government assistance in the retraining and placement of individuals with disabilities was increasingly expected, and awareness of discrimination of all forms grew. The Rehabilitation Act of 1973 significantly expanded VR services nationally.

The economic recovery of the 1980s and 1990s resulted in an increased emphasis on economic self-sufficiency and independence. The "me generation" did not bypass individuals with disabilities. Advances in medicine, technology, and social acceptance and a booming economy with greater demands for workers contributed to a change in the perception of traditional "special" or "helping" programs (25th IRI, 1999). Consumerism became a social phenomenon and, in disability services, resulted in the emergence of a more informed and involved service population. Consumers of VR services sought and achieved a greater voice and involvement in the provision of services, resulting in increased expectations of high-quality employment outcomes (25th IRI, 1999). Changing expectations of VR service providers combined with their increasing professionalism contributed to a greater demand for specialized skills for the VR

counselor. This demand translated directly to an increased need for accessible educational programs both for staff of the VR agency and for consumers of VR services.

Workforce Developments

Changes in the nature of work and the composition of the workforce lead to changes in the demand for education and training of workers. Human resource professionals must respond to changing trends within their organizations, within the world of work, and within the global economy (Kerka, 2001a). The Academy of Human Resource Development identified key themes currently affecting the human resource environment: diversity, cross-cultural issues, concepts of learning organizations, technology in work and learning, the changing workforce, informational learning processes, and spirituality in the workplace (Kerka, 2001a).

The diversity of the workforce has increased significantly as a result of changing societal demographics and increased globalization. The workforce includes more parents of dependent children, women, caregivers for the elderly and for family members with disabilities, and individuals who identify themselves as part of a minority group (Bond, Galinsky, & Swanberg, 1998). Employees are increasingly juggling multiple life demands with employment demands (Metlife, 1999). These employees represent a significant increase in the number of so-called “nontraditional” students attending educational programs. Nontraditional students over the age of 25 have increased by 41% and over the age of 40 by almost 12% (Kerka, 2001a). These students are more likely to select programs, such as distance learning, that provide flexibility in managing course demands.

The international expansion of business has increased employee and consumer diversity, as well as the variety of skills and experience that workers bring to their employment. The number of international students seeking to further their education is approximately 500,000, which is expected to increase to 160 million by 2025 (Web-Based Education Commission [WBEC], 2000) as options for distance education continue to develop.

The work world is increasingly dependent on employees with higher skills. In 1950, 20% of employers required workers to have training beyond the high school level. In 2000, 85% of employers required workers with such training (WBEC, 2000). Moreover, there is a greater need for continuing education for employees. The Web-Based Education Commission Report to the President estimates that 50% of all employee skills are outdated within 3 to 5 years (WBEC, 2000). Additionally, more work tasks require the use of technology for communication, information management, problem solving, and information seeking (Imel, 1999). At the same time, workers are less likely to expect long-term, lifelong employment with one employer (Lankard, 1995). In the competitive workplace, workers are increasingly responsible for obtaining, maintaining, and developing new, necessary skills (25th IRI, 1999). There is a simultaneous increase in interest in both degree and nondegree learning over one’s entire lifetime, not only to stay current but also to maximize one’s transferable skills (Kerka, 2001a). Between 1998 and 2010, full-time college enrollment is projected to increase by 22% and part-time enrollment by 16% (WBEC, 2000).

Within the VR field, the professional status of VR counselors has been evolving since the 1954 Vocational Rehabilitation Act included specific reference to funding continuing training for staff (25th IRI, 1999). The role of the VR counselor continually adjusts in response to changes in the disability community, advances in medical treatment and technologies, the political and legislative environment, and the amount of resources available (27th IRI, under review). As higher expectations develop for the expertise and skill level of not only VR counseling professionals but also of staff at all levels of the system, there is an increased emphasis on professional standards, which in turn results in higher expectations of high-quality, flexible training options (27th IRI, under review).

The 1992 and 1998 amendments to the Rehabilitation Act, within the Workforce Investment Act of 1998, addressed these higher expectations with a renewed emphasis on employment outcomes that decrease dependence and on the qualifications necessary for VR staff. Qualification has been defined in the Act as part of the CSPD requirements. The CSPD requires every state VR agency to ensure that VR services are provided by “qualified” VR counselors, who are defined as counselors who have academic credentials consistent with either the highest certification in the state or with the national certified rehabilitation counselor credential of the Commission on Rehabilitation Counselor Certification. While the initial focus of the CSPD implementation has been on the qualified VR counselor, it is expected that similar standards related to other fields within VR will be a future area of focus.

As a result of the increased expectation of professional-level training, VR training dollars are being used differently today than in the past and can be expected to be used still differently in the future. While before the CSPD amendments most agency in-service training funds were used to provide on-site, topic-specific training programs across staff positions, currently VR agencies are using the greatest portion of their training dollars on graduate credit courses and/or degree programs for counseling staff. In the future, more dollars may be used toward professional training for non-counseling staff as well as for the purchase of the technology and resources necessary for staff to access continuing education from their worksite or desktop.

Other changes in the Rehabilitation Act address service coordination and equal access for qualified students with disabilities. Just as these changes are important for counselors working with students, they are relevant for counselors with disabilities who are students themselves.

Educational Factors

Changes in the workforce and in the public view of education as a lifelong endeavor result in a growing market of potential students. The postsecondary education market was estimated at \$1.2 billion in December 2000 and is expected to increase to \$7 billion by 2003 (Moe & Blodgett, 2000). The demand for higher academic training is also indicated by the types of programs institutions provide via distance methods. There are more graduate programs and first professional programs than undergraduate programs, more four-year degree programs than two-year degree programs (U.S. Department of Education, 1999). The number of students enrolled in

distance education programs has tripled from 5% to 15% since 1998 (WBEC, 2000) and continues to increase as more programs become available.

Clearly, there is an incentive for educators, especially in public institutions, to provide this option to prospective students. This incentive is demonstrated in the higher proportion of public institutions than private institutions that offer degree programs via distance (U.S. Department of Education, 1999). Public institutions with lower private funding support benefit from access to higher numbers of students. Private institutions with higher private financial support have an incentive to support brick-and-mortar facilities, face-to-face faculty-student interaction, and higher selectivity for class attendance in order to maintain their elite status. Nevertheless, there has been an 11% increase in all institutions' distance education programming since 1995 (U.S. Department of Education, 1999).

The rising number of programs is also influencing public funding and financial aid availability for distance learning. Many theories of educational development that consider the impact of distance learning continue to be put forward. The American Council on Education set national institutional principles and standards for distance education (National Institute for Literacy, 2000), and the U.S. Department of Education has approved demonstration projects providing student financial aid for distance education programs (Kerka, 2001b).

Technological Factors

Changes in communications technology directly impact distance learning. Technology has become increasingly valued in our society (Imel, 1999). In a 2002 Gallup Poll survey (Rose & Duggar, 2002), 59% of respondents disagreed that technology is only a small factor in everyday life. Three quarters of the respondents consider themselves to be able to use and to understand technology, at least to some extent. For 67%, "technology" equals "computers." Signs of this cultural shift can be readily seen. Examples in the recent past include the "Y2K crisis," the rapid rise in e-mail use, and the growing number of websites for both individuals and companies (Imel, 1999). Increased availability, improved networking capabilities, and the rise in Internet use all contribute to the increased prominence of distance learning (U.S. Department of Education, 1999). Technology change also influences the type of distance education technology used by educators.

The idea of using a learning technology is not new (Imel, 2001). A learning technology is "any tool designed to extend a learner's capacity for effective action and that requires skill and certain strategies to use efficiently" (Burge, 2001, p. 1). When using any technology, whether a particular strategic teaching tool or an Internet system, educators must consider how that tool will assist in creating an environment conducive to learning (Imel, 2001). Inherent biases in each choice of technology influence the learning environment.

Usually, when the term "distance education" is used today, it refers to some type of learning environment in which the instructor is physically separated from the learner by time or distance. The pace of change in technology is increasingly rapid. Gordon Moore, former president of Intel

Corporation, estimates that computing power doubles every 18 months (National Institute for Literacy, 2000). As access to home computing continues to rise, institutions change which technology they select as their predominant distance platform. Since the 1990s, when video and audio technologies, including recorded lectures, interactive video, one-way video/two-way audio, and broadcast video (televised classes), were most prominent, there has been a steady increase in the use of Internet technologies. Two-way “live” video and recorded video have decreased in use while asynchronous Web-based instruction has increased by 82% (U.S. Department of Education, 1999).

The use of technology is about more than replacing traditional classroom models. It has an additional impact in that individuals in real work settings can readily access all types of professional information. With ready access to information, an individual can learn, filter, and apply knowledge in real time on the job, quickly expanding his or her knowledge base almost as needed.

Legislative Factors

Each of the factors reviewed above contributes to the increased use of distance education for public VR professionals. Students employed in public VR, as with many adult learners, have work-life demands. Yet, changing credentialing requirements as a result of CSPD provide a strong incentive for the pursuit of professional academics. Additionally, employees may be based in rural locations where traditional programs are not readily available. The increasing professionalism of the rehabilitation field creates a higher expectation of ongoing high-quality training. Distance learning can address many of these factors.

Moreover, with the emphasis on increased professionalism in rehabilitation, as well as the change in social attitudes and employment expectations for persons with disabilities, the number of students with disabilities is increasing. Technology plays a large part in ensuring accessibility of programs. The Rehabilitation Act, Title V, Section 508, requires that information technology purchased by the federal government be accessible to employees and the public. The Department of Education has held that any state receiving Assistive Technology Act funds under Title I of the Act is obligated to comply with Section 508 and the established standards. Coverage includes state agencies in the states receiving funds from the Assistive Technology Act.

Accessibility in employment and in the programs and services of public and private entities, including educational institutions, is also addressed directly in Titles I, II, and III of the Americans with Disabilities Act of 1990. Additional information on accessibility is provided in Chapter 6.

Summary

Legislation, increasing numbers of potential learners, and higher academic standards for employment, when combined with changing social, technological, and educational factors, result in an environment in which distance learning can develop and thrive. The factors that have shaped distance education will continue to influence its quality and recognition of its important role in VR services.

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2. Distance Learning: Perceptions and Guiding Principles

To remain relevant and current, educators and administrators must understand the importance of adult learning and distance education. Various perceptions must be addressed and myths dispelled. Principles are needed to serve as the basis of the vision and development of distance education. This chapter addresses these areas.

Adult Learning Theory

According to Eduard Lindeman (1926), the father of modern adult education, “The whole of life is learning, therefore education can have no ends” (p. 4). He was the first to propose that adults learn differently than children and that specific strategies should be developed for adult education. “Adult learners are precisely those whose intellectual aspirations are least likely to be aroused by the rigid, uncompromising requirements of authoritative conventionalized institutions of learning” (p. 26).

Although many authors have proposed theories about adult education, and more precisely adult learning, Knowles (1970, 1980, 1990a, 1990b) and Brookfield (1986) have provided the most comprehensive descriptions and models for adult learning (O’Brien, 2001). In 1970, Knowles proposed a concept of “andragogy” (p. 38), the theory and method of teaching adults. The concept of andragogy is particularly interesting to educators of adult learners because it is learner centered and promotes democratic practices in the learning environment. It enables adult learners to use multiple strategies to acquire knowledge and skills rather than requiring conformance to a single method of learning. These practices increase opportunities and choice for adult learners. They separate professional adult educators from their counterparts in childhood, secondary, and higher education (Brookfield, 1986).

Adults need to know why they need to learn something before pursuing it (Knowles, 1990b). Their performance is enhanced if they understand the benefits and/or consequences of learning

or not learning the information. When people begin to see themselves as adults, their self-concept changes (Knowles, 1970). Adults perceive themselves as better able to make decisions and manage their own activities, and they resist having others impose their will on them (Knowles, 1990b). Often, adults are uncomfortable in educational environments because they have a conflict between the previous model that required dependency of the learner and their own need to be self-directing (Knowles, 1970, 1980, 1990a, 1990b).

The role of the adult learner's experience is important (Knowles, 1990a, 1990b). Adults have both a greater volume of experience and a qualitatively different level of experience than children (Knowles, 1990a). It is not just a matter of having lived longer; their roles as spouse, worker, parent, and citizen add to what they bring to the classroom (Knowles, 1970, 1980, 1990a, 1990b). Their experiences become "the richest resource for learning" (Knowles, 1990b, p. 59). The adult educator has to value the experience of adults because their identity is tied to these experiences. Readiness to learn becomes increasingly oriented to the developmental tasks of the social roles for the adult (Knowles, 1970). "Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real life situations" (Knowles, 1990b, p. 61).

Finally, orientation to learning plays a role in adult learning. "Whereas children and youth have been conditioned to enter the learning activity with a subject-centered orientation to learning, adults have a life-centered, task-centered, or problem-centered orientation" (Knowles, 1990a, pp. 6.11-6.12). Adults need to be able to apply the learning immediately. They are motivated to learn something to the extent that they perceive that it will help them with their problems and concerns (Knowles, 1990b). Educational activities that meet these needs are more likely to be successful with adults.

Teaching-learning transactions undertaken by adults are complex, diverse, and difficult to categorize (Brookfield, 1986). One cannot assume that learning is being facilitated and achieved for learners simply because they are under the direction of an instructor. Six central principles of effective practice apply to adult teaching-learning transactions (Brookfield, 1986, pp. 9-11):

- Participation in learning is voluntary.
- Participants are respected for their self-worth.
- Facilitation is collaborative.
- Praxis is at the heart of collaboration.
- Learning fosters a spirit of critical reflection.
- Learning's aim is the nurturing of self-directed, empowering adults.

The principles of adult learning theory are integrated throughout this document. The essence of distance education is to provide adult learners with opportunities to maximize their learning experiences through multiple learning strategies.

Distance Learning and Education

Today's education is built on an agrarian model that worked in the years when we were a nation of farmers, foresters, and fishermen. Schooling changed to take on elements of the industrial revolution (factory-line classes, assembly-line curriculum, and instructor-foremen) that worked for the needs of the Industrial Age. New designs are needed to create the "knowledge workers" who will define the Information Age (Web-Based Education Commission, 2000).

The Web-Based Education Commission, a bipartisan congressional effort, reached this conclusion as they looked into using the Internet for distance education. In their report, they suggest a number of trends that have shaped and reinforced the need for distance education, regardless of model. For example, they noted:

- The demand for college education is increasing: full-time college enrollment is expected to increase by 22% by 2010, and part-time enrollment, by 16%. Amazingly, in 1997, 67% of all high school students went directly to college.
- In our age of technology, the need for skilled employees has dramatically risen. For example, 85% of current jobs require education beyond high school, with a partial result being the U.S. Immigration Service's recent move to raise the number of work visas given to foreign information technology specialists.
- With globalization, a growing world economy can create a strong and lasting demand for skilled knowledge workers and a technologically savvy workforce.
- While there are currently 500,000 foreign students in U.S. higher education, global demand for U.S. higher education is expected to reach 160 million students by 2025.
- The increased demand for college has caused costs to soar. For example, public college costs have risen 44% in the past decade.
- The increased demand for college education has had its spillover into distance education. The number of students enrolled in distance education was expected to triple from 5% to 15% of college enrollment by 2002.
- Between 1994 and 1997, distance education offerings by colleges doubled.

The commission found that the U.S. educational paradigm is outdated and outmoded. There are increasing pressures on postsecondary education institutions to provide education that is more efficient for our global economy. Throughout their report, they noted that education has fallen behind other major institutions, such as business, in keeping up with technology.

Rehabilitation educators are also feeling pressure to be responsive, which is leading to a greater use of distance education techniques to improve the knowledge and skills of its professional practitioners and support personnel. Part of the changing rehabilitation education paradigm is to move the classroom to the learners and bring a more diverse group of working adults into a learning environment. This allows these adults the opportunity to earn advanced degrees, better understand the philosophies behind their work, and develop and refine their skills. Eventually distance education will be used throughout all aspects of rehabilitation education and training.

Definition of Distance Education

There is no doubt that improved information technologies provide the engine for an increasing variety of distance learning and education methodologies. However, the technologies are only a part of distance education. This was well stated by Michael Graham Moore (2002), a long-time distance educator and founder/editor of the *American Journal of Distance Education*:

People sometimes think of distance education as technology, but it is not that at all. Technology just drives it. Distance education is a different paradigm of teaching and learning. It is about instructor-learner relationships and learner-to-learner relationships. It's about opening opportunity to people who otherwise would not have opportunity.

Learners need access to multiple strategies of education in their environment to find the best method to meet their educational needs. Distance education is one strategy. In any definition of distance education, distance is a key feature, i.e., the instructor and learner are separated by time and/or space. Thus, distance education can occur when an instructor and learner are separated by physical distance, and technology is used to bridge the instructional gap. It can also occur when the instructor and learner are communicating asynchronously, or at different times. Examples of asynchronous distance education modes include CD-ROM, video/audio, and websites. Computer-streamed and e-mail modes may be asynchronous or synchronous, and satellite and compressed video are synchronous. While a physical separation may be present, there is not necessarily a psychological or emotional separation. The use of written notes, phone contacts, and/or videoconferencing increase the communication and interaction between the learner and educator.

Distance education historically has meant correspondence courses. However, it has grown to encompass degree and certificate programs at all levels and in most fields. It requires “special techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements” (Distance Education Clearinghouse, 2002).

Models of Distance Education

According to the Distance Education Clearinghouse at the University of Wisconsin (2002), there are a variety of current distance education models. Two of the most common are the distributed classroom and the independent learning environment. In the distributed classroom, the instructor and learners interact as they would in any classroom, but the class is distributed to locations at a distance using compressed video television, satellite uplink/downlink, audiotapes, radio, educational television, videotapes, CDs or DVDs, streaming video on computers, or other techniques. The courses are structured in the normal lecture or group discussion format and are delivered to the learners at a distance. The distributed classroom is an instructor-centered approach. A prominent feature of this mode of instruction is that the instructor sets the time and structure of the class even though learners may view it at different times.

An example of the distributed classroom is a course taught on compressed video. The instructor teaches a class of learners face-to-face and has the class taped and distributed to different centralized sites where other learners watch the class live on a television screen and can interact with each other, the instructor, or other learners using the same phone connection. In a similar example using streamed video on a computer, the instructor lectures to a camera or a live class containing a camera, and the recorded images and sound are streamed live over the Internet. The distance learners can watch the class on their computer and participate in the class via e-mail, telephone, or instant messaging. The advantages of this methodology are that it is familiar to the instructors and learners and it is efficient for the instructor's time in that it does not necessarily require additional preparation beyond that of the live class. Another advantage is that the actual lectures can be put into a variety of media types (pictures, voice only, text, etc.) to accommodate different learner needs.

In the independent learning environment, the instructor structures the material in concert with each learner so that each learner uses a variety of educational techniques to acquire new knowledge and use it to solve problems. This model is much more learner centered and offers the advantage of allowing the learner to explore a variety of methods to solve problems and learn material. In this model, the instructor is a facilitator who sets up individualized programs of learning much more dependent on the learner's interest, skills, and learning styles. A disadvantage is that it can take a great deal of instructor time to establish individualized programs and monitor a variety of learners.

An example of this method is a Web-based course in which the course objectives are laid out on a centralized Web page that branches to different modules of experiences or problems to be tackled. Certain readings may be recommended or contained on the site or the learners may discover their own information resources and put them together into an independent study paper or project. Primary interaction with the instructor is via e-mail, the telephone, regular mail, or fax.

Differences Between Distance and Traditional Education

Over the past 10 years, educators have moved toward blending the principles and techniques of distance and traditional education. As the technology becomes more common and learners and instructors become more comfortable with distance strategies, approaches will be blended even more. However, for purposes of discussion, distance education raises some unique concerns for the university or state agency providing the class or seminar, the instructor, and the learner.

For the university or state agency, a first concern is to ensure that the distance education learner is treated the same as non-distance education learners. For example, the technology must be efficient, reasonably trouble free, and understood by the distance education learners so that they can be evaluated on the content of their program learning, not on their technology understanding. Learners who are constantly frustrated by an unreliable technology or technology that they cannot control will miss the point of the learning and will be frustrated by the delivery mode. For the university or agency, distance education programs bring about the need for unique support people. For example, in an effort to minimize cheating, proctors will be required, and to keep the

technology flowing, instructional technology personnel may be required for both the instructor and the learners. There is also the question of who is paying for the equipment, equipment maintenance, and support needed to keep these programs going. The university may have concerns about residency requirements, differential fees, admissions for distance education learners, and transfer credits. For the state agency, the concern may focus on getting the right equipment and software to the participants at remote sites. Concerns specific to the vocational rehabilitation (VR) agency administrator are discussed in Chapter 4.

Instructors' first decisions will concern learning objectives, learner abilities, and distance education delivery systems. For example, will they be teaching to a camera, a live audience, or both? Will they be working in the same time frame with learners? How will they receive learner correspondence, comments, or work? Some idea of the time frame of the courses and overall length of the learning experience is vital to instructor preparation. In the university, faculty will be concerned with how the distance education courses will count toward their expected instructional loads. They may be worried about intellectual property rights in that materials they develop can be distributed widely with or without their knowledge once they have been taped and mailed or sent over the Internet. Instructors will need additional and specific types of support that they might not otherwise require. For example, they need technical help to put their programs on tape or online. They may well need support for instructional design, artwork, video production, and computer usage that they would not need in their non-distance education instruction. Instructors are also expected to be available to learners outside of class. Thus, they may need a mechanism for being available to learners and balancing that availability with their other responsibilities. In universities, a way to advise students will also need to be developed.

Learners are faced with a number of specific concerns, not the least of which is their fear of the unknown. They may be wary of the technology involved or face increased self-doubt about this mode of learning, particularly if they are older learners who have not recently been in the classroom. Working adults may worry about the time demands of the learning. They may desperately need an asynchronous learning environment to be able to fit training or education into their lifestyle. On-campus learners typically have a number of resources available to them—such as the library—that they may still need at a distance. Another consideration is whether the program has a cohort group to provide extended learning and support. This may well affect their motivation to begin such training and, as importantly, to complete it. Learners will be concerned about the fee for such courses compared with non-distance courses. Those in degree programs will need to be cognizant of expected learner loads as well as the calendar for completing the course. It is easier to work major assignments around a crowded schedule if they can be done at the learner's choosing rather than that of the training agency. Some advantages and additional considerations about distance education from the perspective of the learner are discussed in Chapter 5.

Questions About Distance Education

In studying the field of distance education, a number of perceptions emerged in the literature and in discussions with various professionals. To address these perceptions, the following questions have been developed.

How effective are distance approaches compared with traditional education?

Recent literature reflects a broad range of perceptions regarding the credibility of distance education. Supporters of distance learning cite an abundance of research that shows no significant difference in the effectiveness of distance education compared with the traditional classroom experience (Brownson & Harriman, 2000; Ferguson & Wijekumar, 2000; Raymond, 2000; Rosenbaum, 2001; Worley, 2000). Russell (1999a) provides a bibliography of 355 research papers and reports suggesting no significant difference between the two modes of instruction; however, he also has a bibliography of research showing significant differences (Russell, 1999b).

The Institute for Higher Education Policy (1999) notes shortcomings in many of the studies on the effectiveness of distance learning:

- Much of the research does not control for extraneous variables and therefore cannot show cause and effect.
- Most of the studies do not use randomly selected subjects.
- The validity and reliability of the instruments used to measure student outcomes and attitudes are questionable.
- Many studies do not adequately control for the feelings and attitudes of the students and faculty.

Critics remain steadfast in their resistance to distance approaches, as evidenced by the following recent comment: “Distance education will be as good as in-class instruction when phone sex is as good as being there in person” (Badger, as cited in Rosenbaum, 2001, paragraph 34). Still others remain on the fence: “Give us another 2 to 3 years and the research may tell us something comprehensive about what works and what does not” (Atkinson, as cited in Rosenbaum, 2001, paragraph 28). The debate rages on.

What are the advantages of distance education?

Distance education is seen as a positive alternative to traditional instruction for adults desiring more education with minimal disruption to work and family (Rosenbaum, 2001). It is convenient to people already working in the field and to those who would otherwise not have access to courses (Emmons, 1999; Wardrope, 2001). Distance education promotes lifelong learning (Rosenbaum, 2001), flexibility (Guzley, Avanzino, & Bor, 2001), and increased access for geographically isolated groups (McConnell, 2000).

Is there agreement regarding these advantages?

Some dispute claims that distance education increases access and that its convenience and scope are appealing features. Cody, Dunn, Hoppin, and Wendt (as cited in Wardrope, 2001) suggest that a cultural bias may exist against students who cannot afford or lack sufficient training to use distant learning technology. Sherry (1996) expresses concern that students may not be willing to sacrifice classroom interaction for the convenience of the distance education experience. She cites various studies that suggest that students choose distance programs for reasons other than preference. Sherry urges distance educators not to sacrifice program quality for expediency and convenience. Similarly, Peek (2000) cautions that program quality should not be sacrificed for accessibility to underserved groups.

What are the specific concerns about distance approaches?

Debates about the efficacy of distance education typically begin with a concern for interactivity. Interaction is deemed a critical feature between student and instructor, as well as between students. Dyrud (2000) posits that group interaction is less effective in technology-based forums. Consideration for others and group etiquette decrease without face-to-face interaction. Further, Dyrud notes increasing evidence that electronic communication results in isolation.

How do distance learning proponents respond to these concerns?

Guzley, Avanzino, and Bor (2001) assert that the responsibility for interactivity rests historically with the instructor, emphasizing teaching behaviors that promote instructor/student contact and teaching strategies that promote group learning. They argue, however, that interaction in all learning milieus is in need of further examination. Indeed, traditional classroom interaction may not summarily be effective just because it is face-to-face.

Technology now makes virtual communities possible, which facilitates contact and networking among distance learners and their instructors (Raymond, 2000; Sherry, 1996). “Distance education systems now involve a high degree of interactivity between teacher and student, even in rural and isolated communities separated by perhaps thousands of miles” (Sherry, 1996, paragraph 17). Connectivity can be sustained, and real-time interactivity is now a common feature of distance education programs (McNabb, as cited in Sherry, 1996). For example, Web-based chat rooms and discussion forums effectively facilitate interaction (Mangan, 2001; Wardrope, 2001). Group interaction, and community building, can be accomplished through collaborative problem-solving processes (Eisinger & Smith, 2000). In addition, Brownson and Harriman (2000) identify on-campus residencies as an effective strategy for providing needed interaction with instructors and fellow students. Similarly, student facilitators and other personnel can work in concert with teachers to provide instructional support to distance learners (Guzley, Avanzino, & Bor, 2001).

What other concerns exist regarding the quality of distance learning programs?

Interactivity is only one feature by which the effectiveness of distance education is judged. “People contemplating distance education and critics are not sure that distance education offers the same quality as does traditional classroom-based education” (Brownson & Harriman, 2000). Sherry (1996) suggests that too often, technology dimensions take priority over student learning needs. While this is currently less of a problem, it still exists (Ponzurick, France, & Logar, 2000).

Many educators believe that universities pursue distance education merely for revenue generation in an era of competition for student enrollment. Dyrud (2000) notes the criticism lodged at universities for creating “digital diploma mills.” Critics warn of the commercialization of education through distance programs (Emmons, 1999). However, quality varies with all educational options, not just with distance programs (Mangan, 2001). Kerka (as cited in Ponzurick, France, & Logar, 2000) asserts that advances in technology have resulted in more robust delivery methods for distance programs. In fact, Eisinger and Smith (2000) argue that distance learners are not bound by traditional classroom textbooks and the limits of the instructor’s knowledge.

What is being done to address the concerns regarding quality?

Nash (2001) notes that several accreditation bodies have developed quality standards for creating and assessing online programs. Emmons (1999) predicts that standards will continue to emerge as the distance education field expands. Ironically, some distance education programs reject accreditation because they object to the standards, the accrediting process, and what they perceive to be a bias against nontraditional education programs (Emmons, 1999).

How do students respond to distance approaches?

Student satisfaction is another indicator of the quality of distance education. Indeed, student satisfaction is critical to learning (Guzley, Avanzino, & Bor, 2001). Dyrud (2000) cites Clow’s study of students who felt that distance classes required more time and work than traditional classes. The students also reported higher difficulty level in the distance courses. Hara and Kling (as cited in Dyrud, 2000) found that students experienced communication anxiety as well as frustration with interactions, technical glitches, and uncertainty about expectations.

Despite these criticisms, Emmons (1999) posits that distance programs tend to be more consumer-focused, since they attract adult students who are typically more assertive than their younger counterparts. As a result, program offerings tend to be more organized and more focused on student satisfaction. Consumer focus in education is deemed important due to increasing competition for students. Market-savvy students are making informed decisions about education and looking for educators to be sensitive to diverse learning needs (Hankin, 1999).

Can students adequately maintain their motivation to learn in a distance program?

Wardrope (2001) asks whether distance learning experiences can sufficiently motivate students. Indeed, dropout rates reflect lower student commitment among those enrolled in distance programs (Dyrud, 2000; Emmons, 1999). According to Dyrud (2000), the most likely reason for noncompletion appears to be student procrastination over assignments. In addition, distance learners are susceptible to information overload due to the volume of e-mail messages and course materials that make up their program. Furthermore, Dyrud suggests that distance learners have fewer supports than traditional students, who can access advisors, tutors, academic counselors, and other campus resources when needed.

Proponents of distance education suggest that the lack of a live instructor may actually generate student motivation. Indeed, motivation is less dependent upon the instructor and more related to the level of challenging media (Guzley, Avanzino, & Bor, 2001). Given the instructional dynamics, distance education appears more suited for mature learners who are self-starters (Lewis, as cited in Dyrud, 2000). Emmons (1999) concurs that distance education requires self-regulation on the part of the student. Learners used to traditional classroom settings may be reluctant to participate in distance courses (Eisinger & Smith, 2000).

Can any subject be effectively taught in a distance format?

Wardrope (2001) argues the importance of communication skills in the workplace and questions whether distance approaches, which can result in social isolation, provide sufficient opportunity to develop interpersonal relationships and associated skills. Emmons (1999) questions whether distance education can teach students critical skills such as thinking on their feet and verbal persuasion. Emmons suggests that the lack of immediate feedback from instructors affects student progress in skill acquisition. However, Rosenbaum (2001) argues that the ever-expanding, interactive, multimedia environment offered by distance education promotes individual skill acquisition and group learning. “Research has repeatedly shown that the at-a-distance instructional mode itself has no significant effect on how well a student learns, as long as the technology works well with the coursework and all of the students in the class have access to the same technology” (Emmons, 1999, paragraph 13).

What about costs?

Wardrope (2001) cites economic advantages to distance education for students. However, organizations shouldn't erroneously attempt distance education as a cost-saving strategy. Peek (2000) cautions that distance education is an expensive and risk-filled venture for universities. Even when organizations strive to make distance courses more affordable than face-to-face classes, technology drives up costs (Emmons, 1999). Educators face initial investment costs when developing or converting e-curriculum (Eisinger & Smith, 2000; Rosenbaum, 2001). Nevertheless, there are now more options for curriculum development and delivery. Application service providers and the emergence of similar resources have decreased costs and expanded development opportunities for distance education providers (Eisinger & Smith, 2000).

How do educators feel about distance learning?

Perhaps distance education's harshest criticism comes from educators. Dyrud (2000) suggests that some educators are made to feel like "drones" in the diploma mill business. They complain of a loss of professional autonomy, academic freedom, and intellectual property rights. Dyrud suggests that distance education may be likened by educators to the creation of Frankenstein's monster, "brought to life by science, technology, and a belief in its efficacy" (2000, paragraph 33). Distance education is specifically criticized for taking time away from teaching. Instructors must put in more time for course development, preparation, and technology-related tasks. Interacting with students is reported to be more time consuming. In addition, distance education requires instructors to adapt to new methods, and there is little to no compensation for time and effort (Dyrud, 2000).

How do educators make the shift?

Raymond (2000) challenges academicians to redefine their roles and their pedagogical perspective. Distance education has "called into question the need for change in both teaching techniques and the role of the instructor" (Guzley, Avanzino, & Bor, 2001). The instructor must shift from being a dispenser of knowledge to being a facilitator and information navigator who supports students in their learning journey. Worley (2000) cites Campbell's contention that the learning strategies are more important than the delivery method.

Worley (2000) notes that pedagogy has been under a paradigm shift, as evidenced by the emergence of student-centered approaches and problem-based learning. For Worley, the appropriate question is "How is learning facilitated?" Sherry (1996) posits that educators must pay attention to the characteristics and needs of individual learners, including their aims and goals, mode of learning, and support. Eisinger and Smith (2000) propose that distance educators can effectively conduct individualized assessments of learners and accommodate students by offering a wide range of learning opportunities.

If studies support the effectiveness of distance education, why all the discord?

One simple explanation is that distance education shares its roots with correspondence courses (Brownson & Harriman, 2000; Emmons, 1999; Mangan, 2001). While this history enables supporters to assert that distance education is not new, the association with "degrees by mail" undoubtedly creates a stigma. Unfortunately, many less-than-credible correspondence schools now call themselves distance education (Emmons, 1999).

However, the resistance to distance education reflects a much larger paradigm shift. Spira (2002) suggests that those who resist distance education may be viewing education from an essentialist perspective, whereby the student is treated as a passive receptacle for information from the instructor. According to Spira, the essentialist perspective stands in stark contrast to progressive education approaches that stress student engagement in the learning process. Similarly, Sherry

(1996) advocates a constructivist approach to learning, which focuses on constructing knowledge through interaction and the application of concepts in contexts important to the learner. Ferguson and Wijekumar (2000) promote the use of approaches based in cognitive flexibility theory, which give students the opportunity to apply knowledge to real-life cases. Web-based environments support student engagement in knowledge creation and contextual learning. Nonetheless, such approaches differ from traditional pedagogy.

How, then, can distance education be compared with traditional education?

Ultimately, distance educators cannot mirror or try to replicate the traditional classroom experience. Attempts to do so will always fall short, because quality is measured in pedagogical terms. Erhman (as cited in Worley, 2000) contends that comparing technology-based education with traditional education is unnecessary. Such comparisons assume that the traditional approach is a “uniformly successful and proven standard” (paragraph 18).

Will distance education become more accepted in the future?

Critics of distance education continue to offer much anecdotal and empirical evidence that indicates “brick” is preferable to “click” (Dyrud, 2000). Conversely, the National Center for Educational Statistics indicates, “Distance education is just as effective as traditional instruction in terms of outcome” (as cited in Eisinger & Smith, 2000, paragraph 15). Perhaps distance education will enjoy a gradual increase of acceptance as more graduates are produced with quality educations. Even now, successes continue to enhance the credibility of distance education programs (Beller & Or, as cited in Guzley, Avanzino, & Bor, 2001). Ultimately, the key is to design effective educational programs centered on learner needs.

Guiding Principles for Distance Education

The use of distance education is not new to education or training. However, what is changing is the very nature of the learning opportunities. Access and availability no longer impede us. The advent of the Internet and the explosion of technology that is available and accessible for every person in every community change the very landscape of our educational endeavors. Based on these changes and the increasing opportunities, there is a need to operate from a set of guiding principles. These principles apply to both distance education and traditional education. As cited previously, there is a blending of the principles and technologies between distance and traditional education.

These principles are addressed in three categories: learning-based, learner-focused, and systems-based guiding principles. The synergistic relationship between these three sets of guiding principles serve as the basis for distance learning and the systemic infusion of education and training experiences for rehabilitation practitioners, administrators and consumers. Consideration for the educator and developer are imbedded in each of these sets of principles. The challenge for the educator and developer is to ensure that these three groupings are designed in a manner that maximizes learning, increases opportunities and expands access and content. These principles

are truly dynamic and must be continually the focus of the educational and training opportunities.

Learning-Based Guiding Principles

The learning-based guiding principles include the following:

1. A sense of community and personal relationships directs the use of technology and the design of adult learning strategies. Therefore:
 - Technology is a tool for learning
 - Technology supports the learning.
 - The learning community (within the group and the larger community—rehabilitation) is critical for all distance education efforts.
2. There is an organizational commitment to prepare, retain, and advance qualified rehabilitation practitioners and administrators. Therefore:
 - Educational, instructional, and research efforts must contribute to existing body of knowledge.
 - Accept a leadership position for education, research and professional standards.
 - Expect equivalent outcomes between traditional campus and distance programs.
 - Ethical principles must be maintained with all modalities of learning and professional development.
3. There needs to be a commitment to increased accessibility, which allows diversity of learners and a diversity of learning experiences. Therefore, all forms of education and learning must accommodate the expectations and needs of diverse learners, including
 - Diversity in learning styles
 - Diversity of cultures
 - Diversity of physical and cognitive ability
 - Diversity in geographical locations
4. There needs to be a commitment to currency and relevancy of the knowledge of and commitment to personal and professional development. Therefore, education and learning must:
 - Focus on lifelong learning—not just individual education and training experiences
 - Be based on sound andragogy including self-directed / learner-centered opportunities, commitment to adult learning principles, continuous and ongoing learning for learners and educators

Learning-Focused Guiding Principles

The learner-focused guiding principles specifically address the adult learner, the adult educator and the opportunity for choices in learning. In the modalities of distance learning, as well as most adult learning environments, the locus of control and focus shifts from the

educator/instructor/developer to the learner. The learner becomes the focus of the educational experiences. In more traditional models, the focus is instructor-directed and controlled. This approach is designed to insure the learner has an equal role in defining the content, the learning experiences and the modes on instructional strategies.

To insure quality learner focused experiences there are five specific learner-focused guiding principles. These are applicable for formal academic learning experiences, continuing education and self-directed learning experiences for personal and professional development. These learner-focused principles are:

1. The learning community is an educational and organizational imperative for the learner. This learner-focused principle provides:
 - A sense of community and personal relationships that directs and guides the application and use of content, technology and adult learning strategies
 - A commitment to ongoing personal and professional development of all members of this learning community
 - The role of educator is to create a learning environment that facilitates learner development and growth
2. It is necessary to strive to insure the content and technology addresses the needs of the learners, the learning community and their respective circumstances. This principle encourages all adult learners to be:
 - Self-directed and self-paced learners
 - Members of the learning community assume increasing responsibility for their learning
 - The educator is a resource to the learner and provides opportunities for growth and development
 - The instructional developer uses multiple learning approaches to enrich the experiences and insure the adult learner maximizes the learning opportunities
3. It is necessary to increase accessibility that will contribute to a diversity of learners and a diversity of learning experiences. This principle encourages the adult learner to:
 - Be open for opportunities for nontraditional adult learners who because of personal or professional circumstances are unable to access the traditional educational experiences
 - Create a learning style and pace that enables all learners to have the opportunity to understand and use the content and information
4. It is necessary to support the creation of an inclusive teamwork ethic that contributes to and enhances individual and group learning and development. This principle fosters the use of
 - Learning communities within organizations and across organizations
 - Sharing of experiences and expectations
 - Learning strategies which enrich cross-functional development of each adult learner
5. It is necessary to develop supportive and challenging learning environments which value risk taking, inquiry, introspection, self disclosure, commitment to personal and professional growth, theoretical and applied knowledge acquisition, and integrative learning. This principle embraces
 - All of the tenets of adult learning

- Supports the critical skills of rehabilitation practitioners and administrators in the present and the future

System-Based Guiding Principles

While the learning-based and learner-focused guiding principles are essential, there must be system-based guiding principles to support the development, growth and support for practitioners, administrators and consumers. The approaches to the Comprehensive System of Personnel Development and the continual need to recruit, retain and upgrade rehabilitation personnel requires a system that reinforces and sustains innovation and does not detract and or impede change. The system-based guiding principles are:

1. Decision-making regarding adult learning experiences must be collaborative and inclusive. This principle must be:
 - Linked to the expectations of the learners
 - Linked to sound theories and content
 - Intertwined and must be fully supported in all learning experiences
2. All communication systems and mechanisms keep all members of the learning community must be informed to enhance teamwork and overall organizational morale/cohesion. The principle must ensure that since all learners and instructors are at a distance:
 - The importance of current, consistent and accurate information is essential
 - Every effort must be made to insure system integrity.
3. Replication and dissemination of acquired knowledge expertise and experiences with others should be encouraged. The principle requires that:
 - The learning opportunities and content should be shared among participating learners and their colleagues
 - The creation of an organizational climate that encourages sharing of knowledge and expertise
 - The system fosters the principles and values related to lifelong learning

Summary

Distance education, with its infusion of technology and learner-driven approaches, holds promise as the educational model that will respond to the changing needs of our knowledge-driven society. The educational community, sometimes aggressively and sometimes with great hesitation, has begun offering courses by distance. Nevertheless, perceptions about distance education are in a state of flux and will require further research, dialogue, and collaboration as education users, educational institutions, instructors, and learners grapple with the changes distance learning brings. The guiding principles for distance education serve as a point of convergence and provide an underpinning for future developments and refinements.

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3. Distance Learning: Structures and Approaches for Developing Courses or Programs

Some organizations may decide to offer distance education programs or courses themselves. Once such a decision is made, an organization must consider numerous planning issues. *No issue is more critical to the success of distance education than careful planning.* Many decisions can lead to unnecessary costs and delays. Anyone undertaking the development of a new technology-based distance education program should carefully review what others have learned; one such lesson is not relying totally on computer technology staff to make teaching and learning decisions.

A few of the decisions required of a university faculty member or vocational rehabilitation (VR) agency staff member are as follows:

- How much technology should be included in the effort?
- What hardware and software is commercially available to support the effort?
- What is the appropriate support system for both course development and user accessibility?
- What policy issues must be addressed to allow this new instructional strategy to be successful in the organization's work environment?
- Can the organization afford to use this approach to learning?
- Who will develop the course or program, and who will provide the instruction?
- Will learners elect to continue to participate in the instruction once it is developed and made available?
- Is the technology accessible?
- How can the effectiveness of this technology-based distance learning approach be assessed?

This chapter provides some answers to these questions.

Technology-Based Distance Education Models

Distance education has been available in the United States since the early 1900s. A review of this history is provided in Chapter 1. While professional training of VR counselors and other rehabilitation professionals is relatively new in this history, with a beginning in the 1950s, distance education strategies have been attempted since the early days of graduate education in rehabilitation counseling. Faculty and graduate students at the University of Iowa (Muthard & Miller, 1966; Miller & Obermann, 1969; Miller, 1970; Miller & Roberts, 1971) produced a series of monographs during the late 1960s and early 1970s entitled *Studies in Continuing Education for Rehabilitation Counselors*. This series documented previous efforts to educate employed VR counselors and studied intensively an in-service training package covering the critical knowledge areas of the profession. The package consisted of print materials and audiotapes, considered state-of-the-art technology at the time. Complete packages were placed at the disposal of state VR counselors in Iowa, Illinois, and Minnesota. Utilization of these materials was evaluated in a 5-year study, which included a control group. Results of the study indicated that when used, the print and audio material increased the knowledge of practicing VR counselors.

As technology has continued to develop, the tools of rehabilitation educators and trainers have expanded to include:

- Telephone conferencing
- Satellite uplinks and downlinks
- Cable TV system linkages
- Audiotape and videotape dissemination by mail

More current technological developments have produced:

- Telephone-based technology
- Compressed video
- Internet-based technology
- Text-based e-mail
- Video e-mail
- Internet access
- Text-based Internet resources
- Videostreaming and audiostreaming
- Desktop webcams
- Internet videoconferencing
- DVDs
- Threaded discussions (asynchronous)
- Virtual chats (synchronous)

Designers of distance education materials have an ever-increasing array of tools and resources to draw upon. The challenge is to decide how these tools can best meet the learning objectives for the instructional unit being developed.

Types of Internet-Based Courses

When considering the use of Internet-based technology for the development of educational/training materials and programs, the instructor must decide the type of course that best meets the prospective learners' educational needs. Obviously, the choices here are also limited by the costs, the available supporting resources, and the technological expertise of the instructor/ course developer. The professional literature describes the various course options as follows:

The phrase "course on the Web" means something to almost everyone, but it can conjure up very different images in the minds of academic decision makers, legislators, college presidents, and deans. If we hear a technically experienced faculty member say, "Oh, I put my EXE 1401 course on the Web last weekend," what does that mean? Some people may expect that all faculty can do this and that the entire course is on the Web. Often, however, only a few documents, such as a syllabus, bibliography, and course calendar are on the Web, and some of us may feel we will need a lifetime to put these few documents on the Web!

Managing expectations is difficult, but considering the three major types of Web courses may help:

A WebCourse is available anywhere, anytime.

A WebCentric course shifts the focus from the physical classroom to the Web as classroom.

A WebEnhanced course looks a great deal like a campus course but is strengthened by use of the Web.

In addition to these three types of Web courses, WebPresence describes a course that includes Web activity. While not a Web course, WebPresence content is very similar to what is now included in the traditional printed course catalog. All four types of courses are described in the following paragraphs.

WebCourse. A course that is truly and completely a WebCourse can be accessed anywhere, anytime via the Internet and a Web browser. The times and places for interaction and communication are flexible and generally asynchronous. There are few, if any, synchronous meetings. Any course today that is fully available on the Web generally makes use of one of the popular Web browsers, and the course experience begins and ends on the Web. All instructional strategies are planned and executed around the communication capabilities and content resources available on the Web.

The primary characteristic of a WebCourse, which it is fully available on the Web, means that the faculty member teaching the course and the students taking the course can participate from anywhere in the world. This also means, generally, that location-based activities such as class meetings or gatherings at physical seminars or conferences are not required.

Many distance learning programs make use of a slight variant of the WebCourse by focusing on students within a geographic area that would enable students to gather for a one- or two-day event in conjunction with a course. But the idea of a globally available WebCourse includes no requirement for students to gather physically anywhere.

Another feature of the complete WebCourse is that it makes significant use of Web technology and Web applications to support the teaching and learning that make up an educational experience. A WebCourse uses electronic mail, chat rooms, bulletin boards, and online conferences to support meaningful dialogue and social communication between and among participants, including faculty and students. The true WebCourse also uses Web applications to support the use of electronic resources such as databases, simulations, current news resources, course book sites, and digital libraries. These tools and resources help support discovery learning by individual students and among groups of students. The use of all these tools supports the creation of a learning community.

WebCourses can be cohort based, involving a group of students who stay together through a series of courses. WebCourses that are part of a series of courses are best if they are cohort based because the community and the relationships created during one course can continue and deepen during subsequent courses.

Many distance courses design “gathering” activities into the program to enable students and faculty to bond with each other in a learning community. Communicating with a person may be more comfortable in the digital environment if the participants have met and talked in physical space. The online synchronous and asynchronous communication activities support both social and intellectual networking and bonding. On-campus graduate programs often use these same social gathering strategies. For example, many intensive MBA programs have beginning and ending weekend socials that include spouses.

WebCentric course. A WebCentric course has made the paradigm shift away from the classroom as the primary site of organized instruction. As with WebCourses, the WebCentric course experience is likely to begin and end on the Web. The faculty member introduces the course on the Web and specifies what is to be done and learned, and with what resources, through Web communications. Testing and evaluation can be accomplished with examinations, projects, and reports. Like the WebCourse, the WebCentric course makes significant use of Web technology and Web applications to create an online community for teaching and learning.

With the WebCentric course, the center of instruction shifts from the classroom to the Web. However, a WebCentric course may have a series of scheduled synchronous meetings, possibly on campus or at a hotel or conference center. To meet the needs and convenience of working professionals, however, the length, frequency, and the content of the class sessions may be quite different from traditional on-campus courses.

Synchronous gathering activities for a WebCentric course generally take less than one third of the class time. Classes or meetings of a WebCentric course may total between 16 and 24 hours. This contrasts with the typical 45 hours of meetings, usually held in one- to three-hour weekly sessions over a 15-week semester. A WebCentric course may have one to three meetings, but each meeting may be five, six, or eight hours long. Class time is concentrated, reducing the number of times students must gather in a physical space.

WebCentric courses can also be cohort-based and can benefit from being so, but since they include more physical meetings, the cohort is not as critical a design factor. WebCentric courses may seem to be available only within a fairly limited geographic area, but this is not necessarily the case. Working adults will often travel farther if a particular program is available in a format that requires less frequent travel. WebCentric courses may include use of other gathering events such as intensive location-based launching activities, weekend seminars, and celebratory events. Depending on the frequency and length of class meetings, WebCentric courses can look a great deal like regular campus residency courses with heavy reliance on Web technology and tools.

WebEnhanced course. A WebEnhanced course, sometimes called a Web-based course, uses the Web to support a traditional campus course. Faculty use Web technology to present the usual course administration components such as the syllabus, bibliography of resources, course and project requirements, and project consultation. The Web is used to support the faculty-to-student dialogue and communication, often supplementing office hours with e-mail communication and interaction. The Web also provides access to content and dynamic resources easily available online.

Designing, developing, and delivering WebEnhanced courses can be an evolutionary step for many faculty, removing the dependency on paper-based and phone-based materials and on synchronous meetings and communications. A WebEnhanced course can help faculty members migrate from a dependency on a lecture mode of content presentation toward more interactive and collaborative learning. It can be an evolutionary step away from the current classroom-centric model and toward a WebCentric course. This can be an effective change strategy for both faculty and administrators. Moving to a WebEnhanced course provides a transition step from traditional models of classroom learning to the newer models of information-age learning. If this transition is done over time and with good infrastructure support, it can make the paradigm shift less costly. This is a good strategy if time and planning are available to support it.

If faculty members want to experiment with technology, the best choice is probably a WebEnhanced course. Moving to a WebEnhanced course is an attractive, low-cost strategy, but it is only “almost free” from an institutional perspective if this strategy is used by technologically savvy and experienced faculty with departmental resources behind the project. For most faculty, deciding to develop a WebEnhanced course requires a realistic look at the time and the resources needed to use this strategy effectively.

WebPresence. Developing a WebPresence for a course is much like creating a flyer or a brochure about a course or creating the description that might go into a college catalog. Some schools require that all course descriptions be available on the Web; such descriptions often include information about the course, instructor, requirements, and prerequisites for the course (Boettcher & Conrad, 1999, pp. 23-26).

Course and Program Development

Once the organization has made the commitment to Web courses and programs, the next step is to consider the resources required. Putting a Web course or program online will require special expertise during the development stage and a different set of skills and knowledge during the

teaching phase. During course development, the skills of a course development trainer, a course developer/instructor, a Web designer, possibly an instructional designer, possibly a graphic artist and a technical support person will be required. Once the course is ready for offering online, an instructor, webmaster/administrative coordinator, and technical support staff will be required. If the course has high enrollment, an instructional assistant may be required to assist with such duties as grading assignments and facilitating online discussions. Other resources will include ongoing administrative support, release time for course development, and software and hardware availability. Each part of the support staff is critical to the success of the program. Nothing can be shortchanged if there are high expectations for success.

Once all of the necessary resources are in place, individuals responsible for actual instructional development must consider what technology they should use for their course and how they will use the technology. All decisions on specific course development should be based on the learning objectives of the instructional unit. The learning outcomes specified for a course should determine what technology is utilized, rather than approaching the development by asking how the content or skill can be taught with the available technology. Technology will allow most learning objectives to be successfully met if the instructor is flexible and innovative. Many learning tasks require a modification of in-class instructional methods. Some tasks do not allow successful online modifications. An example may be the teaching of closely supervised counseling interviewing skills. Similar tasks may require a combination of the Web course and a WebEnhanced approach to teaching. Web-based instruction should not be rejected without extensive investigation of the potential approaches to online instruction that may meet a specific learning objective.

Online course development requires a much tighter organization of course content than regular on-campus classes. Because most online instruction utilizes asynchronous presentation of material, there are no opportunities for student questions to lead the instruction off on tangents or to eat up class time. The instructor must organize the course materials in a logical and comprehensive manner with fewer war stories. This factor alone may substantiate the research findings that support the effectiveness of online coursework given the potential limitation on face-to-face interaction. The presentation of material must be clear and concise. Humor should be part of the presenter's style.

During the planning phase of this new endeavor, a decision is made to offer most of a given course content either in a text-based or videostreamed format. Text-based instruction requires less technological support; takes a lot of writing time for the instructor to prepare the initial offering of a course; and presents accessibility problems for visually impaired and reading-impaired learners. Videostreaming requires more technology, including a production studio similar to that used in compressed video classes, and a technician to stream the video; is more user friendly for the course developer; is perceived by the learner as more of a "real class"; and presents more accessibility problems for hearing-impaired learners. The signals are carried over normal phone lines; while lacking in quality due to restricted bandwidth, they are quite serviceable and the costs are reasonable. A more complicated form of this technology offering better picture clarity and a higher cost is the use of satellite uplink and downlink capabilities.

Although very expensive for a small group, a satellite can be a reasonable alternative for large audiences at one or multiple locations.

Whether text-based or videostreamed instruction is used, once a class is presented online, it is easily modified or updated for future offering. While there may be some advantages to videostreaming, both approaches appear to be successfully meeting the needs of VR practitioners. The choice of which venue to utilize is up to the organizational leaders and course developers.

In addition to the traditional online course offering, two-way desktop video and videoconferencing methodology are beginning to be used to supervise practicum and internship coursework at a distance. Business-grade hardware and software are becoming affordable and provide high-resolution picture and quality sound for Internet-based person-to-person interaction. Eventually, similar technology will reduce the lack of immediate interaction between instructor and student that some people find as a concern with Internet-based course-work, especially in the counseling field.

A growing resource is the availability of the online library. Most universities now have some form of online library and support services to assist students in accessing professional literature and research. Extensive resources are being developed at the state level in some states. For institutions of higher education in states that are members of the Southern Region Education Board, the Georgia state online library, Galileo, is available free through the state's higher education coordinating body. Similar consortia arrangements for online library services likely exist in other regions of the United States. Special sections of various library services provide access to rehabilitation literature, including ERIC:AskERIC, Lexis-Nexis, Academic Universe, ProQuest, and Wilson OmniFile. Some of these sites provide the full text of articles, while some provide only abstracts.

Use of Course Management Software

Once the concepts and plans for the distance education course are in place, technical implementation begins. An important implementation tool is course management software. Typical Web course management software includes the following tools:

- Course announcements
- Customized course look and feel
- Quiz/test construction
- Grade reporting
- Timed online quizzes/tests
- Access to current grades
- Questionnaire construction and delivery
- Calendar
- Course syllabus/outline

- Electronic mail
- Chat room
- Asynchronous discussion list
- Student information page
- Personal website (student/instructor)
- Progress tracking
- Student management
- External linkage
- Information upload ease
- Course backup

In addition to providing an organizational structure to Web-based courses that facilitates access by learners, course management software facilitates the creation of course material. Because of the tools built into a course management system, course developers do not need to know computer programming. However, they will need instruction in how to utilize the various tools available to them within the course management system. Some course management programs require the user to learn HTML, a software language used to create internal operations directions. Some commercial programs like Blackboard allow the user to utilize Web links and other features rather than requiring this technical skill. This is a great plus for faculty and staff developing Web-based courses.

Most university faculty and agency personnel development staff have been reluctant to initiate online course development because of their limited experience with technology. A user-friendly course management system accompanied by training in its use can overcome much of this reluctance. To accomplish this goal requires an understanding and supportive administration that provides the hardware, software, and technical support in a way that is as unthreatening as possible. Selecting the right course management system with training that limits the technical discussion to the bare minimum will facilitate this transition to online programming.

Among current online rehabilitation counseling degree programs, San Diego University and its program partners, North Texas State and Georgia State, as well as The George Washington University and Utah State University developed their own course management software. Auburn University uses WebCT, and the University of Arkansas at Little Rock and Texas Tech University use Blackboard. Development of the software, however, is only one element of the technical implementation. Therefore, it is important for institutions to consider whether in-house development or contracting arrangements are most suitable for them.

Costs and Benefits of In-House Versus Contracted Web Course Development

When considering the resources required for Web course development, most universities and agencies begin by thinking of how best to utilize existing staff and equipment. This approach will most likely lead to a significant additional investment in staff, hardware, and software. Such

an investment may be the most practical approach for large organizations that will have an ongoing need for this expanded organizational capacity. However, many smaller organizations do not have the dollars or personnel to put all required services in place within their organization. These organizations may be well served by looking outside their organization for a vendor. A discussion of the costs and benefits of the in-house and vendor approaches follows.

In-House Program Development

The major advantage of developing distance education programs in house is the control given to program developers: they control the goals of the program, the developmental issues, the techniques, and the materials. It can be a custom fit. There are no major intellectual property concerns, and the employees involved can troubleshoot, change the content at will, and tailor the programs to local needs.

The major disadvantage is the need for such employees to develop the expertise, which involves a steep learning curve and removes them from other duties. As instructional technology expands and improves, curriculum design specialists will spend increasing amounts of time staying abreast and developing new strategies. In other words, this is time-intensive, and it is not 8:00 am to 5:00 pm work. Servers go down, Internet connections go out, and materials are miscued at strange hours, and the staff who oversee this process have to be available. Even on the front end, program development does not fit into regular work hours. Some of the work may have to be performed from home. It is challenging and exhilarating work for those who enjoy these types of challenges; it is tedium and misery for those who do not.

In addition to understanding program content, curriculum developers are expected to know and learn about computers, the Internet, Web page design and modification, instructional techniques, and software. Thus, the work requires either staff with specialized backgrounds or rehabilitation staff who are willing to devote major amounts of their time to learning. At the core of development is an idea person who has permission to allocate human and monetary resources to quickly solve problems and forge new directions. In addition to their role as developers, the distance education development staff have to serve as support personnel for the learners with personal and technical problems. It has been noted that the higher the technology used in the delivery of materials, the higher the touch that is needed to provide sym-pathetic support to the end user. This is key to making distance education work because problems will arise, and good, caring assistance is needed to aid in their solution. Thus, a development team must have strong technical people and strong human relations people with technical expertise. With any major program development, an agency or university will be hiring at least two full-time people to devote to this mission.

The mission may be well worth the cost of two people, the equipment, and the software when programs with seamless integration are offered using modern delivery techniques and the users realize how wonderful it is to access the knowledge they need when they need it.

Outsourced Program Development

While the amount of work and many of the costs will be the same whether the organization uses in-house staff or outside vendors, the use of outside vendors may be a better solution for smaller organizations, especially agency personnel development units. Although an outside contract may result in the loss of total project control, it may be worth this concession for an improved product. Outside vendors can provide many services, including the following:

- Staff training
- Software selection
- Web page development and webmaster services
- Software site licensing
- Host server services
- Instructional design advice
- Computer programming
- 24-hour-a-day user support services
- Program advertising and promotion advice
- Ongoing assessment of new product development
- Hosting of videoconferencing software

To successfully utilize the wide array of potential outside vendor services, the organization's planning team must know what services can be provided in-house and which are needed from the vendor. Some vendors, like e-College, will take an instructor's material and organize it with their proprietary software. Others, like Blackboard and WebCT, provide the frame for organizing the materials within their software and put the organizational control of all instructional content into the hands of the faculty or staff member. One of the drawbacks of utilizing a proprietary system like e-College is that when an organization's contract expires, it gets back only the original instructional materials provided to the vendor. With systems that allow the instructor to maintain control of the course development, the instructional materials remain within the control of the developer.

Because the organization negotiates a contract with the outside vendor, it has the option of selecting only those services that are needed. Utilizing an outside vendor has additional benefits as well:

- The organization can replace the vendor if services are not satisfactory.
- The possibility of hiring staff who become outdated is eliminated.
- The problem of losing experienced technology staff to higher-paying private employers is overcome.
- Server downtime and learner support services are improved. University and state servers are notorious for crashing. Student and faculty technology support services typically are shared

across the organization and may not be readily available to individual Web course participants.

- The vendor continually monitors new instructional technologies, allowing the organization to keep up in this ever-changing field. Most universities and agencies do not have staff who can keep up with such technological changes.

A significant additional benefit may be cost savings. One of the university graduate programs in rehabilitation counseling uses an outside vendor for most of the services listed above for a cost of \$55,000 per year—about the cost of one in-house technology staff member. This price includes services to 300 students enrolled in 45 clock-hours of instruction utilizing videostreaming as the primary content delivery method. Videostreaming takes more technical staff time and more server space than text-based instructional materials. Using this example as a guide, agency professional development units should be able to develop an outside vendor contract for considerably less expense.

The primary challenge of this approach to program development lies in contracting with a quality, reliable vendor who is willing to work collaboratively with the Web course faculty/staff. The upside is that if the relationship doesn't work, the organization can get out of the contract and find a new vendor or start providing the services in-house. Because the possibility of a poor working relationship always exists, contracts with vendors should usually not exceed 2 years. Other challenges may include getting vendor contracts approved through the university or agency, especially with out-of-state vendors; identifying funding to initiate a contract; and finding a quality vendor.

Accessibility

Once the decision is made to develop a Web-based program or course, especially within a rehabilitation-based unit, accessibility becomes a paramount consideration. *The instruction must be accessible for all students.* The course developer must ensure that all instructional materials are equally accessible to learners with disabilities, as well as all other students. Accessibility for all students is covered here; accessibility specific to individuals with disabilities is covered in Chapter 6.

Issues of accessibility for all students include the availability of the instruction, compatibility of hardware and software, reliability of Internet provider and program server, standardization of course organization, and availability of support services and learner computer skills.

Course management software as described earlier can provide part of the solution for accessibility issues. Placing course material within a course management system allows instruction to be offered synchronously (live with all students present) or asynchronously (instructional material available 24 hours a day and utilized when the student wishes). If such a system is used with all courses, learning materials can be organized in a standard way. This standardization ensures that once the learner has grasped the format, he or she will know where to find material in future offerings. A common course management system minimizes the need for large computer storage space for the learner because the management program and

instructional content remain on the program's server and need not be downloaded to the individual learner's computer. In addition, most course management systems require little additional software beyond a word processing program. If the instructional materials include videostreamed material, additional Internet media software like RealPlayer or Windows Media Player may be required. Learners can access this material through the course management system using various types of computer operating systems such as PC-DOS or Macintosh.

Because the hardware required for an online course offering is somewhat dependent on the requirements of the instructional package, it is recommended that each organization publish minimal hardware requirements for its programs or courses.

Learner computer knowledge is another access issue. Organizations may decide to set minimal standards for prospective learners. Based on the experience of existing rehabilitation education Web-based instruction, it appears that this issue is more problematic for instructors preparing an isolated new online offering than it is for systematic, programmatic curricular offerings. An individual instructor may not have had the planning time or technical support to consider the user skills necessary for participating in the instructional program. Rehabilitation faculty offering complete graduate degree programs online have found that it is sufficient to present with the first course a short print or verbal orientation that requires learners to apply the various skills required to complete the coursework successfully. Minimal skills required by most Web courses include the ability to add an attachment and send e-mail messages, use a word processing program, copy and paste document content, and use hyperlinks. These are not tremendously complicated skills and can be taught very easily within the first few weeks of enrollment for inexperienced learners. Fortunately, most employed rehabilitation counselors and new graduate students entering an educational experience have been utilizing these skills in their employment or educational program, so they have not had trouble demonstrating the requisite skills. This level of computer sophistication may not exist for other fields of endeavor.

A significant accessibility issue for most Web courses centers on the Internet service provider the learner selects. For most online courses, the faster the Internet connection, the more reliable the access to Web-based material. This is especially true for videostreamed instructional materials. While 56K dial-up modems work effectively with most online coursework, a DSL, cable modem, or T-1 connection works the best. Of special interest is the quality of the service from the Internet provider. Some providers allow users to work within online documents for only short periods before disconnecting them. This can become very problematic during a long reading assignment for text-based instructional materials or for online examinations. Providers sometimes compress e-mail information when several e-mails back-up in the user's mailbox. This can cause extra time in accessing information. Some mailboxes also have a small capacity and will reject mail when that limit is reached.

The issue of quality support service is dependent upon the quantity and quality of personnel available to support the Web-based offerings. An organization must have the needed resources in place to support the Web-based work planned. As mentioned earlier, it may be more

economically feasible for small organizations to contract with an outside vendor for these services than to depend on in-house support.

Even when the Web-based program or course is generally accessible to most learners, additional accessibility issues must be addressed for persons with disabilities who might wish to participate in the instruction. Potential disability-specific accommodations are discussed in Chapter 6.

Course Evaluation

Regardless of the distance learning activity, evaluation processes need to be incorporated to improve the quality and effectiveness of teaching and learning.

A study commissioned by the National Education Association and Blackboard Inc., an Internet education company, identified 24 benchmarks essential to ensuring excellence in Internet-based distance education. These benchmarks are based on those developed for all types of distance learning (Institute for Higher Education Policy, 2000). The benchmarks for evaluation and assessment are as follows:

- The program's educational effectiveness is measured using several methods.
- An evaluation process is used to improve the teaching/learning process.
- Specific standards are in place to compare and improve learning outcomes.
- Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness.
- Intended learning outcomes are regularly reviewed to ensure clarity, utility, and appropriateness.

These benchmarks, which are accepted by a number of accrediting organizations, can serve as guidelines in developing evaluation strategies and are addressed by the Council on Rehabilitation Education (CORE).

Evaluation Process

Both course evaluation and program evaluation can be classified into two broad categories: process or formative and outcome or summative. Process or formative evaluations focus on improving the quality of the course or program by identifying strengths and weaknesses during development and delivery. In education the purpose is to examine and assess the implementation and effectiveness of specific instructional activities in order to make adjustments or changes in those activities. Outcome or summative evaluations assess whether the stated objectives were met after development and delivery. In most situations involving distance learning, both process and outcome evaluations are incorporated into the same effort. In this manner, one can determine the effect (or outcome) of a program of instruction and also understand how the program produced that effect and how the program might be modified to produce that effect more completely and efficiently.

Course Evaluation

The best way to test instruction is through participant evaluation. Learners are the best test audience, but peer review of the instructional materials and strategy is also effective. Formative evaluation—evaluating instruction as it is developed and delivered—allows for revision and improvement as the course evolves. This process helps to more effectively meet the needs of the learners. Critical commenting of peer review and developmental testing are two methods of evaluation in the development stage (Woodley & Kirkwood, 1998). Peer review sessions are used at the Royal Melbourne Institute of Technology (McNaught, 2002) to improve the quality of online courses. Instructors gather in a computer lab, review the online course, and have an open discussion. The peer review process enables the design team of the course to receive feedback and allows others to discuss new strategies that might apply to their own teaching. Developmental testing involves testing the courses as pilots with small groups in order to discover problems in the course content and to prepare the instructor.

Summative evaluation follows course delivery. Feedback from the students helps the instructor develop revisions for subsequent courses. Questionnaires and student interviews are two primary methods of collecting this information. One important area that should be addressed is the instructor-student and student-instructor interaction (University of Illinois Faculty Seminar, 1999).

Cultural differences also need to be considered in a course evaluation. Some cultures discourage candor with an authority figure such as an instructor. “People from more hierarchical and/or risk-adverse cultures tend to be less comfortable with directly giving feedback that might be perceived as negative” (Bailey, 2002, p. 4). In the electronic media where visual cues are cut off, it is especially important to recognize differences in cross-cultural communication. Bailey recommends the following:

- Get to know the students or participants prior to the course presentation.
- Ask questions to assess information transfer. It is sometimes better to gather responses by using whiteboards than by asking open questions.
- Have a private exchange with a few participants to be sure they are getting the most out of the course.

In distance learning, the overall teaching and content areas need to be addressed as well as the instructional materials and media employed. The Institute of Electrical and Electronics Engineers, Inc. (2002), a nonprofit, technical professional association, has developed a checklist for evaluating distance learning instructional materials, which is as follows:

- Materials are appropriate for defined performance objectives.
- Materials include adequate instruction for required skills.
- Material is sequenced logically and chunked meaningfully.
- Materials are clear and understandable.
- Materials are relevant to learners’ needs.

- The media employed encourage efficient management.
- Materials allow adequate opportunity for practice and constructive feedback.
- Assessment items are relevant to performance objectives; test items test required behaviors.

Methods of collecting information include e-mail, telephone surveys, focus groups, and questionnaires. Tools are also available online to assist in gathering information to improve instruction. Most of these tools are commercially developed, enabling the instructor or evaluator to configure the tool according to his or her particular needs. Several of these available tools are available online, as listed in the appendix.

Program Evaluation

For university-accredited distance education programs, CORE requires a systematic, periodic written evaluation plan and a review of the overall effectiveness related to the program mission and objectives. Program evaluation should include both self-evaluation and external review by others, such as the advisory committee and the institution in which the program resides. It should cover the appropriateness of the program's objective, the design of the curriculum, the effectiveness of the clinical experience, the achievement of program graduates, the recruitment and retention of students, program support and resources, and faculty qualifications and performance. The review of mission and objectives should be communicated to institutional administration with recommendations for improvement and should be included as part of the CORE-required self-study (CORE, 1999).

One method used by the Royal Melbourne Institute of Technology is the course experience questionnaire, which is a summative measure of overall program and teaching quality (<http://www.teaching.rmit.edu.au/progimprov/ceqdescr.htm>). This performance indicator measures students' learning experience in the areas of teaching, expected standards, assessment, workload, and development of generic skills, and has one question about overall satisfaction with the program.

Regardless of the distance learning activity, a well-planned, systematic program evaluation is needed to guide distance learning efforts and to build mechanisms for providing corrective feedback. In distance learning, data that are often used in program evaluation include student demand, student retention, student satisfaction, faculty satisfaction, student achievement, access provided to students not previously served, appropriate use of library and learning resources, and financial efficiency (Institute for Higher Education Policy, 2000; Commission on Institutions of Higher Education, 2000). The following questions are guidelines to use in developing the evaluation strategy:

- What is the purpose of the evaluation?
- Who will use the evaluation, and how will they use it?
- What questions will the evaluation seek to answer?
- What information is needed to answer the questions?
- What resources are needed?

- What sources of information will be used?
- What data collection method(s) will be used?
- How will the data be analyzed?
- How will the evaluation be communicated and shared?

Future Implications

Research indicates that the important factors in distance education are the content offered and equal access to the technology among participants rather than the instructional format (University of Idaho, 2001). Good distance learning practices are fundamentally the same as good traditional teaching practices. However, additional research is needed to address future challenges faced in distance learning. For example, courses and programs are available to many individuals who might not be reached without distance education. This increase in the number of nontraditional students needs to be examined and their unique needs incorporated into distance learning practices. As more global offerings are available, other considerations must be addressed, such as the provision of CRC supervision in differing countries. Although some of the rehabilitation education programs offering courses and degrees via distance learning are listed (<http://www.nchrtm.okstate.edu/index>), the number of rehabilitation education programs and students enrolled in them has not been thoroughly investigated.

Ethical Issues

Ethical issues in distance learning can be categorized into four areas: privacy, accuracy, property, and accessibility. Many of the emerging challenges discussed in distance learning education such as ownership of the course and materials, professional ethics, equitable access for all students, student and instructor confidentiality, propagation of computer viruses or worms, and inappropriate messages fall within these categories. The potential misuse and abuse of Internet learning requires that distance learning sponsors develop ethical guidelines for working with instructors and learners. Several resources for developing such policies are listed in the appendix.

Summary

The obvious tasks involved in making a course available through distance techniques—such as reexamining course content and choosing technology to meet learning objectives—are only the tip of the iceberg. Planning a distance strategy requires extensive planning, including careful examination of appropriate hardware, software, staffing, and infrastructure support, as well as accessibility and plans for assessment.

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4. Distance Learning: Implications for Organizational Leaders

Administrators of vocational rehabilitation (VR) agencies are responsible for establishing direction for the agency, managing costs and resources, and assigning staff responsibilities. They must consider these factors when making decisions about distance education and determine whether distance education is congruent with the agency's vision, culture, and needs.

A first consideration is the agency's primary goals and expectations. Is the agency interested only in specific skill development, viewing training as a requirement to help employees meet basic minimum standards in their jobs? Or is the agency focused on developing its employees and improving staff morale, viewing education as a benefit for the employee that also improves the organization?

For the more limited goal of meeting minimum standards, distance learning may be a tool to avoid travel and reduce training costs. For the broader goal of developing employees, administrators may want to consider a number of less obvious benefits:

- Distance learners can complete coursework at their desks in smaller time increments, affording them more time to meet caseload responsibilities, and can immediately apply course information to their work.
- Offering greater learning opportunities can be a powerful recruitment tool for the agency at a time when recruitment of VR professionals is a priority due to the challenges of an aging workforce, stringent federal mandates, and shrinking graduate programs.
- Distance learning may allow agencies to work more closely with universities and colleges. Expanded internship opportunities may be available for rehabilitation students, offering agencies a greater number of students to consider and offering universities more opportunities to provide hands-on learning.
- Distance learning can promote leadership and staff development. New mentoring opportunities are made possible, and line staff pursuing management training can be

encouraged to apply for higher-level positions in the agency. Agencies can also work with educational providers to develop a managerial curriculum specific to their needs and to provide access to this material directly on employee workstations. Universities with distance learning may have “fast-track” programs that help VR professionals work towards graduate degrees or obtain the appropriate level of certification.

Once convinced of the value of distance education, administrators still need to fit it into the culture of the agency, plan for the technical and financial investments that are required, and steer staff toward the most credible programs. The following sections cover these topics.

Cultural Considerations

Counselors who hold full-time jobs, have personal responsibilities, and have the additional responsibilities of ongoing education face significant stressors. It is not unusual for adult learners to have a variety of fears and to question their ability to return successfully to an academic environment. Although the responsibility for success lies ultimately with the learner, the rehabilitation agency can do a number of things to support and prepare counselors for success. Such actions also concretely promote the value of education within the organization. If the organization does not have a culture that supports educational growth for its staff, education in any form will not be valued or taken advantage of by VR professionals.

Organizations must recognize the implications of distance learning compared with a traditional training environment. VR agencies typically have walled offices and/or cubicles for rehabilitation administrators, counselors, and support staff with work days structured from 8:00 am to 5:00 pm. Training and education have traditionally taken place away from the office in a classroom setting, with student-employees unavailable for office coverage for days. Until recently, education in the workplace tended to focus on providing new employees with large amounts of information during a single intensive period, after which time learning was considered complete and casework became a sole priority. While continuing education has been a longstanding requirement to maintain professional licensures and certifications, increasingly sophisticated communication technologies have necessitated lifelong learning, and many training programs within agencies have reflected this need.

Organizations that closely monitor employee use of time may require a greater cultural shift to allow more flexibility to students enrolled in distance courses. Some agencies have developed release time policies for students involved in distance learning on-site; others extend release time options to off-site locations; while still others have implemented flex time or telecommuting options to enable staff to attend courses. Human resource departments have had to develop new ways to track training hours, since the flexible nature of distance learning allows students to spend as much or as little time as individually required within a specified period, such as a semester, to master content. Agencies may also have to differentiate between types of training: some agencies allow more flexibility or office time for training for certain mandatory coursework but do not make these provisions for courses taken for personal development.

Regardless of the policy chosen, administrators are faced with the challenge of balancing time for training and education with office coverage and uninterrupted service to consumers. Additionally, staff not participating in training may view these opportunities as a benefit for the trainee that creates additional responsibilities for them. While initially Internet-based distance education seems to be an obvious solution to reducing time out of the office for training and travel, the agencies' degree of support for the use of time in the office to enhance professional development will influence how readily distance learning environments can be created and maintained.

Employers in general, and not just rehabilitation offices, are adapting to employees learning in the office. Supervisors, receptionists, and coworkers may feel at liberty to interrupt the learner, even during a time that has been agreed upon as acceptable for coursework. The agency can support counselors who need office time for distance learning by encouraging supervisors to implement policies similar to those that might be in place if the counselor was at agency-sponsored classroom training, including instructions regarding phone messages and other potential interruptions. Other attitudes related to basic workplace activities, such as use of space, respect for privacy (including how common it may be for employees to work behind closed doors), and typical social interactions influence the ability of learners to create an effective in-office learning environment. Administrators, supervisors, and managers must set, model, and enforce new behavioral expectations in order to foster respect for distance education and an environment that is conducive to learning.

Agencies are often able to provide a variety of logistical supports at the office. It is becoming difficult, if not impossible, for counselors to properly serve clients without access to the Internet and e-mail. These tools at the office can be available to counselors for distance learning. Clearly, one of the attractions of distance learning is the ability to complete coursework early in the morning or late at night when the needs of job and family are not so strong. However, the student without a computer or reliable Internet service provider at home may find it necessary to use agency equipment. If the counselor has access to an agency laptop that can be checked out from the unit, it may be possible for the distance learner to have agency-provided computer support available for study even in the off hours. Agency policy and supervisory support can make this possible.

When unions are part of the culture, agency leaders and human resource personnel must work together to create agreements with these unions regarding the impact of educational requirements on work conditions to ensure that employees are not conflicted with developing professional skills and negatively impacting others' work situations, seniority, or security. Human resource personnel may also consult relevant state and federal laws that apply to employees who attend agency-supported training outside of standard work hours.

Financial and Technical Considerations

What is the value equation for distance education? When agencies support staff attendance at conferences, costs include registration, per diem, hotel, travel, and time away from work. These

costs can occasionally be well over \$1,000. Typically someone attending a conference can expect to earn 6 to 12 contact hours of continuing education for certification or licensure. A certified rehabilitation counselor needs 80 such hours every 5 years to retain the credential. Licensure requirements may be more extensive. As a result, a counselor will need to attend 6 to 10 workshops to meet these needs.

By comparison, distance education courses for college credit cost from \$400 to \$1,000. Because college credit is granted, 2 or 3 courses may be all that is needed for the counselor to meet the certification requirement. Since these courses can be completed without leaving the office, they can be more convenient. When decisions are made about lifelong learning needs, the factors of cost, time, convenience, and quality of training should all be considered.

Agencies can reduce the financial burden on students to the largest extent possible. While agencies may not always be able to afford the cost of student programs, especially in areas that are not directly related to employees' direct job duties, they can assist students in understanding and meeting educational costs. The Rehabilitation Services Administration has awarded grants to universities to cover tuition and fees related to programs designed to help state VR professionals meet the requirements of the Comprehensive System of Personnel Development. Employees with demonstrated financial need can be assisted in applying for federal and state financial aid. Payback requirements may be satisfied through employment service or through loan programs. These and other financial options should be discussed with the student.

Agencies may be able to purchase required books and materials in bulk at reduced rates when large numbers of students participate in specific programs. They may also be able to assist with other expenses such as travel, postage for the mailing of course materials, and copying and faxing through approved use of agency office equipment. Including these items within the agency budget can provide a substantial level of support to the student.

While the acquisition of a degree directly benefits the learner, the agency also benefits from increasing staff competence and professionalism. Assisting students with financial support whenever possible creates a shared sense of responsibility for the achievement of educational goals.

At the same time, agency leaders are certainly seeking some assurance of return on this investment. Some agencies require employees to participate in agency payback. Other agencies do not require payback since they consider educational opportunities as a benefit that will attract employees. Still others partner with educational institutions to share costs and payback strategies. Agencies also express the concern that certified counselors with master's degrees will leave the agency soon after completing training to take higher-paying jobs in private rehabilitation or with the Veteran's Administration. Some states have been able to present this concern to their legislatures as a way to support raises in counselor salaries. However, many states struggle with extremely limited budgets that make raises unlikely.

Politics also plays a role in financial decisions. Many state agencies are faced with very tight budgets. The public often scrutinizes money spent on travel and education. If an organization is supporting distance education, it meets the political goal of less travel but is in conflict with the goal of “reducing costs at all costs.” Under these circumstances, agencies’ ability to show how education improves performance becomes critical. Other political issues are the credibility of distance education degrees compared with traditional on-campus degrees and whether in-state or out-of-state programs are chosen.

Even when administrative funds for training are available within an agency, administrators must consider who receives these funds. There is a risk that by focusing on specific skill development or specific classes of employees, other groups of employees will be less well trained or their skills will become outdated.

Before paying for distance education programs, agency leaders must ask detailed questions about physical, cognitive, cultural, and linguistic access for employees with disabilities. Course providers may need insight from the VR agency about how to make courses accessible. The issue of accessibility, including accommodations for individuals with disabilities, is discussed in detail in Chapter 6.

As another technical safeguard, information specialists from the agency need to work with distance education programs to ensure that the agency’s firewall will not prevent use of the program. Sometimes resolving this issue can take several weeks. As a result, advance planning is important.

Credibility of Distance Education Programs

A basic question that should be asked in the beginning—whether the agency is offering educational support to consumers or to their staff or even if an individual is pursuing learning opportunities independently—is whether the degree or course will be valued by others. Typically, the most common way to evaluate the credibility of a program is to determine if the degree is regionally accredited or specifically accredited in a particular academic area (Bear & Bear, 2001).

In rehabilitation, the most common accreditation is from the Council on Rehabilitation Education. For colleges and universities in general, six regional accrediting bodies are considered the most credible: the Middle States Association of Colleges and Schools, the New England Association of Colleges and Schools, the North Central Association of Colleges and Schools, the Northwest Association of Schools and Colleges, the Southern Association of Colleges and Schools, and the Western Association of Colleges and Schools (Bear & Bear, 2001; Thorson, 1998).

Several skill- or job-specific accreditation groups exist. While accreditation does not guarantee quality, it may increase the likelihood of acceptance by employers or eligibility to sit for licensure or certification exams.

Another well-known accrediting body is the Distance Education and Training Council, which is recognized by the U.S. Department of Education. Historically, it is the oldest continuous distance education accrediting body (Bear & Bear, 2001; Thorson, 1998). Approximately 70 home study institutions offer more than 500 programs accredited by the council. Some institutions have as few as 500 learners while the Armed Forces programs may have as many as 500,000 enrolled in a program.

Simply stating that a degree program is accredited may not be enough. Knowing which organization offered the accreditation is extremely important. Both the U.S. Department of Education and the Council on Postsecondary Accreditation approve accrediting bodies (Bear & Bear, 2001). The learner pursuing distance education may want to consider checking out an institution with one of these groups.

Each year more than \$200 million is spent on fake degrees in this country (Bear & Bear, 2001). One fake institution in California “took in more than \$70 million a year all by itself” (Bear & Bear, 2001, p. 270). In numerous places, degrees can be bought with few or no questions asked. Other degrees are sold with some, but very limited, work required. Knowing the real quality of the degree and whether the degree will meet employment needs are important considerations. Counselors and rehabilitation agencies considering distance education options need resources that help them assess specific programs. Five of the more common guides are as follows:

- *Bears’ Guide to Earning Degrees by Distance Learning* by John B. Bear and Mariah P. Bear
- *College Degrees by Mail and Internet* by John B. Bear
- *Campus-Free College Degrees: Accredited Off-Campus College Degree Programs* by Marcie Kisner Thorson
- *Peterson’s Guide to Distance Learning Programs 2002* edited by Peterson’s Guides
- *Distance Learning Online for Dummies* by Nancy Stevenson

Summary

Distance education is a legitimate tool to enhance the VR agency. Leaders must evaluate agency culture, agency needs, and individual staff needs before investing in distance education. Selecting quality programs and managing costs, tools, and time are important factors that can enhance success.

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5. Distance Learning: Implications for Learners Employed in VR Services

For distance learning to be successful, the educational program and the agency must plan the learning experience and address its logistics. Important considerations for vocational rehabilitation (VR) leaders were discussed in Chapter 4. Another necessary prerequisite for a successful distance learning program is an effective partnership between the educator and the learner. This chapter discusses the implications of distance learning for individuals involved in the provision of VR services. It reviews the role distance education can play in various stages of VR education, addresses considerations relevant to all employee-learners, and closes with a description of how distance learning can be used to serve VR clients. It is recognized that employees of public VR may also be persons with disabilities; the next chapter focuses on accommodations and other disability-related issues.

Distance Education in the Stages of VR Education

In this information age, knowledge is increasing at an exponential rate, and learning is a lifelong endeavor. With the frequent shifts in VR service paradigms, VR professionals must continue their career education into retirement. Such learning begins with general education and career orientation received through degree education. In VR, this is often referred to as preservice education. Once into their positions, VR professionals need to learn specialty information ranging from the nuts and bolts of job tasks to knowledge related to specific case loads or certain roles. This is the heart of in-service education, which continues through the bulk of their careers. Continuing and certification education overlaps with in-service education and is used to increase understanding of VR work and effective models for solving the most common work challenges. Such education is required to both maintain professional certifications and to provide the best service possible. The following section explores these types of lifelong career education in more detail and explains how distance education can affect them.

Degree Education

In VR, most counselor duties have been shown to be effectively handled by counselor aides or others who are less educated (Muthard, Dumas, & Salomone, 1969). At the same time, Szymanski and Parker (1989) articulated from their research the importance of graduate education in reaching improved consumer outcomes. As a result of these and other studies, the VR field has moved toward making the master's degree in rehabilitation counseling the entry point into the profession.

Using distance education approaches in preservice education offers numerous advantages. The learner can have a work and home life while attending school part-time or full-time. Asynchronous classes or night classes give the student the flexibility of scheduling classes around work and life demands instead of orienting life and work around school. The cost benefit for adult learners to keep their jobs while pursuing additional education is tremendous. For working VR counselors pursuing a graduate degree, there is also an immediate interface between new information and its usage. Traditional degree-seeking students must wait several years or more to apply a new skill or new knowledge. With distance education, new material or skills can be instantaneously applied.

Employed VR counselors taking distance education courses have often remarked that they have the practical knowledge without needing additional education. While it is true in that they know how to activate and close a case or process a vendor voucher, at some point most will want to better understand the meaning in what they do—to move from process to theory and the larger picture. A theoretical orientation can also give them support to find better avenues of approaching their work tasks in addition to shifting from quick closures to more effective long-term plans with consumers. This ascension in their hierarchy of needs is a major benefit of increased education, and distance education is making that possible for those who do not have a good option for the traditional on-campus program.

From the instructor's perspective, distance education provides the potential for collaboration with colleagues and allows students to broaden their learning by belonging to a cohort of persons from different agencies and practice backgrounds. In a typical college class, instructors are expected to present the information that they deem important in a topical area. They can involve colleagues through the provision of video, telephone, or e-mail, but collaboration is not done routinely due to the extra work or expense. That is beginning to change with the advent of inexpensive two-way communication that allows instructors to visit courses regardless of distance. The Internet 2 is a thrust behind this change, making communication with picture and sound between two locations simple and inexpensive. Of even more importance to students is the advent of a cohort of scholars from divergent backgrounds and locations coming together for a single purpose in a class. This group often defines the quality of the learning experience as members support, clarify, refine, and contribute to the knowledge base of a learning environment. The broader the background of the group and the more divergent its thinking, the more opportunities exist for learning at various levels for each individual member. It is far too easy for like-minded students from the same state to talk of the way things are done as if that is

the only way. It is much richer for them to hear of successful examples of providing rehabilitative services in ways that may differ from their experiences. That is truly educational!

Continuing Education and Certificate Education

Continuing and certificate education recognizes that in order to stay abreast of their field, practitioners have to do more than periodically read a journal. Continuing education is supported by the notions of lifelong learning and accountability.

Lifelong learning is a concept fostered by the dramatic gains in information development. Better communication has provided scientists with instant access to new developments that can further their work, thereby increasing the rate at which knowledge is acquired. Concurrently, computers have logarithmically multiplied the speed with which humans can process data and have accelerated the expansion of knowledge in all fields of study. It is no longer necessary to learn only from one's own trial and error when it is easy to review studies of many practitioners and determine best practices.

There has been a move for better accountability of human service workers to show that they are both minimally competent in their field and that they are keeping up with new developments. In VR, accountability has generally taken the form of gaining national certification such as the certified rehabilitation counselor (CRC) credential after completing the degree program. This credential suggests that the rehabilitation professional has the combination of education and experience to knowledgeably perform the job. In addition, the CRC credential is not good for a lifetime. It is good for 5 years, at which time the counselor has to demonstrate his or her continued abilities by documenting 80 hours of continuing education or by retaking a newer version of the exam. In some states, accountability is dealt with through state licensure. In either case, specialty workers have to show they have the basic degree education and continuing education for effective practice.

Traditionally, practitioners keep up with their discipline by participating in annual professional meetings and subscribing to professional journals. They also might attend an occasional workshop on a particular subject. These avenues are ongoing and will continue to be utilized in the foreseeable future. However, rehabilitation professionals have expressed that they can't keep up due to the rising tide of information and the limited time they have to leave their practice and attend seminars and professional training events. This time restraint is acute for those who work on a pay-for-service basis and earn an income only when they have billable hours. VR professionals have needed more efficient methods of receiving and accessing relevant and timely information. Distance education is exploiting this need through technologies that allow VR workers access to training at the time and place of their choosing.

In-Service Education

In-service education is designed to update staff on new developments. It can be more than that, but to differentiate it from continuing education in this chapter, it will be considered as state

training ranging from orienting new staff to offering updates on policies and procedures. This training might involve only a few staff at a time, such as at new staff orientations that are repeated regularly, or might be given to an entire group of employees, such as training regarding changes in the individualized plan for employment. Usually the latter type of training is offered at the state office or in regional gatherings. While there are advantages in these formats, such as a better sense of the organizational culture, off-site meetings can be enormously wasteful of human resources.

Distance education can help improve some training. For example, new staff orientation can be Internet-based and available to new staff at any time. Video material, instructions, procedures, policy manuals, and other explanatory materials can be housed on a website that is available not only to view for the first time but to view as many times as needed. Alternatively, material can be put on CD or DVD and mailed to new staff. Information stored in this form can be easily updated from a central location, and to conserve people's time, welcome messages or policy lectures can be professionally recorded once and used frequently rather than repeated in person. As this technology improves, other formats of information delivery and assistance will be available.

Considerations for Employee-Learners

Why are students choosing distance learning over traditional classrooms as they pursue continuing education? Some live in remote or rural areas and do not have ready access to the degree programs or specialized courses they need. Others may not be able to travel or take time off from work. Still others find themselves better able to balance family and child care responsibilities by "attending class" at home late at night or early in the morning when children are asleep.

Logistical considerations aside, distance learning, especially online learning, offers some unique advantages. In traditional classrooms, a few vocal students may dominate class discussions. But the nature of online discussion groups is such that students have time to reflect before responding. This leads to increased participation of quieter students and more insightful, well-considered comments from all.

In classroom settings, an instructor tends to direct the learning event and disseminate facts to students who are then supposed to absorb information like passive sponges. In a well-constructed online course, learning takes shape through discussions, questions, and the sharing of experiences. This requires interaction on the part of the learner and can yield an education that encourages critical thinking, problem-solving, and improved performance on the job.

Distance learning offers students flexibility. Instead of attending class at a specific time and place for a predetermined duration, an online class allows learners to schedule course time when it is convenient for them. This is very appealing to adults who may be returning to school in mid-career, adding academic demands to the responsibilities of a full-time job and child and elder care.

The ability to adjust course delivery time and to work at one's own pace promotes greater comprehension. In traditional settings, learners must keep up with the rest of their classmates or else become lost as they fall farther and farther behind. Distance learning allows students to choose the time of day and circumstances in which they are most alert and receptive and to invest as much or as little time in each lesson as they need to master the subject. In addition, instructors and classmates may be more readily available for assistance via e-mail and discussion rooms because time and distance are not factors.

Learners who participate in online courses have a greater sense of independence and self-advocacy. In a review of the literature on distance learning, instructors found an increase in online discussion over that which normally occurs in the classroom. Due to the anonymity of the electronic rooms, all learners feel a greater sense of freedom and are not stymied by the social pressures of face-to-face learning. Disabled learners find this to be an important benefit as the focus shifts to what was said rather than who said it.

Access to resources can be an invaluable resource to the distance learner and part of student success. Librarians are skilled researchers and are generally eager to provide patrons with bibliographies, books, and articles relevant to a topic. The Texas Rehabilitation Commission, for example, has a specialty library with many books and journals in the area of rehabilitation, work, and medicine. Counselors in the distance education program regularly call or e-mail the library with requests for research on topics for class. The librarians are able to fax or e-mail the counselor a bibliography and copies of relevant journal articles. Books available in the library can be checked out to the counselor and mailed. If required materials are not in the library, the librarians are sometimes able to access them through interlibrary loan from public and university libraries and then check them out to the distance learner. Additional educational resources include the National Clearinghouse of Rehabilitation Training Materials and the Education Resources Information Center, often referred to as ERIC, operated by the Department of Education. Both resources are available online.

If distance learners have access to a public library or an academic library without a strong rehabilitation collection, they can still have access to many resources. The librarians can guide them in using the electronic databases of indexes, abstracts, and full text of journal articles to research their topics. In Texas, the Texas State Library provides these services to the public and to academic libraries of the state. Many other states have similar systems, and many educational institutions that provide distance learning options can assist students with access to the institution's library and other resources.

While distance learners may be at a distance from the university, some may not be at a distance from one another. If distance learners are in the same program and in the same city, they can form a study group or a more general support group. In fact, in one large city with six or seven counselors in the same program, regional administration requires the counselors to come together at an office in the city for a day each month that class is in session. The counselors discuss their

progress that month, share what they have learned, identify any areas where they are having problems, and often initiate a conference call with the professor to clarify any outstanding issues. They coordinate the day and time of the conference call in advance to ensure the professor is available. These counselors have formed a bond that has been useful not only for earning better grades in their courses, but also in establishing a peer support network for discussing challenging cases. Additionally, learners who have completed the program can continue to meet with the group to provide insight and support based on their experiences. While many distance learners are geographically distant from classmates, they might benefit from forming groups using e-mail, chat rooms, or the telephone to communicate and to provide and receive support.

Both of these approaches to overcoming the distance gap by peer interaction are types of “learning communities.” A learning community is an intentional approach that enables students to develop better understanding of course materials by structuring increased interaction between students and their instructors (Gabelnick, MacGregor, Mathews, & Smith, 1990). In a learning community, small groups of students and faculty interact to enhance each other’s learning and the integration of the course material. The sense of a common purpose, the feeling of community support, and the intellectual challenge of regularly interacting with others focusing on the same educational issues can result in more in-depth learning (Kellogg, 1999). The development of a learning community can be a formal process included in the planning of the course or program of study or the result of informal interactions such as those described.

Characteristics of Successful Distance Learners

The choice to pursue learning by distance must be based not only on the need to gain educational credentials but also on the students’ personality and individual strengths and skills. Successful distance learners tend to share the following characteristics:

- *Effective organizational and time-management skills.* Distance learning is an alternate form of education, but it is not easier than the traditional model. In fact, many students say it requires much more time and commitment. Successful students are willing and able to commit 4 to 15 hours per week per course. In addition, they are able to realistically assess the time and resources required to complete assignments; can incorporate work, academic, and personal deadlines into long-range planning; and can prioritize tasks.
- *Self-discipline and self-motivation.* Distance learning is not for those who procrastinate. The very flexibility that makes distance learning attractive also makes it easy to fall irreparably behind if the student does not consistently read the material, participate in scheduled online discussions, and complete required quizzes and tests. Writing reports at midnight and cramming the night before an exam were never optimal approaches to learning; they are even more untenable in distance learning.
- *Assertiveness.* Although distance learners are expected to demonstrate self-direction and problem-solving abilities, they must be able to communicate difficulties with technology or content to the appropriate party in a timely manner.

- *Writing skills.* Distance programs rely heavily on written communication. Students who have limited writing abilities should consider coursework to improve their skills before beginning an extensive distance learning program.
- *Critical thinking ability.* Meaningful and quality input is an essential part of the online learning process. Students should be able to assimilate information, weigh facts and experience, and think ideas through before responding.
- *Team skills.* Many online courses attempt to reduce student isolation and build a learning community by assigning group projects. Students must be willing to share life, work, and educational experiences with one another. Each must be able to work cooperatively so that all team members benefit and no member causes the others to fall behind.
- *Comfort using technology.* Most schools identify the basic hardware and software required to take their courses. Successful distance learners have regular access to that technology, know how to use it, and develop back-up plans to implement if their systems crash at a critical moment. Learners with less comfort with technology may need to spend additional time gaining basic skills.

Elements to Consider When Evaluating a Distance Learning Program

If, after honestly assessing their skills, learners believe they would be good candidates for a distance learning program, they should evaluate the program's structure, support, and compatibility with their learning styles. The following are important elements to consider.

- *Class size and faculty involvement.* If there are too many students in the class, the most well-meaning professor may not be able to keep up with the e-mail traffic (up to 300 messages a day for a class of 40 students). If instructors fail to respond to e-mails and phone calls and/or offer very little feedback throughout the course, students feel as though they are working in a vacuum and can experience considerable frustration and anxiety about their performance. Learners who require a high amount of feedback and attention should seek courses with lower class size and high faculty interaction. If levels of interaction for the course or program are not satisfactory to the learner, he or she may be able to arrange additional time with the instructor or a teaching assistant or may want to consider a different program.
- *Course structure.* Courses can be created in a wide variety of ways, including streaming video lectures in real time, instructorless simulations, and e-mail-intensive courses requiring extensive reading and independent research. Students who prefer discussion and interaction with peers would be well advised to seek programs that incorporate chat rooms, discussion boards, and group projects into the curriculum.
- *Interactivity.* Does the program incorporate group projects and strive to build learning communities? Even though the syllabus includes elements designed to build learning communities, if students do not use available chat rooms, e-mail, and threaded discussions, then there is little interaction with peers, and opportunities for enriched learning are lost. It is worth noting that courses that are primarily asynchronous with little if any instructor interaction tend to have high dropout rates. Abbey (2000) recorded a dropout rate of 30% to 50% in some distance learning courses.

- *Course availability.* How frequently are required courses offered? Older students are more likely to experience disruptive life issues such as severe illness or a death in the family. If it were necessary to drop out for a semester or two, would it be possible to pick up the missed courses in a timely manner, or would graduation be delayed for years?

Distance learning is not for everyone. Each individual student must access the type of instruction most beneficial to him or her. It is unlikely that traditional classroom instruction will be completely supplanted by distance approaches. Each method has advantages and disadvantages. While the level of social interaction can be very high in a virtual classroom, it is a different experience from face-to-face learning. Regardless of how education is presented, some instructors and learners will find that the distance environment better meets their learning needs, while others will feel diminished by the loss of body language, vocal tone, and immediate listener response. In order to maximize learning and satisfaction, students would be well advised to realistically evaluate their skills, needs, and preferences before committing to either a traditional or a distance education program.

Distance Learning as a Resource for Use with VR Consumers

One value of distance learning is often overlooked: the use of the distance learning environment to assist the consumers of the VR agency. Learning online can become a highly valuable skill for the VR counselor. Knowing how to find information and resources is an essential part of the job of a counselor. Utilizing an online course can help counselors know the latest trends in assistive technology and relevant research regarding the rehabilitation process. Distance learning may enable counselors to spend more quality time counseling since they are not out of the office in training. Consumers empowered with up-to-date and relevant information are better prepared to make informed choices. The following section addresses the use of distance technologies throughout the rehabilitation process.

Orientation and Intake

Many individuals walk through our doors, not knowing where to turn for help. Some may need a referral; others may need services the VR agency does not provide. Through the various community resource pages located in a course or informational page, a counselor can help an individual find the appropriate agency or resources within the community. Online access to policy and guidelines of the agency, as well as casework notes that clarify the manual items—items that might be available through a distance orientation program— may help new counselors and rehabilitation assistants answer most case service questions.

Many books are located within some courses; these “virtual texts” may provide helpful suggestions on the type of issues to discuss during the intake process. No counselor can be an expert on every disability. Just knowing the appropriate questions to ask may serve to enhance the trust between the client and the counselor. The ability to find information or resources at any location where Internet access is available also enables the counselor and client to meet in alternate locations such as a school or campus, a business, or a local library.

Eligibility

Even if counselors have worked in rehabilitation for a long time, they have varying expertise and knowledge of specific disabilities and may need to consult with an expert. A discussion room monitored by an instructor or facilitator allows the counselor to tap into a rich resource of staff/student expertise from across the county or state, which can provide an idea, test, or resource that may assist with the case. Of course, identifying information on a consumer would not be appropriate material for a discussion room. Protecting consumer confidentiality is as important—if not more important—when using distance resources as when using traditional resources.

When building a case, medical information and psychological information are two basic foundations. Distance learning, electronic libraries, and virtual texts provide a wealth of knowledge regarding medical news, medicines and their side effects, and testing and research. With this knowledge, the counselor is not only informed but is able to ask pertinent questions of the health care provider.

Deciding on vocational assessments can be trying. Some distance learning programs provide suggestions for a starting point. With the ability to utilize features such as an interest inventory, temperament grid, and transferable skills analysis, the counselor can obtain key information on other assessments that may be needed. A listing of online medical and assessment resources appears in the appendix.

Plan Development

Agencies can provide informational seminars and fact sheets online. These may serve as a conduit to services the counselor may not be aware of, such as training and placement assistance to maximize the use of available funding. The Internet can be useful in finding commercial sites for tools, assistive technology, and schools and businesses. Such sites may help the counselor determine cost estimates that can be used in budgeting.

When searching the Internet (as opposed to using sites recommended in particular distance education courses), it is incumbent upon the counselor to evaluate the content. A variety of sites and programs provide “degrees” that are not valued by other educators or by employers. These “degree mills” may promise quality education with minimal commitment by the learner, but completion of these programs will not provide the learner with the skills needed to reach his or her goals. Counselors should familiarize themselves with the recognized types of accreditation and certification available to programs so they can help consumers avoid invalid programs.

Employment resources also abound on the Web. The Internet can be used with consumers to research prospective employers, to learn tips and techniques of job-seeking and interviewing, to obtain self-guided resume writing assistance, to find employment openings, and to apply for jobs. Detailed information about using the World Wide Web as an employment resource for

individuals with disabilities can be found in the 26th Institute on Rehabilitation Issues document, *Using the Internet as a Resource to the Work of the State VR Counselor* (2002).

Online Vocational Counseling and Service Delivery

Online and distance technology can be used to provide vocational counseling services to consumers with disabilities. Online counseling already exists among psychologists, and physicians in various parts of the country provide consultations online using distance technology (Hughes, 2000). Several states have begun or are experimenting with providing sign language interpreting via the Web to provide access to individuals with hearing loss in remote areas and to compensate for the extreme shortage of qualified interpreters. Rehabilitation counseling is also dealing with staff shortages, so the use of distance methods to serve persons with disabilities appears likely.

Cybercounseling, or WebCounseling as it is called by the National Board of Certified Counselors (NBCC), is defined by NBCC as “the practice of professional counseling and information delivery that occurs when client(s) and counselor(s) are in separate or remote locations and utilize electronic means to communicate over the Internet” (Hughes, 2000, p. 1). This definition would seem to include websites, e-mail, chat rooms, instant messaging, and live video/audio feed, but not telephones and faxes. The counselor and consumer, depending on the method selected, can have or not have visual cues to use in their communication; the exchange of information can be immediate or stretched out over time.

Using technology without visual cues requires the counselor to supplement the audio or text information received and given with specific indicators of context. Particular skills are needed to supplement the e-mail relationship and to accommodate the lack of nonverbal cues. These skills include the ability of the therapist to create an emotional connection with the consumer, a feeling of warmth and personal caring. This can be done through some specific techniques, such as emotional bracketing and descriptive immediacy, and through the therapist’s ability to analyze the consumer’s text for cues to the consumer’s state (Collie, Mitchell, & Murphy, 2001).

With “emotional bracketing” (Collie, Mitchell, & Murphy, 2001, p. 1), the communicator adds his or her prevailing emotion in brackets or parentheses after a statement. For example: “I don’t think I studied enough [guilt]” or “My mother is coming to visit [GULP!].” Descriptive immediacy uses a similar technique but includes the descriptions in the main text, such as, “As I’m listening to you talk about not studying, I’m feeling frustrated that you didn’t follow through on the techniques we discussed” or “When you mention your mother coming to visit, I imagine I can see your face. I think you probably have your eyebrows raised and you’re rolling your eyes.” Each of these techniques usually requires some initial training and modeling so that the consumer can become comfortable using the descriptors.

With text analysis, the counselor tries to detect cues about the consumer’s skills, education level, socioeconomic or ethnic status, and emotional state based only on the way the consumer uses text to express himself or herself (Collie, Mitchell, & Murphy, 2001). Textual cues can include

misspellings, word selection, and the use of capitalization, pseudo words, cultural/ regional phrases, regional spelling, and idioms (Collie, Mitchell, & Murphy, 2001). For example, individuals who consistently use words they cannot spell can be trying to demonstrate intelligence while inadvertently revealing a weakness. Capitalizing phrases or words can indicate emphasis, as in, “I can’t believe I ate the WHOLE thing!” Using pseudo-words, words that express their meaning by changing a common word, such as, “That meeting was sooooooooooooo long!” can accurately convey meaning and context. Using regional, area-appropriate, or ethnic spelling, such as “colour” instead of “color,” can indicate one’s origin, desire to appear a particular way (formal, erudite), or background (Collie, Mitchell, & Murphy, 2001). Of course, the more experience the counselor has with the consumer, the more accurate these interpretations will become.

Critical Issues in Cybercounseling

Rosemarie Hughes (2000) highlights critical issues related to cybercounseling as follows:

- *Truth in advertising.* The counseling profession is very concerned with unqualified persons promoting themselves as counselors. Unless state law allows criminal prosecution for practicing counseling without a license or gives a board regulatory authority, little can be done to prevent unqualified individuals from representing themselves inaccurately. The use of disclaimers by individuals without qualifications can effectively prevent accountability or prosecution for damages or incompetence.
- *Confidentiality and privileged communication.* It is essential to guarantee that consumer confidentiality will be respected. Consumers have a right to know who else might have access to messages.
- *Duty to warn.* Professional rehabilitation counselors have a duty to warn the appropriate individual and authority if they believe a consumer is a danger to himself or to others. The ability to discern when a person is a threat varies widely depending on the technology utilized, the counselor’s level of experience, and the previous behavior of the consumer.
- *Dual relationships.* A predator-type cybercounselor could use the Internet to take advantage of consumers or to arrange subsequent meetings. Since cybercommunication can emanate from any location, it can be difficult to determine if an individual is in fact employed as a counselor. Consumers may not be receiving advice from the counselor who is described. In text-only counseling, it is especially difficult for either party to verify the other’s identity.
- *Providing meaningful dialogue and follow-up.* A consumer may not know whether the assigned homework or specific directions are valid for his or her specific situations. Additionally, the counselor may have increased difficulty verifying consumer follow-through on assignments without direct visual proof.
- *Lack of cybercounselor knowledge of the circumstances or culture of the consumer.*
- *Consumer anonymity.*
- *Questionable Web information.* Discerning the validity of the information gathered from websites can be especially difficult.

- *Concern regarding equity of service provision to underserved populations.* Agencies must consider issues of access for all individuals.
- *Licensure across state lines.* This issue has not yet been resolved.

Summary

For a distance learning experience to be successful, all partners must be aware of their roles and responsibilities. The learner is one such partner. Distance education can offer several advantages for preservice, continuing, and in-service education, including a learner-focused rather than instructor-focused format, flexibility regarding the time and place of study, and access to useful resources. Nevertheless, distance learning is not for everyone. Learners will need to consider their own skills as well as the structure of a particular distance course. Those who make use of distance education will find that the access to resources offered through the experience may help them better serve VR consumers.

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6. Distance Learning: Implications for Learners with Disabilities

Distance learning has had an impact on individuals with disabilities from a variety of perspectives. The use of distance learning as an approach for training vocational rehabilitation (VR) staff (including employees with disabilities) has enhanced the skills of staff and in turn improved the services available to VR consumers. For individuals with disabilities, distance learning offers an alternative method for educational and skill enhancement that contributes to their marketability, ongoing career development, and expanded access to resources. There are also challenges related to distance learning for individuals with disabilities. Access is a major consideration. This chapter discusses the role of education in long-term career planning and then reviews accessibility considerations for individuals with disabilities.

The Implications of Lifelong Learning for Consumer Career Counseling

Global competition, the Internet, and widespread use of technology all suggest that the economy of the 21st century will create new challenges for employers and workers. In the workplace of the 21st century, the nation's workers will need to be better educated to fill new jobs and more flexible to respond to the changing knowledge and skill requirements of existing jobs. Meeting the challenge of employment and training will call not only for the best efforts of employers, educators and trainers, unions, and individual Americans, but also for new forms of cooperation and collaboration among these groups. Lifelong skills development must become one of the central pillars of the new economy (U.S. Department of Commerce, U.S. Department of Education, U.S. Department of Labor, National Institute of Literacy, & the Small Business Administration, 1999, p. iii).

21st Century Skills goes on to say, "Workers with more education earn higher wages. On average, college graduates earn 77% more than individuals with only a high school degree" (p. iii). Furthermore, "Workers with more education enjoy greater benefits, experience less

unemployment, and, when dislocated from their jobs, find their way back into the workforce with much more ease than those with less education” (p. iii). For example, dislocated workers with a high school diploma spend nearly twice as long finding a new job as workers with an associate’s degree.

The results of a longitudinal study published by the U.S. Bureau of Labor Statistics (2000) indicate that it is not unusual for a person to hold an average of 9.2 jobs over the course of a working lifetime. Several factors have contributed to this change. There has been a loss of traditional career pathways. It is no longer customary for employees to work their way up from the factory floor to management. Instead, it is more likely that career pathways will involve several job changes. Workers will need the self-reliance to manage their own career paths and the skills to adapt to different jobs. Large organizations are downsizing, which shrinks both immediate and long-term employment opportunities. And these same organizations are outsourcing, which means they are employing outsiders to perform specialist roles. This reduces opportunities within the organizations themselves, but it also increases options for self-employment.

Rehabilitation consumers must vie for employment in this environment both in the first job after rehabilitation and as they seek new jobs throughout their careers. What happens if a consumer has been successfully employed for 5 to 10 years and wants to pursue a position with more responsibility and higher pay? What if the consumer’s employer goes out of business? Does the consumer return for VR services, or is he or she able to find new employment independently? And now that lifelong learning is an essential part of remaining employed and employable, the question arises: Who should be responsible for a consumer’s continuing education either within a career field or to facilitate a change in career?

In the past, VR counselors tended to act as employment “gatekeepers,” using their knowledge of occupations, entry-level education and/or skill requirements, and local labor market demands to literally “place” consumers in jobs, which might or might not have held opportunities for continuing growth or upward mobility. The counselor, job developer, or employment placement specialist acted on behalf of the person with the disability, and very few consumers were taught the basics of career development or successful job searches. While this might have been a practical when one job was likely to last until retirement, this is not the case today.

Counselors must assume greater responsibility for providing consumers with the skills to guide their own careers. Counseling consumers about the likelihood that they will change not only jobs but also careers within their lifetime is a first step. By helping consumers develop independence in job preparation, job seeking, self-advocacy, career planning, and self-directed learning, the counselor helps them build a foundation of skills necessary for long-term vocational and career success. It is also important to work with consumers to develop tools to conduct job searches that are consistent with their skills and abilities and to advocate independently for reasonable accommodations. While this might lengthen the time initially spent with a rehabilitation agency, in the long run, this empowerment will support a transition from system dependency to independence and will decrease recidivism.

Are VR counselors prepared for this new role in career counseling? Theories of career development, career education, career exploration, and use of occupational information and labor market trends in career counseling are curriculum components included in master's-level rehabilitation counseling degree programs accredited by the Council on Rehabilitation Education. However, the extent of the information covered and the emphasis placed on different elements vary greatly from one degree program to another. Some universities devote an entire course to career counseling, while other programs touch on career development theories as an introduction to job placement strategies. Some counselors earned their advanced degrees over 10 years ago and may not have stayed abreast of all the labor market changes as work in this country has shifted from manufacturing to knowledge management. And not every counselor who meets acceptable state personnel standards to comply with the Comprehensive System of Personnel Development has taken coursework in career development. In short, there is a wide range in the knowledge and use of career counseling skills being applied by rehabilitation professionals throughout the country. Distance learning offers both counselors and consumers the opportunity to master current information leading to more successful employment outcomes.

Distance Education for the Consumer: Advantages and Cautions

In lifelong learning activities, distance education is often the best, if not the only, alternative for our consumers. It offers options to those who may be isolated in rural areas, those who are working, and those with mobility limitations or with family obligations that prevent attendance in a traditional classroom.

If consumers can try out distance learning during the rehabilitation process, they will be better prepared to use this medium for learning later. For example, if consumers are in an academic program in a community college or university, the counselor can encourage them to take at least some courses in a distance format, even if they attend classes on campus. Certainly, directing consumers with transportation problems or who live in isolated areas to appropriate distance learning programs can provide training and education that might otherwise be unavailable to them. These distance learning experiences under the guidance of a rehabilitation counselor can build not only the skills necessary for lifelong success in a distance learning environment but also the confidence necessary to succeed.

Before the distance learner with a disability enrolls in a distance education program, serious investigation must be given to the program and the institution. Chapter 4 provides information on determining the legitimacy of the institution. It must also be determined if the particular program is certified: for example, if the learner wants to be a rehabilitation counselor, has the Council on Rehabilitation Education certified the program? Credibility aside, the learner with a disability must determine if the program in question meets his or her needs. Are the classes really accessible? It may be necessary to have one or more interviews or telephone conversations with persons at the postsecondary institution who are knowledgeable about the courses. Further, the distance learner with a disability may have to try out at least one course online to see that it is accessible for him or her. If this task is left to the last minute, the classes may start before the

accessibility issues can be resolved and the student is immediately behind, frustrated with the experience and ripe for failure. A broader look at the issue of accessibility is provided in the following section.

Accessibility Considerations

Access to technology is a primary consideration for the use and support of distance education approaches. For individuals with disabilities, economic access is a key consideration; disability is a significant factor in the “digital divide.” Economic considerations include the financial ability to purchase hardware and software, including adaptive technology and other accommodations, as well as the fiscal resources to support the Internet service at the speed and for the time required to access online educational opportunities. Geographic considerations also impact access; Internet services are not as prevalent and may not be available in some rural and remote areas where higher numbers of individuals with disabilities tend to live due to the lower cost of living or other factors such as family or cultural connections (e.g., Native Americans and Native Alaskan communities). Learners with disabilities may also face access issues related to the limited availability of support services for adapting equipment and effectively using accommodations. The services and supports are not as available in rural and remote communities.

Beyond access to technology, there is the question of the design of the materials. By law, materials must be accessible. The legislation is reviewed in the next section, followed by examples of universal design, accessibility resources for colleges and universities, and the business case for accessibility.

Legislation

Section 508 of the Rehabilitation Act requires that all electronic and information technology products developed by or for the U.S. federal government and its employees and clients be accessible to persons with disabilities. Several state governments have also adopted this or similar legislation. The Electronic and Information Technology Access Advisory Committee of the Access Board provided accessibility criteria specific to six main categories of technology; these standards have far-reaching ramifications. Section 504 of the Rehabilitation Act mandates that educational programs receiving federal funds not discriminate against students with disabilities based on their disability status.

The Americans with Disabilities Act (ADA) has implications in this arena. Under the ADA, employees with disabilities are guaranteed access to the terms and benefits of employment offered to all staff, including training and educational benefits. The legislation states: “It is unlawful for a covered entity to discriminate on the basis of disability against a qualified individual with a disability in regard to the selection and financial support for training including apprenticeships, professional meetings, conferences and other related activities and selection for leaves of absence to pursue training” (42 USC 1630.4[g]). Interpretive guidance further clarifies that the responsibilities of reasonable accommodation remain with an employer even if it

contracts with another company for this service. This means that an employer must ensure that not only internal education but also external training programs (including course-related materials) purchased and offered through contractors are accessible. The requirement has implications for VR as an employer, particularly since it should serve as a role model.

Even when individuals with disabilities are not in the workforce, their educational opportunities are affected by the ADA. Title II covers institutions receiving public funds, which includes most universities. The legislation states: “A public entity, in providing any aid, benefit, or service, may not, directly or through contractual, licensing, or other arrangements, on the basis of disability . . . (iii) Provide a qualified individual with a disability with an aid, benefit, or service that is not as effective in affording equal opportunity to obtain the same result, to gain the same benefit, or reach the same level of achievement as that provided to others” (Subpart B, 35.130).

The legislative requirements under the Rehabilitation Act and the ADA cover courses, instructional materials, testing procedures, and supportive services, such as registration. Titles II and III of the ADA also address accessibility to examinations and applications for licensing, certification, or credentialing. Licensing, registration, and certification processes are required by the Rehabilitation Act under the Comprehensive System of Personnel Development. Each state VR agency must define and identify qualified staff related to their educational level and qualification or standing with a recognized state or national certification body. Federal and state partners have the responsibility of ensuring that the licensing, registration, and certification bodies being identified are accessible to individuals with disabilities to ensure access to those who are interested in becoming employed or are currently staff of the public VR system.

Accommodations for Learners with Disabilities

Access for individuals with disabilities in a distance environment requires both planning and working one-on-one with the learner to identify and provide specific accommodations for course access and full class participation. Planning considerations include the selection of platforms for course delivery and the development of curricula for individual courses as well as entire programs, as discussed in Chapter 3.

Although needs vary depending upon the individual learner with a disability, Table 1 provides a few examples of designs for universal access. The accommodations listed are relatively easy and cost-effective *if* done in the initial planning phases and not as an afterthought through retrofitting existing curricula and/or platforms. These examples also demonstrate that universal design considerations benefit a wide range of individuals. Since people have various learning styles and preferences, visual and auditory learners (with or without a disability) may benefit by having alternate formats available.

Table 1. Examples of Potential Accommodations for Learners with Disabilities

Disability/barrier	Accommodation	Solution/tips for users
Low vision <u>Barrier:</u> Access to visual information	Enlarged print	Consider font type and size to enhance the readability of the text. High-contrast text, the use of white space, and a clean, less complicated layout can enhance access.
Visual impairments/blindness <u>Barrier:</u> Access to visual information	Screen readers	Include instruction on accessing material in the course management system. Test software, since screen readers may have difficulty accessing certain software. Provide a text file of the presentation that is free of extraneous design elements and is designed for reading—for example, by using periods at the end of sentences to create a break in text and avoiding bullets because they appear as a run-on sentence when using a screen reader.
	Audiotaped books and materials	Mail audiotapes so that the learner can listen to the material without having to be at the computer. Auditory learners and students with learning disabilities may also benefit from having this access to materials presented in an auditory format.
Deaf/hard of hearing/late-deafened <u>Barrier:</u> Access to auditory information, potential impact on reading level for students who have English as a second language	Interpreting/captioning	Real-time captioning, transcribing, on-site interpreting, video-relay interpreting, or video relay interpreting may be beneficial to students who are deaf or hard of hearing. Transcribing does not provide a word-for-word transcript of all sound material. Captioning provides the best solution with a word-for-word record of all audio material and allows the learner to follow the stream of discussion. Use links to explain graphics, complex theories, and/or technical terminology. Visual learners and students with learning disabilities may also benefit from having access to text information.
Mobility impairments <u>Barrier:</u> Limited dexterity impacting access to the keyboard and mouse	Alternate access to keyboard and/or mouse commands	Consider voice-activated systems, keystroke options, a track ball that can be operated by hand or foot, a mouth wand, or a left- or right-handed keyboard.
Learning disabilities <u>Barrier:</u> Limitations related to information processing in a variety of formats	Reduction of distractions; alternate formats for information; reading and	Offer videostreaming of software instructional content and grammar and spell checker software. Create clean, to-the-point presentations; do not clutter the screen with visually distracting enhancements. Use a symbol to tie together similar

Disability/barrier	Accommodation	Solution/tips for users
	spelling assistance	thoughts. Offer text options in addition to audio and video. Provide keystroke commands in place of mouse commands. Use large print, high contrast, white space, and color to make information more accessible. Allow access to the learner in advance to allow preparation time. Provide a glossary of terms and extra time, if needed. Be clear about timelines and expectations.
Seizure disorders <u>Barrier:</u> Possible precipitation of seizures	Removal of flashing lights or the capacity to turn off flashing text or graphics	Eliminate the use of flashing graphics or text. If they are used, include a warning as part of the introduction to the course and give students the option of turning off these functions.

People occasionally question cost-effectiveness when a student needs an accommodation. The bigger question for individuals with disabilities is the intent behind the legislation that supports universal access. In *Ragged Edge Online*, Art Blaser offers the following perspective:

Is online access “cost-effective?” Such questions generate conversations that shouldn’t take place. When we declare something such as online access a “right,” we remove it from the arena in which something is permitted only because it is “cost-effective.” When we pass legislation ensuring rights, we make a statement: those rights are too important to be guaranteed only when they’re cost-effective (Blaser, 2000).

Working with Universities to Achieve Universal Access

In colleges and universities that have developed master’s degrees in VR with a distance component, technical support units may be aware of the need for universal accessibility and may have experience developing courses that can be used by all students. It is expected that the experience and skills technicians have gained by working with rehabilitation departments on distance programs will transfer to the development of courses in other areas. The challenge will be to persuade instructional designers that a well-designed e-learning course must be an accessible e-learning course. In fact, the incorporation of universal design principles into systematic approaches to instructional design results in a hybrid design that is instructionally more effective and marketable than traditional products, as reflected in some of the accommodations listed in the table above.

Due to the legislative mandates, perceived cost, lack of understanding and/or experience, other stereotypes related to access for individuals with disabilities, and the wide-ranging impact on curriculum development across the institution, the need for universal design will need to be addressed at the highest levels of colleges and universities. In colleges and universities where this responsibility has been delegated to the disability support services staff, the costs become

prohibitive, especially when access is attempted as a retrofit and not addressed during the development of curriculum and delivery systems.

Colleges and universities can be successful when they focus on universal program design and make accessible distance learning a priority. In 1999, the California Community Colleges published *Access Guidelines for Distance Education* (<http://www.htctu.fhda.edu.dlguidelines/final%20d1%20guidelines.htm>) as a result of pressure from the U.S. Department of Education's Office of Civil Rights. This document can serve as a resource for other educational institutions.

Among other resources, the U.S. Department of Education National Institute on Disability and Rehabilitation Research recently funded a National Center on Accessible Information Technology (AccessIT) at the University of Washington (<http://www.washington.edu/accessit/>). The purpose of AccessIT is to “increase the access of individuals with disabilities to information technology in educational institutions at all academic levels nationwide.”

An excellent resource for Internet content developers and developers of authoring tools is the World Wide Web Consortium, or W3C, which was founded in October 1994 with the goal of “leading the World Wide Web to its full potential by developing common protocols that promote its evolution and ensure its interoperability.” The Electronic and Information Technology Access Advisory Committee relied heavily on the W3C guidelines when developing standards for the Access Board, an independent federal agency created through the 1998 amendments to Section 508 of the Rehabilitation Act of 1973. W3C's website, <http://www.w3c.org/TR/ATAG10/>, offers accessibility guidelines, tools, and resources and has the advantage of international membership and input.

Another resource for educating instructors, administrators, and course designers about building accessible e-learning is Web Accessibility in Mind (WebAIM). WebAIM is funded by a grant from the Learning Anytime Anywhere Program (LAAP), which is administered by the U.S. Department of Education. LAAP provides \$30 million to \$40 million to support partnerships among educational institutions, software developers, subject matter specialists, and private employers. The main goals of WebAIM are to increase awareness of accessibility issues, to offer training, to improve the accessibility features of authoring tools, and to provide a model of institutional reform (Bohman, 2001). WebAIM offers tutorials, workshops, and courses for webmasters and developers of all levels. The courses are offered through in-person or online options, depending upon the needs of the learner.

“Bobby approval” (<http://www.cast.org/bobby>) used to be the standard for universal access, but WebAIM offers more stringent standards. Other sources for standards include the National Center for Accessible Media (<http://main.wgbh.org/wgbh/pages/ncam>), Validator (<http://validator.w3.org>), and WAVE (http://www.temple.edu/inst_disabilities/piat/wave).

The Business Case for Universal Design

Annually, the government spends \$1.1 billion for nonmilitary training. Conservative estimates forecast that 15% to 20% of all nonmilitary training will be in accessible electronic formats by 2005. This figure may be even higher in light of recent government diversity initiatives and internal mandates to increase e-learning use. Given the vast amount of money at stake with regard to government contracts, it is realistic to expect that the academic market and the private sector will adopt accessible e-learning as products become available.

The Knowledge Enterprise Group, a part of Merrill Lynch, forecasts that e-learning vendors in both the private sector and government markets will have combined revenue of \$11.4 billion by 2003. Accessible e-learning will meet the needs of a much greater consumer base, and vendors who are first to market products with integrated accessibility features have the potential to increase their market share by 10% to 15% over the next 5 years (Knowledge Enterprise Group study as cited in Adkins, 2001).

A market summary report written by Sam S. Adkins, consultant for Brandon-Hall.com, refers to the 2000 Census, which reported an estimated 56 million people with functional disabilities in the United States. This 20% of Americans earned \$1.2 trillion in income and had over \$200 billion in annual discretionary income. Furthermore, if people with functional limitations and hidden disabilities are included in these estimates, then individuals with disabilities could account for 40% of the American population. According to Adkins, the market for accessible e-learning is a lucrative opportunity, twice the size of the teen market (Adkins, 2001). This growing awareness of the collective economic and political power of individuals with disabilities will drive private industry to more aggressively compete for the economic resources of the disability community.

VR can play an important role in expanding the accessibility of training provided by the private sector. For example, in late 1999 the Texas Commission for the Blind decided to purchase e-learning for its 600 employees, 14% of whom were visually impaired and used assistive technologies. None of the three major e-learning vendors who held 2-year contracts with the state of Texas had accessible products at that time. However, MindLeaders recognized the opportunity to make its products more competitive in the larger market while meeting the needs of one specific consumer.

The collaboration began with an evaluation of MindLeader's existing product. Six blind employees using various assistive technologies were provided with ten free student log-ins to six courses representing a spectrum of the curriculum to be used by the agency. A list of major problems was generated by the "students," and MindLeaders began retrofitting a selection of its courses for the next phase of the evaluation. The Commission for the Blind contributed consultants with expertise in accessible design who were able to prioritize and articulate problems and recommend specific solutions. MindLeaders provided technical support and maintained communication between executives, developers, and designers and the commission.

In August 2000, the newly designed accessible e-training was piloted for any remaining accessibility issues and was also evaluated for instructional effectiveness, assessment features,

and impact on employee performance. By October of the same year, the few remaining accessibility issues had either been fixed or alternatives had been negotiated. The Texas Commission for the Blind bought sufficient licenses to provide training to one third of its employees. Through a mutual willingness to communicate, share expertise, and discover solutions, both parties were able to benefit. The Texas Commission for the Blind was able to extend e-learning training in information technology and general business topics to any employee needing skill development in these areas, and MindLeaders gained products that would give it a competitive edge in the e-learning market.

Other organizations are also beginning to recognize the importance and financial benefits of creating accessible products. Microsoft, Sun Microsystems, and IBM are among those companies that have official accessibility policies. While these policies are not perfect, they do influence corporate decisions on how software is developed (Schettler, 2002) and are leading to changes throughout the private sector.

Summary

As much as distance learning offers new opportunities for career development through access to education—at a time when consumers need lifelong learning to keep up in the workforce—distance education also presents challenges for individuals with disabilities. To build effective, universally accessible distance education programs requires an upfront commitment by the companies who develop the software, host the platforms, and develop the educational materials used in distance education as well as the support of universities and educators who develop the curriculum. While federal legislation clearly outlines the requirements for access, the technical knowledge and resources for support are still being developed. The VR field has a unique opportunity to advocate for the rights of individuals with disabilities through the provision of technical assistance and leadership in the area of accessibility and universal design.

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7. Distance Learning: Opportunities and Challenges

As shown throughout this monograph, a new context for learning is developing which can take place outside the traditional institutional and workplace-based venues. Technology is changing the access to knowledge, the process of learning, and the delivery of education and training. Within this new context, the adult who has been an occasional student becomes a lifelong learner.

In vocational rehabilitation (VR), it is recognized that strategies must be developed now to address issues of education and training in this rapidly changing learning environment. In the introduction, a vision was sketched out for a consumer, counselor, administrator, and educator practicing in the year 2010. To attain the vision, strategies need to be identified to address the variety of organizational, political, and technical conditions in existence. What issues need to be considered in the development of these strategies?

We have used the technique of backward mapping to define the issues. Backward mapping holds that implementation should begin at the local level: the closer one is to the source of the issue, the greater one's ability to influence it. It assumes that if a policy does not make sense at the delivery level, it is not going to make sense at the top of the system (Elmore, 1982). Backward mapping deals specifically with implementation and evaluation and helps us understand the steps required to reach our vision.

The following sections offer some questions about existing and developing policy and practice issues for each of the players presented in the introduction. This list is not meant to be all-inclusive but may provide some points to ponder.

Questions for Juan, the Consumer

- Technology has always been a part of his educational and work development. It is not considered enrichment but an integral part of all he does. Have the counselor and the system adapted to this change?
- Distance education is an accepted part of learning and communicating. The expectations of “learning any time and all the time” are common. How does the rehabilitation system support his lifelong expectation for education and continuing skill development?
- How do we help close the digital divide between those who have access to technology and those who do not?

Questions for Carol, the Counselor

- The environment demands constant upgrading of skills and knowledge. Do the organizational culture and performance expectations support this learning?
- How does the counselor balance the demands of consumers, the principles of the virtual office, and the continual need for learning and education?
- What is the reward system for counselors? Is it tied to processes or outcomes?
- Does the organization provide the technology for the counselor to work and learn anywhere, including the home and office?
- How do we personalize learning and retain the socialization value of traditional education and training?
- How do we ensure interactivity within the learning community?

Questions for Jean, the Lifelong Learning Specialist

- Since much of the content and learning is completed via distance education, what is the role of lifelong learning coordinators?
- Will the coordinators become more of a coach and mentor than a formal presenter? How will they remain current?
- Will instructional designers become a part of the organization?
- Who tracks the learning profile of VR personnel, and what issues must be addressed related to privacy?
- Who offers distance learning opportunities, and how is distance learning reviewed for quality?

Questions for Stephen, the Educator

- How does the educator remain abreast of content and technology?
- Partnerships with other faculty and institutions will be common. How will that affect curriculum development?

- How can educators design courses to provide a variety of experiences for various learning styles?
- What new systems are needed for certification and credentialing of competencies?
- Do the current ways of measuring learning and organizing instruction— courses, semesters, credit hours— support and encourage new forms of learning?

Questions for Treva, the Administrator

- The costs, system demands, and personnel of the VR agency will be significantly different. How will the administrator plan for the substantive changes in technology for the organization and the personnel?
- How will public policy address lifelong learning and the need to provide continual retraining?
- How are the costs of technology covered—initial purchases, replacements, and upgrades?
- How do we ensure the availability of the necessary infrastructure for access to rural and urban communities?
- How do we ensure the availability of the necessary infrastructure for access to consumers, staff, and organizations?
- How can organizations promote learning as a way of life and stimulate innovative thinking?

Implications for Learners with Disabilities

In order to remain employed and employable in the 21st century, workers will need to embrace lifelong learning to maintain the knowledge and skill levels required for jobs, which continually change. VR counselors should incorporate awareness of and preparation for lifelong learning into a consumer’s rehabilitation plan from the start. Part of this charge will include assuming greater responsibility for providing consumers with the basic tools of career development. By teaching consumers to analyze transferable skills, anticipate employer needs, seek training in new skills before they are needed, research new career opportunities, and use the Internet to locate opportunities for professional development and conduct job searches, the VR counselor will truly empower consumers to guide their own careers and become system independent.

The Internet holds tremendous potential to link people with disabilities to educational and training programs, to expand vocational opportunities, and to increase connectedness with the world in general. In fact, a Harris Poll conducted in 2000 found that adults with disabilities are much more likely than adults without disabilities to report that the Internet has significantly improved the quality of their lives (Taylor, 2000).

For learners with disabilities, “access” includes multiple issues, such as economic, geographic, technological, and accommodation considerations. Staff of the state VR system can be influential in impacting systemic change related to the development of accessible distance education, certification, and continuing education programs by providing technical assistance and leadership to both the public and private sectors. Federal and university partners, and people with

disabilities, too, have the opportunity and responsibility to advocate for universal access to electronic media that will support lifelong learning and opportunities for career development.

Summary

The old boundaries of time, distance, status (economic, political, racial/ethnic, disability), and location are disappearing before our eyes. It is clear that an understanding of the learning environment is needed to address the challenges ahead. Without exception, effective distance learning efforts begin with careful planning and a focused understanding of participant needs. Appropriate technology can be selected only after these elements are understood in detail. It is difficult to determine where the rapid development of technology and distance learning will take us, but one thing is certain: each week there are new sources of information and new tools that have the potential to enhance learning for all of us. The primary challenge is to our imaginations.

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APPENDIX A:

Internet Resources

Research on Distance Learning

- Distance education: better, worse, or as good as traditional education? (Tucker, 2001): <http://www.westga.edu/~distance/ojdla/winter44/tucker44.html>
- The no significant difference phenomenon (Russell, 1999): [http://teleeducation.nb.ca/nosignificant difference/](http://teleeducation.nb.ca/nosignificant%20difference/)
- Repository of findings from the Asynchronous Learning Network: <http://www.alnresearch.org/>
- Studies of effectiveness of learning networks (Hiltz & Turoff, 2001): [http://www.alnresearch.org/Html/ aln_study.htm](http://www.alnresearch.org/Html/aln_study.htm)
- Distance Education Clearinghouse research sites: [http://distancelearn.about.com/gi/dynamic/offsite.htm?site=http:// www.uwex.edu/disted/costs.htm](http://distancelearn.about.com/gi/dynamic/offsite.htm?site=http://www.uwex.edu/disted/costs.htm)
- Illinois Online Network evaluation of online courses: [http://illinois.online.uiillinois.edu/IONresources/evaluation/ index.html](http://illinois.online.uiillinois.edu/IONresources/evaluation/index.html)
- Is distance education better than the traditional classroom? (Fitzpatrick, 2001): [http://www.clearpnt.com/ accelepoint/articles/r_fitzpatrick_060101.shtml](http://www.clearpnt.com/accelepoint/articles/r_fitzpatrick_060101.shtml)
- Research in distance education (Jeffries, 2001): [http://www.ihets.org/consortium/ ipse/fdhandbook/resrch.html](http://www.ihets.org/consortium/ipse/fdhandbook/resrch.html)
- Evaluation of an online master of education (Levin, Levin, & Waddoups, 2000): [http://lrs.ed.uiuc.edu/hicss/ 34/evalofcter.html](http://lrs.ed.uiuc.edu/hicss/34/evalofcter.html)

Internet Accessibility

- AccessIT at the University of Washington: <http://www.washington.edu/accessit/>
- Best Practices for Electronically Offered Degrees [http://www.neasc.org/cihe/ best_practices_electronically_offered_degree.htm](http://www.neasc.org/cihe/best_practices_electronically_offered_degree.htm)
- Bobby website access: <http://www.cast.org/bobby/>
- Center for Applied Special Technology <http://www.cast.org/>
- CPB/WGBH National Center for Accessible Media <http://www.webaim.org/>

- *Real Connections: Making Distance Learning Accessible to Everyone*, prepared by DO-IT (Disabilities, Opportunities, Internetworking and Technology) at the University of Washington: <http://www.washington.edu/doi/Brochures/Technology/distance.learn.html>.
- *Creating Video and Multimedia Products that are Accessible to People with Sensory Impairments*, prepared by DO-IT: <http://www.washington.edu/doi/Brochures/Technologyvid/sensory.html>.
- IBM Accessibility Center <http://www-3.ibm.com/able/accessweb.htm>
- Microsoft accessibility products: <http://www.microsoft.com/enable/>
- Section 508 Guidelines developed by the Access Board under the Rehabilitation Act of 1973, as amended: <http://www.access-board.gov/508.html>
- The Adaptive Technology Resource Centre <http://www.utoronto.ca/atrc/education.htm>
- The Trace Center <http://www.trace.wisc.edu/>
- WebABLE: <http://www.webable.com/>
- Web Accessibility in Mind (WebAIM): <http://www.webaim.org>
- W3C (World Wide Web Consortium) Web Content Accessibility Guidelines and Checklist: <http://www.w3.org/WAI>, <http://www.w3c.org/TR/WCAG10>

Tools for Evaluating Distance Education Courses

- IAS online Web-based analog of collecting and reporting student assessment of postsecondary courses through the Internet: <http://depts.washington.edu/oeaias/index.html>
- Survey suite Web-based survey program: http://intercom.virginia.edu/cgi-bin/cgiwrap/intercom/SurveySuite/ss_index.pl
- Reference guide for instruction (with a number of useful evaluation tools): http://mime1.marc.gatech.edu/MM_Tools/evaluation.html
- Guidelines for continuing education units from the Institute for Electrical and Electronics Engineers: <http://www.ieee.org/organizations/eab/ceus/index.htm>
- Guidelines for maintaining quality in distance education offerings from the International Association for Continuing Education and Training: <http://www.iacet.org/distance/distance.htm>
- Learning Networks effectiveness research instruments: http://www.alnresearch.org/JSP/research_instruments.jsp
- Exambuilder Web-based testing application: <http://www.exambuilder.com>
- Online Journal of Distance Education Administration (quarterly): <http://www.westga.edu/%7Edistance/jmain11.html>
- Some evaluation questions (Shadish, 1998): <http://ericae.net/pare/getvn.asp?v=6&n=3>
- Free assessment inventory, which allows creation, administration, and analysis of online teaching evaluations: <http://www.getfast.ca>

- Quiz Rocket Web-based quiz and survey program: <http://www.learningware.com/quizrocket/>
- Quiz Studio Web-based quiz and survey program: <http://www.quizstudio.com>
- Testcraft Web-based quiz and survey program: <http://www.testcraft.com/>

Ethical Policies Related to Distance Learning

- American Counseling Association's *Ethical Standards for Internet Online Counseling*: <http://www.counseling.org/gc/cybertx.htm>
- National Board for Certified Counselors's *The Practice of Internet Counseling*: <http://www.nbcc.org/ethics/webethics.htm>
- Computer Professionals for Social Responsibility's *Emerging Ethical Issues in Distance Education*: <http://www.cpsr.org/publications/newsletters/issues/2000/Spring2000/buchanan.html>
- American Distance Education Consortium's *The Move to a Full and Flexible Infrastructure for Distance Education*: <http://www.adec.edu/workshops/2001/poley-missouri/>

Career Assessments

- CareerStorm: <http://www.CareerStorm.com>
- Career Development eManual: <http://www.cdm.uwaterloo.ca>
- Career Key: <http://www.careerkey.org/english/>
- Online personality questionnaire: <http://www.keirsey.com/frame.html>
- Type Focus: <http://www.typefocus.com/>
- O*Net Online: <http://online.onetcenter.org>
- Princeton Review Career Quiz: <http://www.review.com/career/index.cfm>
- Psychometrics: <http://www.psychometrics.com/onlinetest/>
- National Clearinghouse for Rehabilitation Training Materials: <http://www.nchrtm.okstate.edu/>

Medical Resources

- Abbreviated DSM-IV definitions: <http://www.mentalhelp.net/>
- Merck Manual: <http://www.merck.com/pubs/mmanual/>
- Physicians Desk Reference: <http://www.pdrel.com/> (requires subscription)
- American Academy for Cerebral Palsy and Developmental Medicine: <http://www.aacpdm.org/home/index.html>
- American Academy of Child and Adolescent Psychiatry: <http://www.aacap.org/index.htm>
- American Cancer Society: <http://www.cancer.org/>
- American Medical Association: <http://www.ama-assn.org/>
- American Psychology Association: <http://www.apa.org/>
- American Speech-Language-Hearing Association: <http://www.asha.org/>

- Apple Technology Solutions: <http://www.apple.com/disability/>
- BehaveNet: <http://www.behavenet.com/main.htm>
- Brain Injury Association of America: <http://www.biausa.org/>
- Center Watch: <http://www.centerwatch.com/>
- Centers for Disease Control and Prevention: <http://www.cdc.gov/>
- Centre for Neuro Skills: <http://www.neuroskills.com/main.html>
- Cerebral Institute of Discovery: <http://www.cerebral.org/>
- Cerebral Palsy Information page: http://www.ninds.nih.gov/health_and_medical/disorders/cerebral_palsy.htm
- Cerebral Palsy Information Site: <http://www.cerebralpalsy.com/>
- *Disability Resources Monthly*: <http://www.disabilityresources.org/index.html>
- Ear Foundation: <http://www.theearfound.com/main.html>
- Epilepsy Foundation: <http://www.efa.org/>
- Epilepsy Foundation affiliate search: <http://www.epilepsyfoundation.org/aboutus/lookup.cfm>
- Family Village: <http://www.familyvillage.wisc.edu/specific.htm>
- Injury Fact Book: http://www.cdc.gov/ncipc/fact_book/
- Mental Health Net: <http://www.mentalhelp.net/>
- Mental Health: The Cornerstone of Mental Health: <http://www.mentalhealth.org/cornerstone/>
- Multiple Sclerosis Foundation: <http://www.msfacts.org/main.htm>
- Multiple Sclerosis, International Support Foundation: <http://www.msnews.org/>
- Muscular Dystrophy Association: <http://www.mdausa.org/>
- National AIDS Clearinghouse: <http://www.cdcnpin.org/>
- National Cancer Institute: http://www.cancer.gov/cancer_information/
- National Institute of Diabetes, Digestive, and Kidney Diseases: <http://www.niddk.nih.gov/>
- National Institutes of Health: <http://www.nih.gov/>
- National Institute of Mental Health: <http://www.nimh.nih.gov/>
- National Institute of Neurological Disorders and Strokes: <http://www.ninds.nih.gov/>
- National Institute on Deafness and Other Communication Disorders: <http://www.nidcd.nih.gov/>
- National Library of Medicine: <http://www.nlm.nih.gov/>
- National Resource Center for Traumatic Brain Injury: <http://www.neuro.pmr.vcu.edu/default/Main.htm>
- National Spinal Cord Injury Association: <http://www.spinalcord.org/>
- National Stroke Association: <http://www.stroke.org/>
- Neuromuscular Diseases Information Clearinghouse REHAB Info Network: <http://www.rehabinfo.net/>
- Neuropsychology Central: <http://www.neuropsychologycentral.com/facepage.html>
- Pharmaceutical Research and Manufacturers of America: <http://www.phrma.org/patients/>
- Polio and Post Polio: http://www.familyvillage.wisc.edu/lib_poli.htm
- Post Polio Syndrome: <http://home.earthlink.net/~polioinfo/index.html>

- Post-Polio Syndrome Fact Sheet: http://www.ninds.nih.gov/health_and_medical/pubs/post-polio.htm
- Post-Polio Syndrome Information Page: http://www.ninds.nih.gov/health_and_medical/disorders/post_polio_short.htm
- Report of the Surgeon General: <http://surgeongeneral.gov/news/>
- Spinal Cord Injury Information Network: <http://www.spinalcord.uab.edu/>
- Spinal Cord Injury Resource Center: <http://spinalinjury.net/>
- Substance Abuse and Mental Health Services Administration: <http://www.samhsa.gov/>
- Traumatic Brain Injury Survival Guide: <http://www.tbiguide.com/>
- United Cerebral Palsy Association: <http://www.ucpa.org/>
- Vestibular Disorders Association: <http://www.vestibular.org/>
- Virtual Hospital: <http://www.vh.org/>

APPENDIX B:

Glossary of Terms

Research on Distance Learning

Andragogy: an alternative to pedagogy and refers to learner-focused education for people of all ages. The andragogic model asserts that five issues be considered and addressed in formal learning. They include (1) letting learners know why something is important to learn, (2) showing learners how to direct themselves through information, and (3) relating the topic to the learners' experiences. In addition, (4) people will not learn until they are ready and motivated to learn. Often this (5) requires helping them overcome inhibitions, behaviors, and beliefs about learning.

Asynchronous: Communication in which interaction between parties does not take place simultaneously.

Bobby: This is a tool for Web page authors. It helps identify changes which would make Web pages more accessible to users with disabilities and makes suggestions which will help special browsers work more effectively. *Bobby WorldWide* is the most recent version, and it can analyze sites using the U.S. Federal Government's Section 508 and the WAI Conformance A, AA, and AAA guidelines. It also tests pages that use Secure Socket Layers (SSL) and provides better detection of HTML files types in Frame Source. There are some important aspects of accessible Web page design that Bobby cannot test. Therefore, Bobby should only be used as a first step to ensure accessible Web designs. For more information, go to www.cast.org/bobby/.

Continuing education: Education that is usually not for credit, but which can be delivered on campus or at-a-distance.

Correspondence: Print-based coursework that is completed by a learner at home at their own convenience, but usually within a set timeframe. All assignments-reading, class notes, written assignments, research, and some examinations-are completed independently. Students correspond with a school through the mail.

Distance Education: The concept of a student and instructor, separated by time and distance, using technology to complete instruction. See also distance learning.

Distance Learning: The desired outcome of distance education. See also distance education.

Instructional design: The systematic process of translating general principles of learning and instruction into plans for instructional materials and learning.

Interactive Video: Participants (students and instructors) at different origination and receiving sites are able to see and hear each other, thus creating an interactive learning environment at a distance.

Internet: A global information network connecting millions of computers. Also called the Net.

Learner-centered Education: An educational philosophy in which the needs of the individual are primary; therefore, the teaching and learning process provides flexible sequences of study, negotiated objectives and content, negotiated learning methods, negotiated methods of assessment and a choice of support mechanisms.

Lifelong learning: A philosophical concept in which learning is viewed as a long-term, "cradle to grave" process, beginning at birth and lasting throughout life.

Pedagogy: literally means the art and science of educating children and often is used as a synonym for teaching. More accurately, pedagogy embodies teacher-focused education. In the pedagogic model, teachers assume responsibility for making decisions about what will be learned, how it will be learned, and when it will be learned. Teachers direct learning.

Synchronous: Communication in which interaction between parties takes place simultaneously.

WebAIM: Web Accessibility in Mind is a project created by the Utah State University and funded by a grant from the Department of Education. Tutorials, workshops and courses are offered, both in person and online, to train webmasters and developers of all levels in the basics of creating accessible electronic material.

W3C: The World Wide Web Consortium is an international organization founded in 1994 to develop common protocols, which would promote the evolution, interoperability, and accessibility to the Internet for all users, despite differences in culture, education, ability, material resources, and physical limitations. Over 30 specialized workgroups conduct research, create technical reports, and make recommendations. The Web Accessibility Initiative workgroup has developed especially useful guidelines addressing the needs of people with disabilities.