

WEST VIRGINIA
INSTRUCTIONAL TECHNOLOGY PROGRAM DESIGN
FOR ECONOMIC DEVELOPMENT

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Index: Skill Training, Distance Learning, Economic Development, Information Technology

Abstract: The expansion of technology throughout the entire technical education spectrum is linked to the successful implementation, integration and support of the new educational paradigm. Education must build on a strong technical infrastructure. Common strategies in physical infrastructure connectivity, philosophies, training and support will build the firm foundation upon which all other advances can be successfully sustained. West Virginia technical education must move in a sound collaborative mode that improves workforce preparedness. No matter where the company is located, workforce development is a vital component of the overall strategic economic development plan and must occur concurrently with development efforts, distance learning may be a key to training delivery. Industry consistently indicates that certification is much more important than college degrees. College and universities should look to inclusion of these certification skills into their degree programs. The formation of this delivery model will involve a cooperative effort of the State Colleges, Universities, Community Colleges and Technical Education Centers.

PHILOSOPHY – INFRASTRUCTURE - COLLABORATION

The expansion of technology throughout the entire technical education spectrum is linked to the successful implementation, integration and support of the new educational paradigm. Education must build on a strong technical infrastructure. Common strategies in physical infrastructure connectivity, philosophies, training and support will build the firm foundation upon which all other advances can be successfully sustained. West Virginia technical education must move in a sound collaborative mode that will improve workforce preparedness.

EMPLOYMENT/TRAINING PARADOX

Training for workforce development continues to be faced with the chicken and egg paradox. Do we train for existing and expanding industries or do we train to attract new industries. Historically the skills needed for manufacturing construction and service industries have been more stable than those emerging in the Information Age. Bricklaying, for example, has not changed basic skills significantly over the last 50 years. Our Gifu Japan Office has indicated to us that the life of a computer game is now estimated at one month by Japanese software developers. Obsolescence of technology is growing at an ever-increasing rate due to advanced development and user expectations. Computers, for example, have generally been placed on a three-year replacement cycle. A three-year old computer is probably still usable and is physically and electronically sound but will not run the software needed to be competitive for the business enterprise environment.

“JUST IN TIME TRAINING”

As West Virginia’s employers adjust to the challenges of technological change and the need to develop a globally competitive workforce, the use of technology as an instrument to enhance the delivery of technical education’s workforce development programs, is becoming increasingly necessary. The demand for a "just-in-time" workforce development delivery system in a competitive client-driven environment challenges education to become more creative in utilizing technology to satisfy these needs. Traditionally training institutions have not been proactive in providing cutting edge training. Perhaps this type of training should be conducted by industry?

GOVERNMENT – EDUCATION – INDUSTRY COLLABORATION

Government, industry, and business in West Virginia are moving rapidly toward the Information Age. The State of West Virginia made significant strides toward delivery of services and government functions through information technology as evidenced by the Information Technology Strategic Plans located at www.state.wv.us. Federal government installations in West Virginia (such as the Federal Bureau of Investigation Fingerprint Lab, Internal Revenue Services Area Processing Centers, and Public Debt Office) also contribute to the WV information technology base. Information technology industries are being promoted and are growing as a result of the National Technology Transfer Center (www.nttc.edu), the West Virginia High Technology Consortium Foundation (www.wvhtf.org), the West Virginia Development Office (www.wvdo.org), and the Governor's Office of Technology Japan Office (www.wv-jpnet/got/default.htm). These developments are part of the overall plan to groom the West Virginia economy through information technology. The High Tech Consortium is offering a Virtual Company service, which can link companies through the internet in a corporate relationship any where in the world. No matter where the company is located, workforce development is a vital component of the overall strategic economic development plan and must occur concurrently with development efforts. Industry consistently indicates that certification is much more important than college degrees. Cisco, Novell, and Microsoft certifications are valued by industry. College and universities should look to inclusion of these certification skills into their degree programs.

UTILIZING TECHNOLOGY FOR SELF DIRECTED LEARNING

The present state of technology permits us to reestablish the self-directed learning method as a part of an instructional alternative offered by technical education. For the student who learns more effectively in this manner, multimedia, technology-assisted web-based courses could provide the opportunity to recapture the love of self-directed learning. Although research might not be available which supports technology as being the missing link in learning methodologies, the US National Science Foundation has targeted many funds, which will be used to investigate this new opportunity. Most certainly, with technology, WV can begin to provide again the possibility of getting the credentials or the skills necessary for productive, fulfilling, and responsible work. Technology can and should be applied to make the promise of an education a reality for those who need this new chance to participate fully in society. Development education and workforce preparedness are logical targets of the technology. Technology focused in this manner, cannot be challenged as effectively increasing access, meeting student needs in an environment which is insensitive to the barriers of semester beginnings and semester endings, and which can identify, without prejudice, the strengths and shortcomings of the individual learner.

Technology can easily accommodate the individual who learns quickly. This is a commonly accepted reason for adopting technology. Less commonly recognized is that many students, who learn more slowly, can benefit from the technology-assisted approach. A web-based presentation can be reviewed as many times as necessary for understanding.

QUALITY CONTENT

We must not lose sight of our objective when providing work force training. It is easy to get lost in the blur of technology and forget that technology is the media not the message. History has repeated itself with digital technology much like print, audio, and video technologies. Early on too much emphasis is given to the technology rather than the content and application. Fortunately, digital technology is emerging from the beginning stages to a stable environment as evidenced by the quality of programming available from educational institutions and especially industries like Microsoft, Cisco, and other major IT vendors.

VIRTUAL CURRICULA

As statewide efforts to deliver workforce development programs involving several different public institutions proceed, asynchronous learning which utilizes the Internet, the ATM infrastructure, multimedia, and other forms of technology can provide delivery in a more cost effective, accessible, and efficient manner. The development of curricula utilizing a variety of technology assisted delivery models will become the norm. In addition, significant professional development efforts must be undertaken to encourage interested faculty in becoming proficient in creating technology assisted courses, which employ a "virtual curriculum" model that will deliver course content in "chunks". This type of delivery system will be absolutely necessary to meet the time constraints of workers and employers alike. The use of the Instructional Performance System Inc (IPSI) software suite, which is a structured approach to curriculum development utilizing the "virtual curriculum" and "chunking of content" concepts, is presently being utilized by West Virginia's public higher education institutions delivering community and technical college education. The use of IPSI needs to become more widespread in order for faculty to develop curricula that provide for the workforce readiness demanded by employers. This type of development and delivery by selected faculty should create an environment more conducive for the transfer of knowledge to other faculty. This will encourage more utilization of this method in the delivery of the regular curriculum, and will thus result in systemic changes as to how workforce programs are delivered.

ELECTRONIC INFRASTRUCTURE

West Virginia has made great strides in building the infrastructure to deliver digital based training throughout the State by development of the West Virginia State Unified Network (WVSUN [www.state.wv.us/got/wvsunplan]) for carriage of signal for all state agencies, including K-12 and higher education. WVSUN by utilizing Asynchronous Transfer Mode (ATM) technology will be able to provide voice, video, and data needed to transmit distance learning effortlessly. West Virginia will continue to capitalize on other states and countries developments. Over 600 college courses are now available through the Southern Regional Education Board (www.sreb.org). Over 400 Computer Based Training courses (CBT) were made available through WVSUN (www.wvnet.edu). In

addition, West Virginia University (www.wvu.edu) Marshall University (www.marshall.edu) along with other colleges, community colleges, and technical schools continue to offer technology training through distance learning venues.

CONCENTRATION

Over the next few years, four different programmatic areas will be addressed for application of asynchronous learning and the virtual curriculum model for the delivery of workforce development programs. These areas are Manufacturing Supervision, Manufacturing Technology, Emergency Medical Services and select Governor's Guaranteed Workforce Program training modules. The goal is to develop curricula in Information Technology, Identification Technology, Virtual Reality Technology, Manufacturing Supervision, Manufacturing Technology and Emergency Medical Services in the IPSI format and making them available to all West Virginia educational institutions involved in the delivery of these programs. Selected courses in each program will be put into a technology assisted delivery mode. In addition, those Governor's Guaranteed Workforce Program training modules that are in the most demand and lend themselves to technology-assisted delivery will be put in that mode and made available to members of the West Virginia Training Network.

COOPERATIVE EFFORTS

The formation of this delivery model will involve a cooperative effort of the State Colleges, Universities, Community Colleges and Technical Education Centers. In addition the Human Resource Investment Council, the Work Force Investment Boards, the West Virginia Development Office and various business partners including the West Virginia Manufacturers Association and the West Virginia Roundtable.