A PROFILE OF CURRENT EMPLOYEE TRAINING PRACTICES IN SELECTED BUSINESSES AND INDUSTRIES IN SOUTHWEST VIRGINIA

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In

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(ABSTRACT)

The purposes of this study were to (a) establish a profile of the current training practices of selected businesses and industries in Southwest Virginia; (b) identify the type of training methods these companies are choosing—such as traditional classroom training or web-based training programs, and (c) identify how the training methods are selected. This profile established baseline data for current business and industry employee training programs.

The population of this study included every business and industry that had participated in workforce development programs provided by community colleges located in the southwest region of Virginia in 2001 and 2002. The researcher developed an Internet-based survey instrument and solicited data from 205 organizations.

Descriptive analyses were used to organize, summarize, and describe the data collected from all participants; specifically frequencies of responses to individual survey items were reported. Of the 205 organizations surveyed, 88 returned a questionnaire giving an overall response rate of 42.9%.

The results showed that manufacturing was the most represented industry, most participants held a management position, and most worked in the human resources department. The majority of businesses expected some type of increase in their training programs within the next year. Nearly all indicated that they use classroom-based training programs, and a substantial number indicated using videotapes, self-study materials,

computer software or CD-ROMS, and web-based training methods. Many of the participants said that they offer training for skill development in the areas of computer applications, technical skills and knowledge, communication skills, and safety procedures. Lastly, cost, flexibility, perceived value, and timeliness of the program were criteria rated as most influential in the decision to use a particular training method.

DEDICATION

I would like to dedicate this dissertation to my brother, Ricky Lee Hundley, who casually yet persistently encouraged me to pursue my formal educational journey. Thank you for the holding the vision of what I thought could never be.

This dissertation is also dedicated in loving memory and in honor of my dad, Charles D. Hundley, and my brother, D. Duaine Hundley. To my dad, you taught me the value of silence, laughter, and perseverance, and I continue to learn from you. To my brother, your mysterious ways, kind heart, and quiet love left me embracing all of life's lessons. I miss you both greatly.

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Chapter 1

Introduction

The intense competition that occurs in today's marketplace at the international, national, and local levels has many implications to the survival of all American businesses and industries. As a result, those organizations prepared to face this competition are better prepared to survive in the business world. The approaches many businesses and industries have selected to take to ensure their survival are varied and well documented in the literature. Many businesses and industries are now adjusting their workplace practices by looking at new, and better, ways of organizing the work of their employees. Some of these re-designed efforts include assisting managers in the arrangement of quality circles, structuring team building, encouraging networking that promotes creative problem solving and developing analytical skills among their employees (Koonce, 2001). In addition, an increasing number of employees are being encouraged to telecommute as a response to problems with pollution and traffic congestion. Finally, as a result of widespread Internet connectivity, organizations are offering products and services on-line to promote the flexibility and availability of their products to a larger, and more knowledgeable, group of consumers (Van Buren & Woodwell, 2000).

Studies have also suggested that the presence of a trained workforce is yet another method that businesses and industries use to manage and control the economic strains they experience due to competition. A measure of those economic strains that can threaten the survival of an organization can be seen in declining employee performance levels, decreased quality of products and services, employee turnover, lower employee

skill levels and lowered profits. Since a trained workforce can greatly increase the survivability of an organization, many corporate decision-makers are jumping on the training bandwagon with renewed interest and vigor. Even though employee training has been shown to produce positive results, in both employee productivity and corporate profits, the renewed interest in training comes at a cost. One major cost these corporate decision makers absorb is the choices they face when selecting one particular employee training practice over another to sustain or boost their economic presence through employee quality (Bassi & Van Buren, 1999).

According *The 2000 ASTD Trends Report: Staying Ahead of the Winds of Change* (Van Buren & Woodwell, 2000), globalization, technology, and demographics appear to be the main forces driving the need for employee training in the workplace. In the area of globalization, businesses and industries are forced to extend their reach far beyond their traditional home markets to now include all parts of the world. The negative side of this far-reaching approach is that as they extend their reach to include international markets, so also do they extend their financial reserves. If organizations become over-extended in their effort to reach potentially new consumers of their product, some of these organizations can actually weaken the very fiber that they are attempting to strengthen as monies to cover these costs are diverted from the organization's training function. Technological advances are also forcing the need for training by pushing companies to emphasize speed, flexibility, and innovation throughout their everyday business practices. In reaction to this push, these companies find themselves becoming increasingly reliant on a steady pool of trained employees. Ironically, at the time organizations are expecting their workers to become more efficient, the very composition of the workforce is

changing. Demographic data are predicting an increase of minorities such as Asian Americans, Hispanics, and Blacks in the workplace as well as a rise in the number of employees in the 45-64 age range. It has been an unfortunate fact for some time that workers representing minority groups also have a greater probability of being the product of low-income families. Unfortunately, this income level is often an indicator that they have also attended a public school where the quality of education has been reported as being sub-standard (Frantz, 1997). In essence, while the workplace will be expanded, the workers contributing to this expansion arrive on the job with either few marketable skills or inadequate basic education skills that trainers use as the foundation to build essential worker skills. Older workers fare little better and have been targeted as a group that can present considerable challenge to organizational trainers. Workers in this age group are often seen to be those workers who are most in need of contemporary skill acquisition and/or technical skill upgrading (Reich, 2002). In both cases, businesses and industries are finding themselves having to hire from a pool of potential employees who will need some type of training before they can become productive.

Alan Greenspan (2000), in his keynote address to the National Skills Summit, stated "…workers must be equipped with technical know-how but also with the ability to create, analyze and transform information and to interact effectively with others" (p. 2). Contemporary education programs at the secondary and post-secondary levels have yet to demonstrate their ability to meet these employer requirements. Faced with having to hire from an ever-increasing pool of ill-prepared workers, business and industry decision-makers recognize the vital role employee training will play in their current and future success. At the same time, however, they are faced with the challenge of deciding how to

deliver training to their valuable employees in the most effective and efficient manner. Even the most progressive business and industry leaders and trainers are finding the answer to this question to be elusive (Van Buren & Woodwell, 2000).

The fast-paced technological changes that have occurred, and will continue to occur, in the corporate environment have also surfaced in the training community. In addition to the traditional stand-up method of training, workforce training continues to be infiltrated with web-based instructional programs. While the developers of web-based instruction initially touted the web as being the wave of the future in corporate training, the reality is that many companies remain skeptical. Because of this level of skepticism, companies continue to find themselves faced with the dilemma of choosing the method of employee training that will assist most in achieving their overall organizational goals and meet the needs of their employees. The number of articles in the popular and professional press debating the merits of each approach has increased the magnitude of this dilemma. Corporate decision-makers are influenced by the influx of the information regarding the ease of use and economical perks of web-based training; however, they still seem to be hesitant to move away from traditional classroom training programs completely (Koonce, 2001; Matthew & Dhery-Poirier, 2001). This conflicting and perplexing situation exists, in part, because little research has been conducted to examine either the acceptance or actual usage of either approach in the corporate world. Training has been traditionally used to ensure workers were equipped with the latest skills; however, some corporate decision-makers are questioning the capability of existing training practices to meet these challenges. Businesses recognize that employee training must occur to ensure economic survival, so the ensuing challenge is for businesses and industries to find a training

method that both meets their needs and trains their employees in an efficient and timely manner. Those companies who fail to anticipate what they should be doing to survive and what training practices they should implement to meet these changes will rapidly be left behind (Van Buren & Woodwell, 2000).

While selecting the appropriate employee training delivery method is important, the issue of training effectiveness must also be considered. In some respects, training effectiveness is even more critical since that issue focuses on what type of training approaches exist in specific training areas and the overall quality.

This research study identified the types of employee training delivery systems that are currently preferred by selected businesses and industries located in the southwest region of Virginia. In the following sections, a brief background of these training issues will be described in turn leading to the focus/significance of the study, the purpose of the study, research questions, assumptions and limitations of the study, a list of common definitions, and a breakdown of the overall organization of this document.

Background

Both the popular and professional literature document the push toward accepting web-based training in the corporate sector in favor of the more traditional stand-up training method. According to Koonce's (2001) article titled "Where Technology and Training Meet," the convergence of training and technology is "having a revolutionary impact on both the nature of training and the skills that trainers will need to do their job in the next century" (2001, p.1). As workplace skills are widely being upgraded with technology, in some instances trainers are expected to adapt their training methodologies accordingly. The web-based instructional programs are becoming an increasingly popular

option to meet training needs due to management's perception of the economical feasibility, flexibility and ease of use. Their popularity, however, has still not reached the stage of epic proportions.

In spite of these expectations, previous studies have shown that businesses and industries are using a combination of web-based and classroom training instructional methods to meet their employee training goals. The projections that stand-up trainers will go the way of the "horse-riding soldier" do not seem to be holding true.

In support of Koonce's revelations, a study conducted in 1996 by the Web-Based Training Information Center (W-BTIC) surveyed 2,015 organizations to determine how their current and future training needs would be met. Participants were comprised of large multinational corporations, small businesses, government agencies, non-profit organizations, and academia. The results of the survey indicated that 82% of the respondents were in the process of moving toward more technology-based instruction to deliver their employee training programs. In addition, 20% of this specific group indicated that they already employ web-based training programs, and 38% designated computer-based training and online training as cost efficient (Wiesner, 1998). The results of this study tend to suggest that these particular respondents either currently had or were in the process of moving away from the traditional classroom-based training program to one that is delivered online. The other side to this issue is equally adamant of their position.

Training magazine's *Annual Industry Report* (2000) looked at the instructional methods used by 1,347 companies nationwide that offered employee-training programs. Companies that reported having from 100 to 10,000 or more employees were selected to

participate. The findings of this study reported 90-98% of the national organizations relied most on classroom-based instructional methods to deliver employee-training programs. These organizations also reported that when they did use technology, it was most frequently used as a resource or an aid in the dissemination of information. A second purpose of this study asked the companies to rank the instructional tactics used as an aid in the delivery of employee training. The results are listed in order from instructional tactics used as aids most frequently to least frequently: videotapes, Internet/WWW, computer-based games, or simulations, videoconferencing to groups, satellite/broadcast TV, outdoor experiential programs and lastly, individual videoconferencing. Only 6% of those surveyed indicated that they deliver employee training via a remote location. It is apparent from the results of the *Annual Industry Report (2000)* that the web-based instructional method does not experience the same popularity among these corporate trainers as once envisioned by its original developers.

The literature also unveiled continual disagreement among training professionals on the disadvantages and advantages of both web-based and traditional classroom-based training programs. Wiesener (1998) mentioned that the web has a long way to go before it can come close to replicating the interactivity of an instructor-led course. Other dissenting issues such as acquiring support for web-based training, the challenges associated with changing from a classroom to web based learning, and the discussion of instructional design dilemmas are both important and relevant (Koonce, 2001). Hanna (1998) cited a decrease in the social aspect of learning and the learner's assembly of knowledge in web-based training classrooms.

In spite of these concerns, support for the use of web-based training was also found. Matthew and Dohery-Poirier (2001) touted that web-based instruction "can be used to meet the need of a more diverse student group" (2001, p. 1) and inherently provide a more well rounded learning experience. A middle-of-the-road approach questioned the actual application of technology in training programs in both web-based and traditional classroom environments.

Significance of the Study

The web-based versus traditional classroom-based employee training debate, and resulting practical application issues, were identified as universal throughout the literature. In relation to the scope of this study, the issues regarding the type of training practices currently used, and the ensuing controversy experienced throughout businesses and industries in the southwest region of Virginia, are particularly appealing.

As stated in the Report for Fiscal Year 2001 by the VCCS (2002), Virginia's Workforce Development System (WDS) was established in 1998 by the Virginia General Assembly as part of the Virginia Community College System to provide flexible credit, or in some instances non-credit, programs and services to meet the employee training needs of businesses and industries throughout the commonwealth. The VCCS reorganized the WDS unit in 1999 and initiated vital workforce projects that better supported local colleges in their goal to provide responsive, flexible, and cost-effective workforce development services to Virginia's employers and citizens. This mission has been highly successful as the Workforce Development System has been responsive in meeting the workforce needs of more than 100,000 Virginians and more than 3,200 Virginia businesses and organizations each year.

Additionally workforce development information on the VCCS website (2002) stated the following:

> The Virginia Community College System established the Statewide Training Network to respond to the workforce development needs of companies and other organizations/agencies that are regional, statewide or have locations in multiple Virginia community college service areas. The purpose of the Network is to facilitate a quick, coordinated, effective response to training requests (Introduction section, para. 3).

Unfortunately, no specific information pertaining to current training practices in Southwest Virginia is available. In light of this lack of information, the focus of this research study was two-fold. First was to identify current training practices in selected businesses and industries throughout Southwest Virginia. Second, to identify which form, or forms, of training these businesses and industries choose to meet their employee training needs and identify how these instructional techniques were selected.

The information collected from this research has several potential applications. Data can be examined to determine the current market profile of businesses in Southwest Virginia. The resulting information can be used in the development of training products and/or enhancement of current training programs to meet the specific and unique needs of businesses and industries. Additionally, the data collected can provide a means to evaluate areas of further research in workforce development.

Statement of Purpose

The three purposes of this study were to (a) establish a profile of the current training practices of selected businesses and industries in Southwest Virginia; (b) identify the type of training methods these companies are choosing—such as traditional classroom training, web-based training programs, and (c) identify how the training methods are selected. This profile established baseline data for current business and

industry employee training programs. Businesses and industries that participated in workforce development programs offered by community colleges located in the southwest region of Virginia were selected to obtain information.

Research Questions

To accomplish the purpose of the study the following research questions were asked.

1. What is the profile of selected businesses and industries that offer employee training programs in Southwest Virginia (SWVA)?
2. What training methods are selected businesses and industries currently using in SWVA?
3. Of those training methods used, is a particular method used to train for a specific skill set, i.e. motivation, safety practices, computer skills, etc.?
4. What criteria were used to select a particular employee training method?

Assumptions of the Study

1. The respondents were those individuals most qualified to provide the requested information based upon their personal perceptions, observations, and/or experiences.
2. Diagnostic tools are accurate and appropriate for the study.
3. Training information derived from SWVA Workforce Development Centers is assumed to be complete and accurate based on information gained from regional representatives.

Limitations of the Study

1. This study derives data from businesses and industries in Southwest Virginia that participate in Workforce Development Programs. Thus, any conclusions drawn from this study may not be generalized beyond this scope.

2. The data may be subject to bias by the structure of the survey and the sincerity of the respondents' answers.
3. True attitudes of the respondents may not be reflected by the responses given on the survey.
4. Data will be solicited from internal trainers rather than external training consultants to better understand what training delivery methods are currently used and not what should be used.

Definitions

Following are the definitions of the most commonly used terms in this study.

Classroom-based training. The traditional classroom mode of instruction that consists of a formal presentation of information, concepts, or principles by a single individual (Cantor, 1992).

Distance learning. "Enables a trainer in one location to be linked to participants in multiple locations simultaneously" (Koonce, 2002, p.1).

E-learning. "Instructional content or learning experiences delivered or enabled by electronic technology" (Pantazis, 2002, p.21)

Web-based training. Educational practices that use the World Wide Web as a repository for instructional information and the Internet as the distribution channel for that content will be referred to as web-based training (WBT) (Matthew & Dohery-Poirier, 2001).

Organization of the Study

This study is organized into five chapters. They are as follows:

- Chapter 1 introduces the study, background information, focus and purpose of the study, research questions, and assumptions and limitations of the study.
- Chapter 2 contains a review of literature that is relevant to the purpose of the study.
- Chapter 3 details the design of the study with descriptions of the subjects, instruments used, data collection procedure, and the analysis of results.
- Chapter 4 contains information describing the findings of the survey information by research question, the results of the non-respondent follow-up, and the analysis of data related to the research questions.
- Lastly, Chapter 5 contains a summary of the study, review of findings, conclusions, discussion, and recommendations.

Chapter 2

Review of Literature

Introduction

Training departments, like all other departments within organizations, are undergoing vital transformations in the quest to stay competitive in today's global economy. The importance of employee development has played a premier role in this transformation as the threat of corporate economic instability due to regional, national, and international competition looms overhead. To ensure their continued survivability, many businesses are paying less attention to the restructuring and reengineering issues that dominated ten or so years ago and are now paying more attention to the development of their employees within the organization (Van Buren, 2001).

The continued development of employee skills to help ensure corporate success has given rise to the debated question of what method of employee training will be most beneficial in the quest for product quality and much needed employee development. One body of research indicates many companies continue to invest primarily in the traditional instructor-led employee training programs. Other conflicting studies show that web-based employee training programs are becoming the increasingly popular method to reach this goal. The following sections will highlight those studies that engage in this debate. Receiving special attention are those studies this researcher identified that discussed current practices in several organizations that have implemented web-based employee training and/or traditional instructor-led, classroom-based employee training programs.

Specifically, the key areas reviewed throughout the chapter include current training practices of businesses and industries, the use of e-learning or web-based

instructional methods in the delivery of training, the use of classroom-based instructional methods in training, the use of other relevant instructional methods, the criteria businesses evaluate when selecting instructional methods, and the results of employer investment in training.

Current Practices

A 1997 survey conducted by the ASTD Benchmarking Service revealed a four percent decline of instructor-led classroom training programs. Based on the results from this study, the researchers predicted that by the year 2000, an additional 20% drop might be experienced thus moving classroom-based instructional methods from the original ~80% to ~60% of total training time. Even though this drop was considered significant, instructor-led employee training continued to capture the majority of the training time. A more telling statistic at the same time predicted e-learning to rise from 9.1% to 23% of total training time. This type of information had two purposes. First, the stand up trainers who followed the instructor-led employee training format did notice that their days of the using the stand up trainer format were numbered. Second, e-learning would become the undisputed champion, and the wave of the future, in corporate training methods. The results of this 1997 survey indicated that the researchers attributed much of the change in training delivery methods to the increase in learning technologies such as CD-ROMS, intranets, local area networks, and the Internet (Bassi & Van Buren, 1999).

The 2001 ASTD State of the Industry Report tended to verify the past survey findings of other studies in which organizations generally projected a decrease in their delivery of classroom-based employee training programs and a corresponding increase in their technology-delivered employee training programs. In a rather alarming fashion,

however, the 2001 survey data also showed something quite different. E-learning training practices experienced the opposite results and instead of growing fell from 9.1% in 1997 to 8.5% in 1998 and then 8.4% in 1999! Quite to the dismay to the supporters of e-learning, the projected growth in e-learning never materialized as expected. Furthermore, ASTD's data indicated a rise in classroom-based training methods from 77.6% in 1997 to 79.9% on 1999. The continued growth of instructor-led, classroom-based, employee training supported prior positions that organizations are finding e-learning hard to implement (Van Buren, 2001).

Proponents on both sides of the corporate training world started to search for further supporting evidence to strengthen their position. Why had instructor-led, classroom-based employee training not only survived but grown in spite of many previous predictions suggesting its demise? Why had e-learning not been a convincing winner in the battle for corporate acceptance? Where, and why, had they erred? Does current research support the findings of previous studies that showed a decrease in e-learning technologies and a rise in classroom-based employee training practices? These findings pose more questions regarding the current practices of organizations today. The following sections will present information on both learning methods to provide some clarity to the employee training practices found in businesses and industries today.

E-Learning

Technological advances have created opportunities for the enhancement of learning capabilities within many organizations. "Technology enabled learning, or e-learning, is becoming an integral part of a larger system of practices and policies designed to prepare and support a high-skilled workforce" (Pantazis, 2002, p.21). The

basic tenets of learning have changed from the traditional one-size-fits-all approach to one where instruction is customized to meet the individual needs of different employees. It was with this shift in mindset that the American Society for Training and Development and the National Governors' Association assembled leaders from business, government, and education to examine how e-learning can equip workers with the skills needed to succeed in the workplace. The resulting report entitled "Vision of E-Learning for America's Workforce" stated social and economic reasons for creating and sustaining an e-learning environment for America's workforce and identified priority action areas for the public and private sectors to implement jointly (Pantazis, 2002).

Some of the research conducted in the corporate sector indicated that e-learning is widely accepted and used throughout businesses and industries today. While there can be many reasons leading to this level of popularity, Pantazis (2002) stated that the digital economy encourages new business models, customization, and innovation in the workplace. Consequently, success in this environment means that individuals and organizations must "remain flexible, acquire new skills continuously, and identify new ways of managing knowledge and information" (p.22). Although technology is a driving force in the growing amount of workplace re-structuring and innovation, it also serves as a key tool for keeping pace with rapid change, particularly in the area of employee development.

Another researcher conducted a study that also identified the continued support and popularity of e-learning. Davis (2001) stated that 87% of manufacturing and engineering companies he contacted are likely to use e-learning to train employees, and 39% claim to be doing so already. For example, BP and British Gas Companies are

investing in the virtual classroom where the students can experience workshops or online training connected to the web, role-play simulations, or access a live mentor around the clock. BAE Systems launched a Virtual University (VU) in 1998 for its 130,000 employees. The VU offers a learning and development guide on around 300 courses that can be delivered to their employees. Their courses focus on IT and business skills and use commercial, off-the-shelf material—such as psychometric tools—to help people identify their learning styles. Although they claimed success with their programs, a lack of online teaching resources for engineers was noted as problematic.

Additionally, Pack (2002) reported results from a recent e-learning survey on 600 major companies where 60% offered some form of digitally-based training, up from 49.4% the previous year. Pack (2002) also noted that IT firms were leaders of implementing technology-based learning and gave Cisco and IBM as examples of companies that have done an exceptionally good job. Other companies who have e-learning programs included Motorola, Oracle, Toyota, Home Depot, and McDonalds.

Fister (2000) described how training at a communication and aviation electronics company, Rockwell Collins (RC), began making the transition from 100% classroom-based training to a centralized, technology-based approach to learning. The company consisted of 42 domestic and 15 international locations with 14,000 employees and formulated a systematic plan to move to alternative learning formats such as self-paced web-based training at the desktop, computer-based training courses on CD-ROM via kiosks and learning labs, and live training via online virtual classrooms. Rockwell's initial goal was to deliver 70% of employee training curricula via computer-based learning methods by the end of 2001. In December 1999, the company was progressing

rapidly toward their goal with (a) 30% of the curriculum delivered via computer, (b) a common design process established, (c) learning labs for employees without computer access created, and (d) the first virtual classroom launched.

The new learning system at RC incorporated a number of elements to create a rich training environment. All business units had learning councils made up of RC managers and internal learning consultants, who oversaw training needs analyses and evaluated whether training was the right solution to specific performance problems. Rockwell participated in an industry cooperative of large organizations that share specific training needs, created an extranet of computer-based courses that all co-op members could use, thus reducing the cost of training for all. Fister (2000) reported that Rockwell envisioned offering online graduate courses and possibly degree programs to employees through Kansas State University in the near future.

Classroom-Based Training Programs

Contrary to the claim of increasing popularity of e-learning, *Training's* 2002 *Annual Industry Report* touted instructor-led training as the preferred training instructional method throughout the past three years. Businesses and industries reported that they used instructor-led delivery 73% of the time in 2000, 77% in 2001, and 74% in 2002. This *Annual Industry Report* provided detail regarding the formal training activity of U.S. organizations with 100 or more employees in the areas of manufacturing, transportation/communications, wholesale/retail trade, finance/insurance/banking/ business services, health services, educational services, and public administrations (Galvin, 2002). From these findings one may conclude that instructor-led training is the preferred methods in all sectors.

This consistent rise in instructional technologies, led Farrell (2000) to conclude that instructor-led training is likely to remain the dominant form of instruction for most types of training due to the "unique qualities that a trainer brings to the instructional relationship" (p.44). He also mentioned how pertinent nonverbal cues via posture and facial expressions were essentially lost using electronic training. Specifically, in his experience with managers, difficult decision-making situations could not be resolved through e-mail or teleconferencing, whereas the discussions had to be conducted face-to-face to reach agreement.

Ohlhorst (2001) mentioned how many technology professionals in his field of engineering shun the formal classroom style of training and prefer to gather new skills while on the job. High costs and lack of time were stated as examples that produce such mindsets. Ohlhorst (2001) directly rebutted this claim and upheld the inherent value and success of traditional classroom training methods. He described a recent experience with Microsoft Trainers who demonstrated some of their courseware for his company. "The course gave the staffers insight into what solution providers encounter in the classroom. The Test Center picked up useful information from the class, but the true gems of knowledge were found in the real world examples presented by … [the] instructor" (p.1). This experience could not have been better gained with other teaching methodologies.

Other Instructional Methods of Interest

The primary focus of this research study is the use of web-based and classroom-based instructional methods in businesses and industry today, however several instructional methods exist that deserve mention. The use of computer software, self-

study materials, satellite broadcasts or videoconferencing, and videos will be addressed throughout the following paragraphs.

Computer Software

The use of computer software in training employees has increased in popularity throughout the last few years and can be more cost effective than other alternative training approaches. Software programs can make on-the-job learning faster and safer by providing hands-on experience in a controlled environment. For some tasks, learning time can be cut by as much as 85% when compared to the traditional lecturing method (Lierman, 1994).

Goldwasser (2000) stated that the idea of learning by doing (rather than by reading or listening) is not new to the business community. Computer applications have followed this thought and were developed toward simulating real-life business situations and providing employees with problem solving opportunities. Programs designed and implemented with both the learner and business goals in mind result in creating quality learning experiences benefiting both parties.

Harley-Davidson recently used a "Redline Experience" computer software program developed by PriSim to provide a more holistic understanding to employees regarding the inner-workings of the company. The program takes two to three days for employees to complete. Employees work in teams, and are encouraged to listen and think strategically. All in all, the employees claimed this to be the most meaningful training program provided by their company (Johnson, 2002).

Self-Study

Printed material. The evolving instructional-delivery revolution continues to change the way in which information is created and transmitted. Many organizations have shifted their reliance upon printed training materials to electronic media via web sites, electronic mail, CD-ROMS and other means (Sorian & Baugh, 2002).

However, Ellet (1999) identified several reasons why trainers continue to depend on traditional training media such as books and manuals. He mentioned the cost effectiveness, portability, ease of use, and overall educational value of printed materials. Print is unsurpassed in delivering extensive or complex content that learners can use, especially in a self-paced training situation. Specifically, books are inexpensive compared to most other training media. Through Ellet's (1999) studies on printed materials, he found that management spent far less on self-paced printed materials as compared to sending employees to a seminar covering the same content.

Mentoring. According to Bell (2000) "a mentor is someone who helps someone else learn something that he or she would have learned less well, more slowly, or not at all if left alone" (p. 54). A mentor is a sensitive and trusted person who advises and coaches fellow employees throughout a learning process. The mentor's role in the learning organization is valued and utilized to differing degrees throughout business and industry today.

Procter & Gamble implemented a mentoring program in which junior and mid-level female managers mentor male senior-level executives in an effort to raise consciousness regarding issues affecting women in the workplace. The specific goals were to "reduce regrettable loss or attrition of promising female managers, to give female

managers more exposure to some of the organization's top decisions makers, and to open new lines of … communication" (Zielinski, 2000, p. 138). Although the results of the program were hard to quantify, in two years the loss of female managers was down 25% and gender issues were more openly explored by both men and women in differing levels of the organization.

Videoconferencing

The once elite technology of videoconferencing or satellite broadcasting has been rapidly accepted and utilized by more trainers and mid-level managers in corporations due to decreasing equipment costs, ease of use, and greater functionality (Fister, 2000). In *Training's* most recent Annual Industry Report, 42% of those companies surveyed said that they utilize videoconferencing in their employer-sponsored training programs (Galvin, 2002).

Several methods of videoconferencing are available for the delivery of training programs. Asynchronous computer conferencing uses computers as the delivery system and provides interaction among trainer and trainee in an electronic setting. A full course can be taught on-line, and employees access information when it is convenient for them. Video teleconferencing, on the other hand, is interactive and allows the trainer and participants to interact live from remote locations. These sessions can be and oftentimes are videotaped for use after the training has commenced (Munger, 1997).

Videos

Videos are often thought of as the most basic form of training media, and are used in conjunction with classroom lecture and also as a source of self-motivated learning. If the training material on a video is well done, it can be an excellent source for presenting

information to employees. Developmental costs are minimal in comparison with most other methods, however development time can be substantial depending on the subject matter (Munger, 1996).

Criteria for Training Programs

On average, organizations spend over two hundred billion dollars every year on employee training and development. To most, this may seem rather extravagant; however, successful organizations realize well-structured and meaningful employee training programs are strongly correlated with long-term success (Stanley, 2002). Therefore, several factors such as economic feasibility, flexibility, perceived value and quality, timeliness, and length of the training program are seen as essential considerations in the initial decision making processes. According to Galvin (2002) all of these factors are critical considerations to business and industry in the design and implementation of training programs, whether they are classroom based or web based. Each of these criteria deserves attention and will be discussed separately in the sections to follow.

Economic

Money spent on training is vitally important particularly when considering the continued decline of economic conditions, yet training budgets continue to fall, especially after the terror attack on September 11, 2001 (Galvin, 2002). "In the worst cases, up to 33% of some companies' training programs simply weren't held. For others, there were, and still are … far fewer employees to train" (p. 25). Again, support was found for both the classroom-based and web-based approaches to training. Nevertheless, the question remains regarding which method provided the best economic conditions. This issue remained unclear due to the festering debate among the two.

Pantazis (2002) identified a strong economic incentive for business to embrace e-learning due to its potential for low-cost implementation. She claimed that the implementation of high quality e-learning could significantly reduce the amount of time it takes to train workers on new products and processes. Training that typically would take 6 to 9 months can be compressed to 2 to 3 weeks, thereby guaranteeing faster time-to market for products.

Pantazis (2002) claimed the reduced costs of workplace training as an additional benefit of e-learning. After the initial infrastructure and development costs are met, the marginal cost of serving additional students is close to zero. For example, Cisco Systems' e-learning manufacturing programs produced savings of $1 million per quarter, while they claim an 80% increase in speed to competence.

Smith (1999) also pointed out the reduction of training costs with the use of e-learning technologies since many businesses see classroom-based training as too expensive, and by some staff as too intimidating. He saw changes in training programs caused by the merging of video and computers and, more recently, the merging of these technologies with the latest communications media. These mergers enabled trainers to harness the power of computer-based training while providing e-learning experiences at reduced training costs.

Conversely, Carnevale and Shulz (1998) asserted the opposite and said the ratio of development time to instruction time is 50:1 for classroom-based training and 100:1 for e-learning methods. Therefore, trainers can realize significant savings in development time if they can use a training method, such as one that is classroom-based, that needs relatively short development time but still achieves learning objectives.

Economic considerations have been deemed important to business and industry in both classroom-based and e-learning training methods. The debate as to which method provides the best economic payback is inconclusive at this point based in the literature reviewed.

Flexibility

Flexibility of the training program is also critical as it will provide employees with the alternative learning environments that can be adaptable to individual learning styles and offer support and resources as needed (Stanley, 2002). One example is BAE Systems' Virtual University (VU) where flexibility and friendliness were a primary focus in the development of employee training classes (Davis, 2001). The delivery of learning is offered both online and non-online and covers life skills, technical skills and non-work related skills. The VU has a network of physical Learning Resource Centers where instruction is delivered by video, CD-Rom, audiotape and the Internet, which in turn makes learning opportunities available when people want it and where they want it. Using a combination of these teaching methods the employees have more choices in their training programs, participate more, and have a higher investment in their individual learning experiences.

Perceived Value and Quality

Training programs are valuable in the sense that they contribute to the overall organizations' strategic direction and practices. While more companies are increasing their training budgets, estimates suggest the actual return on their investment to be rather low (Montesino, 2002). One study estimated that no more than 10% of these expenditures typically result in transfer to the job (Baldwin & Ford, 1988).

In a survey of 250 sales representatives from a Fortune 200 pharmaceutical company who participated in a targeted sales training program, a significant portion of the subjects reported more usage of training on the job and engaged in more transfer-enhancing behaviors as they saw more alignment, or value, of the training program with the strategic direction of the organization. Montesino (2002) stressed the "need for building partnerships among trainers, trainees, and managers to support training usage" (p.98). Subjects of this study expressed more commitment to the strategic direction of the company as they reported being more informed about it. These findings point to the suggestion that a more conscious effort should be made to inform employees about the company's strategic direction, as a way of eliciting understanding and support for a training strategy (Montesino, 2002).

Timeliness of Programs

Determining when training is most needed, or the timeliness of the program, must be addressed in order to provide training that will be most beneficial to employees and the business as a whole. According to Bryans and Smith (2000), training programs should be offered when, and only when, the training program will enhance business goals. This just-in-time access to training opportunities can increase employees' individual job satisfaction as well as fulfilling business objectives.

Length of Programs

Although literature on the length of training programs is scarce, this issue is one that must be considered throughout the design of a training plan. Length of training programs, whether web-based or classroom-based, poses an interesting dilemma for both trainers and management.

A full-day class allows the instructor to cover more material and give momentum in learning the content. However, the downside tends to be that many students become less attentive in early afternoon due to information overload. In addition, people find it difficult to be away from their office and responsibilities for a full day (Leifer, 1997).

On the other hand, half-day classes tend to sustain student engagement and decrease the amount of information processed in one sitting. In light of these findings, Leifer's (1997) recommendation was to provide a condensed class over a three to four hour training session. The retention rate of students was much higher and the student gained more flexibility in their workday.

Results of Employer Investment in Training

The previous sections outlined current training practices found throughout businesses and industries as well as specific criteria and instructional methodologies that must be considered. These are critical elements in the design and implementation of employee training; however, positive, tangible results are the intended outcome.

Employers invest in employee training as a method to meet a need or solve a problem within the company. Corporations oftentimes rely on training to provide a solution to undesirable business situations or assist in the enhancement of current practices. Due to increasing international competition in today's economy, companies must empower their employees and develop the skills of their workforce to maximize productivity and profits. The fast-moving, ever-changing global economy calls for a new work order and requires a flexible, multi-skilled, knowledgeable, interchangeable and adaptable workforce at all levels. Employee training provides employers an opportunity to attain this desirable workplace situation (Phakathi, 2002). Specific employee training

benefits such as increased profits, higher productivity rates, lower turnover rates, and increased company loyalty were revealed throughout the literature. These areas will be discussed throughout the paragraphs below.

Increased Profits and Productivity

A 2001 study performed by the Organization for Economic Cooperation and Development (OECD) revealed several incentives for employers to invest in training including increased profitability and productivity. "Training will increase profits if it results in sizeable productivity gains and if the productivity gains are not fully appropriated by the trained workers in the form of higher wages" ("Investment in Human Capital," p.151). These findings suggest that employer-sponsored training is profitable and that employers have a strong incentive to offer training to their employees.

When applied to the health care workplace, training was cited as an essential investment in an effort to combat employee ignorance on the job. The cost of ignorance can include lost productivity, workforce shortages, employee dissatisfaction (leading to increased turnover), problems with regulation and law compliance, and patient-safety concerns. Ignorance has a significant cost and cannot be overlooked. Effective and efficient training practices have helped to combat these issues and provided a direct return on a companies' investment in training. The return is oftentimes openly questioned, especially when training increases costs in a field where revenues are often flat or possibly declining. However, effective training practices provided unquestionable positive results (Clarke, 2002).

Another area poised for corporate productivity gains is in the updating of technology training for employees. Many organizations find traditional training to be

inflexible and a huge expense. For example, J.P. Morgan Chase chose to implement a web-based electronic learning program for its employees. The cost of traditional extended training efforts were significant, and by the time employee training was completed, the information was outdated. The implementation of the web-based e-learning programs decreased training expenditures, provided faster training and resulted in increased profits for the company (Anderberg, 2001).

E-learning is one of the advances that will help organizations improve their employees' knowledge base in a more cost-effective and real-time manner. Anderberg (2001) stated that corporate training was the fastest-growing segment of the e-learning market, and is expected to become a $23 billion market by 2005. An important productivity improvement e-learning brings to the corporate table is savings on travel time and costs. “Cisco, for example, is using a learning management system provider to deliver information and training to its 10,000-person sales team. When implemented the system will allow Cisco to provide new product updates to the sales force” (Anderberg, 2001, p. 6). This training program saved time and money while giving the sales force important information in a timely fashion, which translated into quicker sales and a competitive advantage.

Company Loyalty and Decreased Turnover Rates

Much has been made of the value to companies of loyalty – especially the loyalty of their employees. The economic benefits of employee loyalty are real enough. They include lower recruitment and training costs, decreased turnover rates, higher productivity of experienced workers, and the positive effect that such workers have on customers and future employees (“Business,” 2001). In the present economic downturn,

some companies are trying to hang on to these benefits through the renovation of current training practices. The following paragraphs illustrate several examples.

A small services organization with 120 employees consistently experienced significant turnover in the company during the first 90 days of employment. While the overall employee turnover rate was consistent with industry standards (about 15%), the new hire turnover rate was more than double that of competitors. An employee turnover analysis conducted by WorkRelationships, Inc. (2002) indicated that this was costing this organization approximately $9,000 per employee and during the last year the business lost 10 managers, 15 supervisors, and 18 non-supervisors. Training programs that focused on utilizing existing resources to create greater organizational commitment were developed and implemented. For example, a voluntary new hire mentoring program was put into place and a financial incentive was provided to experienced service technicians who were willing to train and coach new hires. A one-day management training class was implemented for service managers, which focused on improving hiring choices, improving realistic job previews, and developing individual performance plans for new hires. As a result of this implementation, tightened recruitment and hiring practices evolved and new hire voluntary turnover was cut in half within six months (WorkRelationships, 2002).

ServiceMaster Clean, a national franchise of cleaning services, also implemented a training program to control turnover. The company conducted quarterly training workshops for its managers and franchisees to reinforce and internalize much needed management skills. A company intranet and a biweekly newsletter containing articles, updates, and success stories were developed to provide additional support for new

practices. Franchisees also receive data to track and improve their progress against other operations in their region. These training practices resulted in lower turnover rates and an increase in profits and productivity (Emmerich, 2001).

Chapter Summary

The previous sections have outlined current practices in employee development and provided a synopsis of training methodologies used in web-based and traditional classroom-based instruction. Instructional methods such as the use of computer software, self-study materials, videoconferencing, and videotapes and the criteria businesses and industries used in the selection of these methods were also addressed.

Chapter 3

Methodology

Introduction

This chapter describes the (a) specific research methodology used, (b) research procedures selected to answer the stated research questions, (c) procedure used to analyze the data collected in the study, (d) method used to identify the population, and (e) development of the instrument. To provide a comprehensive understanding of the research methods employed, this chapter is organized into five main sections: research methodology, identification of population, instrumentation, procedures for data collection, and method of data analysis.

As stated in Chapter 1, the three purposes of this study were to (a) establish a profile of the current training practices of selected businesses and industries in Southwest Virginia; (b) identify the type of training methods these companies are choosing— such as traditional classroom training, web-based training programs and (c) identify how the training methods are selected. This profile established baseline data for current business and industry employee training programs. Businesses and industries who participated in workforce development programs offered by community colleges located in the southwest region of Virginia were selected to obtain information. The following research questions were investigated:

1. What is the profile of selected businesses and industries that offer employee training programs in Southwest Virginia (SWVA)?
2. What training methods are selected businesses and industries currently using in SWVA?

3. Of those training methods used, is a particular method used to train for a specific skill set, i.e. motivation, safety practices, computer skills, etc.?
4. What criteria were used to select a particular employee training method?

Research Methodology

Researchers select survey research methodology because of its applicability to various units of analysis while also offering specific techniques for studying particular topics of interest (McMillian & Schemacher, 1984). In this particular study, descriptive data from each participating business and industry were collected using an Internet survey instrument and reported in quantitative format. The descriptive quantitative methodology was used so survey data could be presented in a form that provides (a) an accurate picture of the phenomena, (b) an identification of the conditions, practices and problems currently existing, and (c) a framework that will enable future researchers to develop research activities that can investigate similar situations and/or specific problems (Issac & Micheal, 1981).

The main purposes of collecting data with a survey instrument are to provide for descriptive assertions of a population, offer explanations regarding a population, and delve into deeper exploration of a topic (Babbie, 1990; Kalton, 1983). The collection of descriptive data also permits a researcher to formulate theories that can later be tested and confirmed using quantitative methods (Reichardt & Cook, 1979). Surveys are a commonly accepted and widely used method for collecting information about people's attitudes and behaviors from their perspective; especially in the area of educational research (Sudman & Bradmun, 1983). Best and Kahn (1986) stated that survey research has unique advantages and, if properly conducted and implemented, may serve as an

appropriate and useful data-gathering device. The survey data collection method solicits the descriptive data sought by this researcher and was also selected for this particular study since it enabled the researcher to "… explore concepts and phenomena that have not been previously studied" (Chacko & Nebel, 1999, p. 384).

Additionally, the survey instrument was prepared for participants to access via the Internet. Hoyle et al. (2002) and Birnbaum (2000) mentioned the deficiency of research on Internet collection methods, and went on to describe obvious advantages and disadvantages. Advantages included access to a diverse population at a relatively low cost, flexibility for participants to provide information at the time and place of their choosing, quick response rates, data collection in an electronic format, lower administrative costs and error-checking for individual survey items. Disadvantages cited were differences in interfaces, lower response rates than with the mailed survey, legitimacy of identity, and participant dropout rates. These disadvantages warrant attention and can be minimized during the administration of the data collection procedure.

Based on the purpose of the study, the nature of the research questions, and the type of information sought, an Internet-based survey instrument was deemed the best method to use in collecting information pertaining to the current employee training practices of selected businesses and industries in Southwest Virginia.

Identification of Population

Overview

Southwest Virginia (SWVA) sustained substantial economic loss during 2001 and 2002 and was identified by Governor Warner, in his *State of the Commonwealth* speech,

as an area hard hit and in need of workforce development (2002). The need for employee training is both unquestionable and of paramount importance to the economic survival of businesses and industries in this region.

A recent Virginia Community College System (VCCS) publication, *Meeting Virginia's Critical Needs,* stated, "the Virginia economy is going through a significant transformation requiring more highly skilled workers, particularly in technology areas" (2002, p.1). Businesses and industries that have largely unskilled workers are most susceptible to the negative repercussions that advances in technology can produce. To minimize the threats businesses and industries in SWVA have to their survival, employee training must become an important element in their organization. The VCCS's Workforce Development System continues to be utilized to ease the stress of this transformation by bringing customized employee training and retraining to businesses and industries throughout the Commonwealth.

Defining the Population

The population of this study included every business and industry that had participated in workforce development programs provided by community colleges located in the southwest region of Virginia during years 2001 and 2002. Using these criteria, the researcher solicited data from 205 organizations.

The list of all businesses and industries in Southwest Virginia that had participated in the workforce development initiative during years 2001 and 2002 was obtained from representatives of the Workforce Development System (WDS) in each of the five service regions (see Appendix A). The service regions and number of businesses in each included: Wytheville Community College (82 businesses), New River

Community College (46 businesses) Mountain Empire Community College (39 businesses), Virginia Highlands Community College (six businesses), and Southwest Virginia Community College (32 businesses).

The WDS contact person for each region was listed on the VCCS Workforce Development website. The researcher contacted Mr. Ron Daniel, the Director of New River Community Colleges' Workforce Development program, who verified the contact person for each of the five southwest regions. Each regional representative was then mailed a letter requesting contact information for all businesses and industries within their community college system that participated in their workforce development initiative during the years 2001 and 2002 (see Appendix B).

Instrumentation

The instrument used in the study (see Appendix C) was created with a survey template from the Center for Excellence in Undergraduate Teaching at Virginia Polytechnic and State University, as well as suggestions taken directly from Babbie's (1990) chapter on "Conceptualization and Instrument Design." Using Birnbaum's (2000) book *Psychological Experiments on the Internet* as a guide, the survey was then prepared for access online. Since a survey was the sole method of soliciting information from the population, it was imperative that the survey be designed to ensure instrument integrity. Anytime a survey instrument is used to collect data, three factors must be considered. First, are there an adequate number of items on the instrument to provide the researcher with sufficient information to answer each of the research questions? Second, were the items on the instrument appropriate to answer the research questions asked? Third, were the items stated in a manner that could ensure the responses attained were reliable? With

these three questions in mind, the researcher initiated the instrument design and development process.

Instrument Design and Development

The survey instrument was divided in three different sections–respondent profile, training methodology, and training criteria–and is discussed in the sections below. The formats for each of the items, as well as the category titles, were determined by previous studies identified in the literature review process outlined in chapter two. The items included on the survey instrument were developed to reflect those variables identified in the literature and deemed important to answering the stated research questions. Subject matter experts (SMEs) were used to verify the appropriateness of the specific categories and to establish instrument validity. Next, a pilot test was implemented to ensure that the data collection procedure worked appropriately and thus could substantiate instrument reliability. The division of the survey sections, the use of subject matter experts, and implementation of the pilot study are discussed in the sections below.

Survey section 1. Respondent profile. The seven questions asked in Section I, Respondent Profile, were used to answer research question #1, "What is the profile of selected businesses and industries that offer employee training programs in Southwest Virginia?" Profile data gathered from those participants who answered "NO" to question #5, "Do you offer training programs?" was reported and analyzed separately from those who answered "YES."

Survey section II. Training methodology. Of the eight questions asked in Section II, Training Methodology, seven items were assigned to provide information that was used to answer research question #3, "Of those training methods used, is a particular

method used to train for a specific skill set?" Item number nine in this section was used to solicit the information necessary to answer research question #2, "What employee training methods are selected businesses and industries currently using in Southwest Virginia?"

Survey section III. Training criteria. The six questions asked in Section III, Training Criteria, were used to answer research question #4, "What criteria were used to select a particular employee training method?"

Subject matter experts. Subject matter experts (SMEs) were used to aid in the revision of the survey categories, individual items and to establish validity. According to Noe (1999), SMEs "are employees, managers, technical experts, and trainers…who are knowledgeable in regards to (1) training issues including tasks to be performed, (2) knowledge, skills, and abilities required for successful task performance, (3) necessary equipment, and (4) conditions under which the tasks have to be performed" (p. 53). Therefore, the SMEs in this study consisted of eight members of the Roanoke Valley chapter of the American Society for Training and Development (ASTD) who met Noe's (1999) four conditions. Specifically, these SMEs were training professionals who were currently employed full time in a training position, have a minimum of five years training experience, and have previously participated in the design and implementation of diagnostic instruments.

To ensure validity, or the extent to which the survey instrument measures what it is supposed to measure, SMEs were asked to read each item and indicate if the item was clearly stated, free of ambiguity, properly formatted, and content appropriate (Ary, Jacobs, & Razavich, 1990). Once they had completed this portion of the review process,

they were next asked to identify those statements that may need to be added, reworded, or removed from the survey instrument. These decisions were made by comparing each item on the survey with the four stated research questions. Additionally, the subject matter experts were asked to provide an explanation for those questions deemed unsatisfactory and offer a correction for the survey item. Each SME was given two weeks to review and suggest improvements for the survey instrument. Once all responses were received, the survey instrument was revised where appropriate.

Pilot test. Fink (1995) stated that ten people are typically needed to pilot test an instrument. To ensure reliability, or the degree of consistency with which the instrument measures the concepts identified (Ary, Jacobs, & Razavieh, 1990), the researcher implemented a pilot test procedure using three graduate students at Virginia Tech, three instructors at New River Community College, and four local business owners. The pilot test provided the researcher an opportunity to assess where the on-line data collection procedure worked smoothly and where it needed revision. Once the on-line instrument was revised, the collection of data commenced.

Collection of Data

Researchers at Virginia Tech, or representing Virginia Tech, must obtain permission from the Institutional Review Board to use human subjects in their studies. The necessary approval forms were submitted to the IRB and approved (see Appendix D). All information for the study was collected from the participants via the survey instrument described above. Each subject received the same initial cover letter stating the purpose of the research (see Appendix E). Included in the letter, participants were asked to complete the survey on-line. A web address and an authorization code were included

in the third paragraph of the letter. The authorization code was used for identification and analysis purposes so that the researcher could track participants who responded, determine individual response dates, and distinguish non-respondents. Participants who did not have Internet access or chose not to complete the survey on-line were mailed a printed copy of a coded survey (see Appendix C) and a self-addressed stamped envelope for the convenient return of the completed instrument.

Timeline

For identification and analysis purposes, each survey response was coded and tracked as to the return date. Babbie (1990) suggested that three mailings (an original and two follow ups) seem to be most efficient in increasing the return of survey data. The follow-ups should occur no more than two to three weeks after the initial mailing. Therefore, to further increase the return rate, two follow-up mailings were disseminated in seven-day increments after the initial date of mailing (see Appendices F and G). After 21 days, those individuals who did not complete the survey were designated as non-respondents. The procedure for contacting non-respondents will be discussed in the following section.

Method of Data Analysis

Descriptive analyses were used to organize, summarize, and describe the data collected from all participants (Ary, Jacobs, & Razavich, 1990). Frequencies and percentages were calculated and reported for each survey item to give a "visual sense of the general magnitude of the numbers involved" (Howell, 1997, p. 34) for each question. Profile data gathered from those participants who answered "NO" to question #5, "Do

you offer training programs?" was reported and analyzed separately from those who answered "YES."

Additionally, the researcher contacted via telephone those respondents who returned incomplete surveys. The purpose of this telephone call was to ask the participants to supply any additional information that was missing on their survey instrument. Those participants who chose not to supply missing information on their survey were considered a non-respondent.

Non-respondents

Non-respondents are also an important consideration during data collection. The non-respondents group may differ in crucial respects to the respondent group (Dillman, 2000; de Vaus, 1996). Therefore, those participants who did not return a completed survey electronically or via regular mail by the twenty-first day after the initial mailing were considered non-respondents. Moser (1958) suggested that follow-ups to non-respondents need not complete the entire survey, so a phone interview was conducted to elicit answers to key questions one through five, and nine.

A specific procedure was used to select a sample of 25 non-respondents and elicit data via a telephone interview. The procedure was as follows:

1. Participants were identified as either a respondent or non-respondent.
2. Those businesses and industries who were designated as a non-respondent were put in a list based on the order they were contacted initially.
3. The researcher selected the first name on the list and then proceeded to select every fifth person throughout the list.

4. The participants were contacted via telephone and asked to answer questions one through five, and nine.
5. Frequencies and percentages were produced for those survey items in which the selected non-respondents answered.
6. The non-respondent group data were then compared to the respondent group data using the same survey items.

These results were used to determine whether respondent group was similar to the non-respondent group.

Summary

The purpose of Chapter 3 was to provide an explanation of the research methodology to be used in the study, identify the population, give details regarding the instrumentation to be used, tell how the data were collected and describe the method of analysis implemented.

Chapter 4

Findings

The three purposes of this study were to (a) establish a profile of the current training practices of selected businesses and industries in Southwest Virginia; (b) identify the type of training methods these companies are choosing—such as traditional classroom training, web-based training programs, and (c) identify how the training methods are selected. This study established baseline data regarding employee training programs for businesses and industries that had participated in workforce development programs offered by community colleges in the southwest region of Virginia over the past two years. This chapter includes the Research Questions, Population, Findings from the Data Collection, Non-Respondent Follow-Up, and a Chapter Summary.

Research Questions

Four research questions guided the study.

1. What is the profile of selected businesses and industries that offer employee training programs in Southwest Virginia (SWVA)?
2. What training methods are selected businesses and industries currently using in SWVA?
3. Of those training methods used, is a particular method used to train for a specific skill set, i.e. motivation, safety practices, computer skills, etc?
4. What criteria were used to select a particular employee training method?

Population

The population of this study included every business and industry that had participated in workforce development programs provided by community colleges

located in the Southwest region of Virginia within the past two years. Using these criteria the researcher solicited data from 205 organizations.

The list of all businesses and industries in Southwest Virginia participating in the workforce development initiative during 2001 and 2002 was obtained from representatives of the Workforce Development System (WDS) in each of the five southwest regions (see Appendix A). The service regions and number of businesses in each include: Wytheville Community College (WCC) with 82 businesses, New River Community College (NRCC) with 46 businesses, Mountain Empire Community College (MECC) with 39 businesses, Virginia Highlands Community College (VHCC) with 6 businesses, and Southwest Virginia Community College (SWCC) with 32 businesses. Of the 205 businesses surveyed, 88 responded after three mailings. Table 1 shows the total number of participants who responded to each of the three mailings used to collect data and whether the participants responded via the Internet or regular mail. Table 2 shows the number of participants that responded from each of the five service regions.

Table 1

Cumulative Returns from Individual Mailings

Group	Mailed	Cumulative Returned Via Regular Mail	Cumulative Returned Via Internet	Cumulative Percentage
First Mailing	205	2	43	22.0%
Second Mailing	160	4	69	35.6%
Third Mailing	132	4	84	42.9%

Table 2

Cumulative Returns by Service Region

Service Region	Group	Mailed	Cumulative Returned	Cumulative % Within Region	Cumulative % of n
WCC					
	1st Mailing	82	22	26.8%	
	2nd Mailing	60	37	45.1%	
	3rd Mailing	45	44	53.6%	
	Cumulative % of n		44		50.0%
NRCC					
	1st Mailing	46	13	28.3%	
	2nd Mailing	33	17	37%	
	3rd Mailing	29	19	41.3%	
	Cumulative % of n		19		21.6%
MECC					
	1st Mailing	39	5	12.8%	
	2nd Mailing	34	8	20.5%	
	3rd Mailing	31	11	28.2%	
	Cumulative % of n		11		12.5%
VHCC					
	1st Mailing	6	1	16.7%	
	2nd Mailing	5	1	16.7%	
	3rd Mailing	5	1	16.7%	
	Cumulative % of n		1		1.1%
SWCC					
	1st Mailing	32	4	12.5%	
	2nd Mailing	28	10	31.3%	
	3rd Mailing	22	13	40.6%	
	Cumulative % of n		13		14.8%

Note: n=88 including four blank surveys

Of the 88 returned surveys shown in Tables 1 and 2, four were submitted with no information and deemed unusable. These four surveys are not included with the explanation of findings.

Twelve surveys were returned with only a portion of the survey completed. The researcher contacted these respondents by phone and asked them to supply the missing data. Five respondents agreed to provide all missing data. Seven respondents decided not to provide any additional information for unknown reasons, and only the partially completed information from these surveys was included in the data analysis. A notation of their termination of participation is indicated in the appropriate table within the findings section.

Non-Respondent Follow-Up

A non-response study was performed to determine if differences existed between those persons who returned a survey and those who did not. Ary, Jacobs, and Razavieh (1990) stated that "using information only from those who choose to respond can introduce error, because the respondents represent a self-selected group that may not represent the views of the entire population" (p. 460). To control possible error, the researcher systematically selected 25 subjects or 21.4% of the 117 non-respondents. The specific procedure used to select a sample of 25 non-respondents was as follows:

1. Participants were identified as either a respondent or non-respondent.
2. Those businesses and industries that were designated as a non-respondent were put in a list based on the order they were contacted in the first mailing.
3. The researcher selected the first name on the list and then proceeded to select every fifth person throughout the list.

4. Using the survey as an interview schedule, the participants were contacted via telephone over a period of five days and asked to answer key questions one through five, and nine.
5. Frequencies and percentages were tabulated for those survey items from the telephone-solicited responses.
6. The non-respondent group frequencies were then compared to the respondent group frequencies using the same survey items.

Out of the selected 25 subjects, a total of 12 subjects agreed to participate in phone survey giving a 10.3% response rate for the non-respondent study. From these results, the conclusion was that the non-respondents were similar to the respondent group. Therefore, the two groups are similar and data collected from the respondent group can be interpreted as representative of views from the entire population. Findings from the non-respondents are presented in Table 24.

Table 3

Non-Respondent Data

Criteria	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	12	4	2	3	1	2	100.0
Survey Question 1 Description of Business							
Manufacturing	4	2	2	0	0	0	33.3
Educational Services	2	0	0	1	1	0	16.7
Public Admin./Govt. Agency	2	0	0	1	0	1	16.7
Health Services	1	0	0	0	0	1	8.3
Investment/Insurance/Banking Services	1	1	0	0	0	0	8.3
Other	1	0	0	1	0	0	8.3
Business Services	1	1	0	0	0	0	0.0
Communications/Public Utilities	0	0	0	0	0	0	0.0
Construction	0	0	0	0	0	0	0.0
Legal Services	0	0	0	0	0	0	0.0
Media	0	0	0	0	0	0	0.0
Real Estate	0	0	0	0	0	0	0.0
Transportation	0	0	0	0	0	0	0.0
Wholesale/Retail Trade	0	0	0	0	0	0	0.0
Survey Question 2 Description of Department							
Human Resources	7	3	2	2	0	0	58.3
Other	5	1	0	1	1	2	41.7
Accounting/Finance	0	0	0	0	0	0	0.0
Customer Service/Order Processing	0	0	0	0	0	0	0.0
Distribution/Logistics	0	0	0	0	0	0	0.0
Information Technology	0	0	0	0	0	0	0.0
Legal/Compliance	0	0	0	0	0	0	0.0

Marketing	0	0	0	0	0	0	0.0
Planning/Design	0	0	0	0	0	0	0.0
Production	0	0	0	0	0	0	0.0
Purchasing	0	0	0	0	0	0	0.0
Quality Control	0	0	0	0	0	0	0.0
Research and Development	0	0	0	0	0	0	0.0
Safety	0	0	0	0	0	0	0.0
Sales	0	0	0	0	0	0	0.0
Training & Development	0	0	0	0	0	0	0.0
Survey Question 3 Number of Employees							
≤ 50	2	0	0	1	0	1	16.7
51-100	3	1	0	0	1	1	25.0
101-500	5	2	2	1	0	0	41.6
>500	2	1	0	1	0	0	16.7
Survey Question 4 Job Position							
Management	10	3	2	3	0	2	83.3
Non-management	2	1	0	0	1	0	16.7
Survey Question 5 Is In-house Training Provided							
Yes	12	4	2	3	1	2	100.0
No	0	0	0	0	0	0	0.0
Survey Question 9 Delivery Methods Used							
Classroom-Based	12	4	2	3	1	2	100.0
Videos	11	4	2	3	1	1	91.7
Self-Study	9	3	1	2	1	2	75.0
Computer Software/CD-ROM	6	1	1	2	1	1	50.0
Web-Based	5	0	1	3	0	1	41.6
Satellite/Videoconferencing	3	0	0	2	0	1	25
Don't Use Any of these Instructional Methods	0	0	0	0	0	0	0.0

Findings by Sections

To obtain information that could be used to answer the four research questions, the survey instrument was divided in three different sections–Respondent Profile, Training Methodology, and Training Criteria. Survey section one, Respondent Profile was used to answer research question one. Survey section two, Training Methodology was used to answer research questions two and three. Survey section three, Training Criteria, was used to answer research question four. These findings are reported in Tables 4-24.

Research Question One

(1) What is the profile of selected businesses and industries that offer employee training programs in Southwest Virginia?

The seven survey questions asked in Section I, Respondent Profile, were used to answer research question one. Tables 4 through 10 give the frequencies for the type of business, description of department, management or non-management position, number of employees, businesses that do and do not offer training programs, those businesses that include and don't include training within their human resources department, and the changes anticipated in the business' training programs within the next year.

The two types of business represented most are manufacturing (29.7%) and education (26.2%). Wholesale/retail trade (0%), communications (0%), media (0%), legal services (0%) real estate (0%), and business services (1.2%) were either not represented or represented the least. The participants (8.3%) who marked the other category indicated that their type of business was not listed. They were asked to specify their type of business, and their responses included the following:

- NRCC Region – engineering/consulting
- MECC – three participants with coal mining, one consulting/engineering, and one response was blank.

Complete results regarding the types of businesses surveyed are in Table 4.

Table 4

Survey Question #1 - Which of the following best describes your business?

Type of Business or Industry	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Manufacturing	25	16	8	0	0	1	29.8
Educational Services	22	13	4	1	0	4	26.2
Public Administration/Govt. Agency	13	5	3	1	0	4	15.5
Health Services	8	4	1	1	0	2	9.5
Other	7	0	1	6	0	0	8.3
Investment/Insurance/Banking Services	4	2	1	0	0	1	4.8
Construction	2	0	1	1	0	0	2.4
Transportation	2	1	0	0	1	0	2.4
Business Services	1	1	0	0	0	0	1.2
Communications/Public Utilities	0	0	0	0	0	0	0.0
Legal Services	0	0	0	0	0	0	0.0
Media	0	0	0	0	0	0	0.0
Real Estate	0	0	0	0	0	0	0.0
Wholesale/Retail Trade	0	0	0	0	0	0	0.0
Totals	84	42	19	10	1	12	100.0

When describing departments, no participants answered that they worked in marketing, quality control, distribution/logistics, or legal/compliance. Few participants indicated that they worked in accounting (1.2%), purchasing (1.2%), planning (1.2%), or

customer service (1.2%) departments. The "Other" category ranked highest with 36.9%. Responses specified in this category included the following:

- WCC region - administration, high school, counseling/advising, instruction, instructional services, public education, building official, management, supervision, administration, management/administration, at a given time all of the above, dental services, general information, administration, and one response was left blank
- NRCC region - training, administration, all, administration, education, instructional technology, administrative, imports
- MECC region - general management, all above, instructional technology, executive management
- SWCC region – management, administrative, local assessing office, and benefits and services.

Table 5 reveals complete data regarding the participants' description of their department.

Table 5

Survey Question #2 - Which of the following best describes your department?

Description of Dept	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Other	31	16	8	3	0	4	36.9
Human Resources	26	12	7	4	0	3	31.0
Training & Development	9	5	1	0	0	3	10.7
Safety	6	3	0	3	0	0	7.1
Production	4	4	0	0	0	0	4.8
Information Technology	2	1	0	0	0	1	2.4
Sales	2	0	2	0	0	0	2.4
Accounting/Finance	1	0	1	0	0	0	1.2
Customer Service/Order Processing	1	0	0	0	1	0	1.2
Planning/Design	1	0	0	0	0	1	1.2
Purchasing	1	1	0	0	0	0	1.2
Distribution/Logistics	0	0	0	0	0	0	0.0
Legal/Compliance	0	0	0	0	0	0	0.0
Marketing	0	0	0	0	0	0	0.0
Quality Control	0	0	0	0	0	0	0.0
Research and Development	0	0	0	0	0	0	0.0
Totals	84	42	19	10	1	12	100.1[a]

[a] Total % does not add up to 100% due to rounding error.

The data presented in Table 6 indicated that 40.5% of businesses surveyed had 101-500 employees. The second largest group with 26.2% was businesses that have 50 or fewer employees. Complete results are listed in Table 6.

Table 6

Survey Question #3 – Approximately how many full-time employees does your organization have?

Employees	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
≤ 50	22	15	4	2	0	1	26.2
51-100	12	8	1	1	0	2	14.3
101-500	34	13	10	4	0	7	40.5
>500	16	6	4	3	1	2	19.0
Totals	84	42	19	10	1	12	100.0

Note: The range of employees was derived from the scale used by the Virginia Department of Labor Statistics (2002).

Data in Table 7 shows that 91.7% of respondents held management positions and 8.3% held non-management positions. All of the non-management responses came from the WCC region.

Table 7

Survey Question #4 – How could your job description best be described?

Group	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Management	77	37	19	10	1	10	91.7
Non-Management	7	5	0	0	0	2	8.3
Totals	84	42	19	10	1	12	100.0

Ninety-four percent of participants indicated that they do provide some type employee training. The remaining 6% that did not provide any type of employee training were from the WCC (4.8%) and NRCC (1.2%) regions.

Profile data gathered from those participants who answered that they do not provide employee training was reported and analyzed separately from those who

answered that they do provide employee training. Only those 79 participants (94%) who answered that they do provide employee training were asked to continue responding to the remaining survey items. The five participants (6%) who answered that they did not provide employee training contributed no additional information to the research. Complete findings can be found in Table 8.

Table 8

Survey Question #5 – Does your organization provide in-house training for your employees?

Group	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Provides Training	79	38	18	10	1	12	94.0
Does Not Provide Training	5	4	1	0	0	0	6.0
Totals	84	42	19	10	1	12	100.0

When questioned about the location of their training department, 43% of participants responded that their training department was separate from human resources, 34.2% indicated that their training department was located within human resources, and 22.8% were unsure. See Table 9.

Table 9

Survey Question #6 – Is your training department separate from human resources?

Group	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Training Dept Separate	34	15	5	7	1	6	43.0
Training Included with HR Dept	27	16	9	0	0	2	34.2
Not Sure	18	7	4	3	0	4	22.8
Totals	79	38	18	10	1	12	100.0

When asked about the anticipated changes to their training program in the next year, participants were asked to mark all options that apply to their training situation. Most respondents (60.8%) indicated that they expect an increase in their training programs, whereas 2.7% expect a decrease in training programs. No participants planned to remove their training facility. The participants (4.1%) that indicated they anticipated a change not listed were asked to specify their answer in the "Other" category. All were from the NRCC region; and their responses were to provide more individualized training, continue current training programs, and develop a continuous improvement program. Specific findings are revealed in Table 10.

Table 10

Survey Question # 7 - What changes do you anticipate in your training program in the next year?

Changes	Frequencies by Region						
	n [a]	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	79	38	18	10	1	12	100.0
Increase in training programs	45	19	13	5	0	8	60.8
Decrease in training programs	2	1	1	0	0	0	2.7
Purchase more training materials	20	7	7	2	0	4	27.0
Purchase less training materials	1	0	1	0	0	0	1.4
Move toward more web-based training	19	7	3	3	1	5	25.7
Move toward more classroom-based training	9	2	2	2	0	3	12.2
Provide more training space	10	1	5	1	1	2	13.5
Remove training facility	0	0	0	0	0	0	0.0
Increase training staff	16	8	4	2	0	2	21.6
Decrease training staff	2	0	1	0	1	0	2.7
No changes anticipated	17	12	1	2	0	2	23.0
Other	3	0	3	0	0	0	4.1

Review of Findings for Research Question One

Research question one was stated as "What is the profile of selected businesses and industries that offer employee training programs in Southwest Virginia?" Sevensurvey questions were developed to obtain this information. The data collected revealed that manufacturing was the industry most represented while wholesale/retail trade, communications, media, legal services and real estate had no representation. The majority of respondents indicated that they worked in management positions within their

respective human resources departments. Forty percent of businesses indicated that they employed at least 101 and no more than 500 persons. The majority of these businesses do provide some type of employee training. A small majority of the respondents indicated that their training departments were separate from human resources, but it is worth noting that several participants stated that their training department was included with human resources. The results of the data also revealed that a majority of businesses expected some type of increase in their training programs within the next year, and none anticipated removing their training facility.

Research Question Two

(2) What employee training methods are selected businesses and industries currently using in Southwest Virginia?

Of the eight questions asked in Section II, Training Methodology, only item number nine was used to solicit the information necessary to answer research question two. Participants were asked to indicate one or more delivery methods that they utilized with their employee training programs.

Participants rated classroom-based instruction (97.3%) as the most utilized training method. Videotaped instruction was used by 82.7% of the respondents. Satellite broadcasts or videoconferencing (34.7%) was indicated as the least utilized. However, 54.5% of the businesses in the SWCC region indicated that they use this instructional method.

At this point in the survey, four participants (one from WCC, two from MECC, and one from SWCC) chose to terminate their participation for unknown reasons and did not complete any remaining survey items. When these participants were telephoned by

the researcher in an effort to obtain the missing data, they were either unavailable or unwilling to provide further responses.

Additionally, one participant from the WCC region answered that they did not use any of the instructional methods listed and contributed no additional information to the research after this question. Only the remaining 74 participants who indicated that they do use at least one of the instructional methods listed continued with the survey after this question. Complete results of this data collected are presented in Table 11.

Table 11

Survey Question #9 – What instructional delivery method(s) do you use?

Instructional Method	Frequencies by Region						
	n [a]	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	75	37	18	8	1	11	100.0
Classroom-Based	73	35	18	8	1	11	97.3
Videos	62	33	12	8	1	8	82.7
Self-Study	51	25	11	6	1	8	68.0
Computer Software/CD-ROM	43	19	11	4	0	9	58.1
Web-Based	41	18	12	4	1	6	54.6
Satellite Broadcasts/Videoconferencing	26	12	5	3	0	6	34.7
Don't Use Any of these Instructional Methods	1	1	0	0	0	0	1.3

[a] Four subjects chose to terminate their participation at this point, making n=75.

Review of Findings for Research Question Two

Research question two asked "What employee training methods are selected businesses and industries currently using in Southwest Virginia?" Specifically, participants marked if they used one or more of the following training methods: classroom-based training, web-based training, computer software/CD-ROM training,

self-study training materials, satellite broadcasts/videoconferencing, and videos. An overwhelming majority indicated that they used classroom-based training programs. Also worth noting, a large number of participants used videotapes, and over half used self-study materials, computer software/CD-ROMS, and web-based methods. Only one participant did not use any of the training methods listed.

Research Question Three

(3) Of those training methods used, is a particular method used to train for a specific skill set?

Survey questions 8 and 10-15 asked in Section II, Training Methodology, were developed to provide information that was used to answer research question three. Tables 12-18 list the frequencies and cumulative percentages of the skill sets or concepts for which they offer training, and what instructional method is used with a specific skill set or concept.

Participants were asked to mark one or more of the skills for which they offer employee training in general. The highest frequencies were indicated for technical skills and knowledge with 66.2% and computer applications with 62.2%. Executive development was checked the least with 5.4%. The participants (12.2%) that marked the "Other" category indicated they offered employee training for a skill set not listed. They were asked to specify their answer, and their responses included the following:

- WCC region - professional development, safety & lean manufacturing, mandatory HIPAA & orientation for new employees, banking/financial institutional issues

- NRCC region – staff development, community college applications & workforce development
- MECC region – curriculum/technology integration
- SWCC region – assembly.

The results are listed in Table 12.

Table 12

Survey Question #8 – What are the skill sets for which you offer training?

Skill Sets	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	74	36	18	8	1	11	100.0
Computer Applications	46	19	13	4	1	9	62.2
Management Skills/Development	30	13	8	2	0	7	40.5
Supervisory Skills	32	16	9	3	0	4	43.2
Technical Skills/Knowledge	49	26	13	5	0	5	66.2
Communication Skills	39	19	11	2	1	6	52.7
Computer Systems/Programming	13	6	3	0	0	4	17.6
Customer Service	26	12	5	3	1	5	35.1
Executive Development	4	2	1	0	0	1	5.4
Personal Growth	21	12	7	0	0	2	28.4
Sales	6	1	3	0	1	1	8.1
Motivation	29	15	7	2	0	5	39.2
Safety	40	19	11	6	0	4	54.1
General Education	22	14	4	0	0	4	29.7
ESL/Foreign Language	6	4	2	0	0	0	8.1
Other	9	4	3	1	0	1	12.2

[a] Decrease in n to n=74 since one subject from WCC indicated that he/she did not use any instructional methods listed in Table 11.

Participants were asked to mark one or more of the skills for which they offer web-based employee training. Obtaining the highest count, 46% of participants indicated that they do not offer web-based training. ESL/Foreign language with 2.7% and executive development with 4.1% were rated as concepts taught least with web-based training. The participants (8.1%) that marked the "Other" category indicated they offered web-based

training for a skill set not listed. When asked to specify their answers, their responses included:

- WCC region – quality systems, accounting/bookkeeping
- NRCC region – ethics, compliance training, research, staff development.

The results from this data collected are reported in Table 13.

Table 13

Survey Question #10 – Mark all skill sets for which you use web-based training?

Skill Sets	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	74	36	18	8	1	11	100.0
Web-Based Training NOT Offered	33	18	6	4	0	5	44.6
Computer Applications	22	8	7	2	1	4	29.7
Technical Skills/Knowledge	18	8	3	2	1	4	24.3
Communication Skills	14	4	4	1	1	4	18.9
Safety	11	6	0	2	0	3	14.9
Customer Service	10	2	2	2	1	3	13.5
General Education	9	2	2	1	0	4	12.2
Management Skills/Development	9	3	2	1	0	3	12.2
Supervisory Skills	8	2	2	1	0	3	10.8
Computer Systems/Programming	7	5	0	0	0	2	9.5
Motivation	6	1	1	1	0	3	8.1
Other	6	2	4	0	0	0	8.1
Personal Growth	5	1	2	0	0	2	6.8
Sales	5	2	0	0	1	2	6.8
Executive Development	3	1	0	0	0	2	4.1
ESL/Foreign Language	2	1	0	0	0	1	2.7

Participants were asked to mark one or more of the skills for which they offer classroom-based employee training. All but 1.4% indicated that they use classroom-based instruction to teach a skill. Technical skills and knowledge (48.6%), supervisory skills (47.3%), computer applications (47.3%), and communication skills (44.6%) were indicated as skills taught most and sales (2.7%) was indicated to be taught least using classroom-based instruction. Participants (5.4%) that marked the "Other" category indicated they offered classroom-based instruction for a skill set not listed and their responses included:

- WCC region – lean manufacturing, skills testing for example CPR, ACLS
- NRCC region – some CIP projects, staff development.

See Table 14 for the results of data collected.

Table 14

Survey Question #11 – Mark all skill sets for which you use classroom-based training.

Skill Sets	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	74	36	18	8	1	11	100.0
Technical Skills/Knowledge	36	21	8	4	0	3	48.6
Computer Applications	35	17	9	3	1	5	47.3
Supervisory Skills	35	19	8	3	1	4	47.3
Communication Skills	33	17	7	3	0	6	44.6
Safety	28	13	6	4	0	5	37.8
Customer Service	21	11	3	3	0	4	28.4
Personal Growth	19	11	3	2	0	3	25.7
Motivation	13	9	3	0	0	1	17.6
Management Skills/Development	9	5	2	1	0	1	12.2
Computer Systems/Programming	7	4	1	0	0	2	9.5
ESL/Foreign Language	4	3	0	0	0	1	5.4
General Education	21	9	3	2	1	6	5.4
Other	4	2	2	0	0	0	5.4
Executive Development	3	2	1	0	0	0	4.1
Sales	2	0	1	0	0	1	2.7
Classroom-Based Training NOT Offered	1	1	0	0	0	0	1.4

Participants were asked to mark one or more of the skills for which they offer employee training via computer software or CD-ROM. With the highest count, 39.2% of participants indicated that they do not offer training via computer software or CD-ROM. Technical skills and knowledge (25.7%) and computer applications (25.7%) were indicated as skills taught most and executive development (2.7%) and ESL/foreign language (1.3%) skills were indicated to be taught least using computer software or CD-

ROM. Participants (5.4%) that marked the "Other" category indicated that they offered training via computer software for a skill set not listed. Specific responses included the following:

- WCC region - website training
- NRCC region – research & keyboarding
- MECC region – curriculum/technology integration
- SWCC region – job specific.

The results from this data collected are reported in Table 15.

Table 15

Survey Question #12 – Mark all skill sets for which you offer training via computer software or CD-ROM.

Skill Sets	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	74	36	18	8	1	11	100.0
Computer Software Training NOT Offered	29	18	7	4	0	2	39.2
Computer Applications	19	8	5	3	0	2	25.7
Technical Skills/Knowledge	19	10	5	0	0	4	25.7
Communication Skills	15	6	4	2	1	2	20.3
General Education	14	8	3	1	1	1	18.9
Safety	12	6	1	3	0	2	16.2
Computer Systems/Programming	11	7	2	0	0	2	14.9
Management Skills/Development	9	6	2	0	0	1	12.2
Sales	3	1	1	0	1	0	12.2
Supervisory Skills	9	3	2	2	0	2	12.2
Personal Growth	8	1	3	1	1	2	10.8
Customer Service	7	2	2	1	1	1	9.5
Motivation	5	4	0	1	0	0	6.8
Other	4	1	1	1	0	1	5.4
ESL/Foreign Language	2	1	1	0	0	0	2.3
Executive Development	1	0	1	0	0	0	1.4

Participants were asked to mark one or more of the skills for which they offer employee training via self-study methods. Almost one-third of participants (30.1%) indicated that they do not offer training via self-study. Technical skills and knowledge (31.5%) and computer applications (27.4%) were noted as skills taught most and ESL/foreign language (2.7%) skills were taught least using self-study methods.

Participants (9.6%) that marked the "Other" category indicated that they offered self-study methods for a skill set not listed. Specific responses included:

- WCC region - lean manufacturing, SLPs used/Med study/Disease processes
- NRCC region – content and paradigm skills, exam preparation, fork lift training, staff development
- SWCC region – training is job specific.

Specific results from this data collected are given in Table 16.

Table 16

Survey Question #13 – Mark all skill sets for which you use self-study instruction.

Skill Sets	Frequencies by Region						
	n [a]	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	73	36	17	8	1	11	100.0
Technical Skills/Knowledge	23	12	5	3	1	2	31.5
Self-Study Training NOT Offered	22	11	6	2	0	3	30.1
Computer Applications	20	10	3	3	0	4	27.4
General Education	16	7	2	2	0	5	21.9
Safety	16	8	2	4	0	2	21.9
Supervisory Skills	15	7	2	2	1	3	20.5
Communication Skills	14	6	4	2	0	2	19.2
Personal Growth	13	5	4	1	1	2	17.8
Customer Service	10	5	2	1	1	1	13.7
Motivation	8	6	0	0	0	2	11.0
Management Skills/Development	7	4	2	0	0	1	9.6
Other	7	2	4	0	0	1	9.6
Computer Systems/Programming	6	1	4	0	0	1	8.2
Executive Development	4	1	1	0	1	1	5.5
Sales	4	2	1	0	1	0	5.5
ESL/Foreign Language	2	1	1	0	0	0	2.7

[a] One subject from the NRCC region chose to terminate his/her participation at this point, making n=73.

Participants were asked to mark one or more of the skills for which they offer employee training via satellite broadcasts or videoconferencing. The majority of participants (67.6%) indicated that they do not offer training via satellite broadcasts or videoconferencing. Computer applications (16.9%), general education (16.9%), and

technical skills/knowledge (15.5%) were noted as skills taught most. No participant indicated that they taught sales or executive development with this method. Additionally, satellite broadcasts or videoconferencing was used very little to teach motivation (1.4%), computer systems/programming (2.8%), safety (2.8%), and ESL/foreign language (2.7%) skills. One participant (1.4%) marked the "Other" category and wrote that they offered federal regulations training via satellite broadcasts or videoconferencing. The results from this data are reported in Table 17.

Table 17

Survey Question # 14 – Mark all skill sets for which you use satellite broadcasts or videoconferencing.

Skill Sets	Frequencies by Region						
	n [a]	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	71	35	16	8	1	11	100
Satellite Broadcasts/Videoconferencing NOT Offered	48	24	13	5	1	5	67.6
Computer Applications	12	5	2	1	0	4	16.9
General Education	12	4	1	2	0	5	16.9
Technical Skills/Knowledge	11	8	2	1	0	0	15.5
Communication Skills	6	1	2	1	0	2	8.5
Customer Service	3	1	0	2	0	0	4.2
Management Skills/Development	3	2	0	0	0	1	4.2
Supervisory Skills	3	0	1	0	0	2	4.2
Computer Systems/Programming	2	1	1	0	0	0	2.8
ESL/Foreign Language	2	0	0	1	0	1	2.8
Personal Growth	2	1	0	1	0	0	2.8
Safety	2	1	0	0	0	1	2.8
Motivation	1	1	0	0	0	0	1.4
Other	1	1	0	0	0	0	1.4
Executive Development	0	0	0	0	0	0	0.0
Sales	0	0	0	0	0	0	0.0

[a] One subject from the WCC region and one subject from the NRCC region chose to terminate their participation at this point, making n=71.

Participants were asked to mark one or more of the skills for which they offer employee training via videotapes. A few participants (14.1%) indicated that they do not offer training via videotape. Safety (53.5%), communication skills (40.8%), supervisory

skills (33.8%), and technical skills/knowledge (32.4%) were indicated to be taught most using videos. Executive development (2.8) and ESL/foreign language (4.2%) skills were indicated to be taught least using videos. Participants (7%) that marked the "Other" category indicated that they offered instructional videos for a skill set not listed. They were asked to specify their answer, and their responses included the following:

- WCC region - lean manufacturing, fork lift training, train for procedures/equipment, assessment skills
- NRCC region – staff development.

See Table 18 for further detail on data collected.

Table 18

Survey Question #15 – Mark all skill sets for which you use videotapes.

Skill Sets	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	71	35	16	8	1	11	100.0
Safety	38	19	6	6	0	7	53.5
Communication Skills	29	16	4	3	0	6	40.8
Supervisory Skills	24	12	6	3	0	3	33.8
Technical Skills/Knowledge	23	13	4	4	0	2	32.4
General Education	20	9	4	2	0	5	28.2
Computer Applications	14	8	4	0	0	2	19.7
Customer Service	12	4	4	2	0	2	16.9
Personal Growth	11	5	4	1	0	1	15.5
Motivation	10	6	2	1	0	1	14.1
Video Training NOT Offered	10	4	4	0	0	2	14.1
Management Skills/Development	7	4	2	0	0	1	9.9
Other	5	4	1	0	0	0	7.0
Sales	5	1	1	0	1	2	7.0
Computer Systems/Programming	4	0	2	1	0	1	5.6
ESL/Foreign Language	3	1	1	1	0	0	4.2
Executive Development	2	1	0	1	0	0	2.8

Review of Findings for Research Question Three

Research question three asked "Of those training methods used, is a particular method used to train for a specific skill set?" Seven survey questions were developed to answer this question. The results of the data indicated that over half offer training for skill development in the areas of computer applications, technical skills/knowledge,

communication skills, and safety procedures. Less than 10% of these businesses offered executive development, sales, or ESL/foreign language training programs.

In particular, participants were asked to specify the methods they use to train for various skill sets. Those who offered web-based training indicated using it most often to train for computer application skills. Supervisory skills, computer application skills, technical skills, and communication skills were all taught using classroom-based training methods. Computer software/CD-ROM methods and self-study training materials were used most often to teach both computer application skills and technical skills. Satellite broadcast and videoconferencing were used most often in teaching computer applications, general education, and technical skill development. Videotapes were used most to teach safety skills.

Research Question Four

(4) What criteria were used to select a particular employee training method?

All six questions (questions 16-21) asked in Section III, Reasons for Using Training Methods, on the survey instrument were used to answer research question four. The results of this data are reported in Tables 19-24.

Participants were asked to mark all of the criteria that influenced their decision to use web-based training. From these results, 47.9% of participants indicated that they do not offer web-based training. Flexibility (43.7%) was marked as the most influential criterion considered when deciding to use web-based instruction and length of training (9.9%) was noted as the least considered criterion. Participants (7%) who marked the "Other" category indicated they considered criteria not listed. Responses to the other category included the following:

- WCC region - mandatory program for large number of participants, large number of participants, availability
- NRCC region – other programs not available, not developed for use in areas needed yet.

The results from this data collected are reported in Table 19.

Table 19

Survey Question #16 – Mark all criteria that influence your decision to use web-based training.

Criteria	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	71	35	16	8	1	11	100.0
Web-Based Training NOT Offered	34	18	6	4	0	5	47.9
Flexibility	31	15	8	3	1	4	43.7
Timeliness of Training Program	18	9	2	4	0	3	25.4
Cost	16	8	3	2	0	3	22.5
Perceived Quality	11	5	0	1	1	4	15.5
Perceived Value	11	5	1	2	0	3	15.5
Length of Training Program	7	4	0	2	0	1	9.9
Other	5	3	2	0	0	0	7.0

Participants were asked to mark one or more criteria that influenced their decision to use classroom-based training. The majority of participants (98.6%) indicated that they do use classroom-based training. Only one participant (1.4%) from the WCC region did not use classroom-based training. Cost (59.2%), flexibility (56.3%) and perceived quality (52.1%) were marked as the most influential criteria considered when deciding to use classroom-based training. Although length of training was rated as the least considered

criterion, 33.8% of participants still considered it a factor when deciding upon classroom-based training programs. Participants (9.9%) who marked the "Other" category indicated they considered criteria not listed, and their responses included the following:

- WCC region - convenience, availability, learning domain/demonstration, demonstration of skills
- NRCC region – human responsiveness
- MECC region – just-in-time training, legal requirements - MSHA required.

Findings from this data collected are reported in Table 20.

Table 20

Survey Question #17 – Mark all criteria that influence your decision to use classroom-based training.

Criteria	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	71	35	16	8	1	11	100
Cost	42	19	10	4	0	9	59.2
Flexibility	40	17	8	7	1	7	56.3
Perceived Quality	37	20	10	3	0	4	52.1
Perceived Value	33	20	6	2	1	4	46.5
Timeliness of Training Program	31	15	5	3	1	7	43.7
Length of Training Program	24	13	2	4	1	4	33.8
Other	7	4	1	2	0	0	9.9
Classroom-Based Training NOT Offered	1	1	0	0	0	0	1.4

Participants were asked to mark one or more of criteria that influenced their decision to use computer software or CD-ROM training programs. Several participants

(40.8%) indicated that they did not use computer software or CD-ROMs for training. Flexibility (40.8%) was marked as the most influential criteria considered when deciding to use computer software training programs. Perceived value (12.7%) was rated as the least considered criteria. Participants (4.2%) who marked the "Other" category indicated that they considered criteria not listed. Their responses included:

- WCC region - expertise of presenter, availability
- NRCC region – not available.

Complete findings are revealed in Table 21.

Table 21

Survey Question #18 – Mark all criteria that influence your decision to use training via computer software or CD-ROM.

Criteria	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	71	35	16	8	1	11	100.0
Computer Software Training NOT Offered	29	18	5	4	0	2	40.8
Flexibility	29	13	6	4	1	5	40.8
Cost	20	8	4	2	1	5	28.2
Timeliness of Training Program	19	5	7	3	1	3	26.8
Perceived Quality	15	10	1	2	1	1	21.1
Length of Training Program	12	6	3	1	0	2	16.9
Perceived Value	9	5	0	2	0	2	12.7
Other	3	2	1	0	0	0	4.2

Participants were asked to mark one or more of criteria that influenced their decision to use self-study training programs. Several participants (29.6%) indicated that they did not use self-study training programs. Flexibility (49.3%) and cost (38%) were marked as the most influential criteria considered when deciding to use self-study

training programs. It is worth noting that 45.7% of participants from the WCC region indicated perceived quality as an important consideration as well. Length of the training program (16.9%) was rated as the least considered criterion. Participants (8.5%) that marked the "Other" category indicated they considered criteria not listed. Responses to the "Other" category included the following:

- WCC region – availability, program not available
- NRCC region – only training method available
- MECC region – legal requirements-MSHA
- SWCC region – availability, distance

See Table 22 for detailed findings.

Table 22

Survey Question #19 – Mark all criteria that influence your decision to use self-study training methods.

Criteria	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	71	35	16	8	1	11	100.0
Flexibility	35	17	7	4	1	6	49.3
Cost	27	13	7	3	0	4	38.0
Perceived Quality	24	16	4	0	0	4	33.8
Self-Study Training NOT Offered	21	11	5	2	0	3	29.6
Timeliness of Training Program	20	7	6	3	0	4	28.2
Perceived Value	16	10	4	1	0	1	22.5
Length of Training Program	14	8	3	2	1	0	19.7
Other	6	2	1	1	0	2	8.5

Participants were asked to mark one or more of criteria that influenced their decision to use satellite broadcasting or videoconferencing for training programs. The majority of participants (67.6%) indicated that they did not use satellite broadcasting or videoconferencing. Those who did use these training methods indicated flexibility (19.7%) and cost (18.3%) as the most influential criteria considered. Length of the training program (9.9%) was rated as the least considered criterion. Participants (8.5%) who marked the "Other" category indicated they considered criteria not listed. Responses to the "Other" category included the following:

- WCC region – availability, continuing education credits, expertise of presenter/CE Credits
- NRCC region – not available
- MECC region – no geographical barriers
- SWCC region – multi-facility training

Complete findings are reported in Table 23.

Table 23

Survey Question #20 – Mark all criteria that influence your decision to use training via satellite broadcasts or videoconferencing.

Criteria	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	71	35	16	8	1	11	100.0
Satellite Broadcasts/Videoconferencing Training NOT Offered	48	24	13	5	1	5	67.6
Flexibility	14	7	3	2	0	2	19.7
Cost	13	6	1	3	0	3	18.3
Perceived Quality	11	7	2	1	0	1	15.5
Perceived Value	11	7	1	3	0	0	15.5
Timeliness of Training Program	9	5	1	1	0	2	12.7
Length of Training Program	7	3	1	2	0	1	9.9
Other	6	3	1	1	0	1	8.5

Participants were asked to mark one or more of criteria that influenced their decision to use videotapes for training programs. Only 14.1% of participants indicated that they did not use videotapes for training. A large number of participants designated cost (53.5%) and timeliness of the program (46.5%) as the most influential criteria considered. Length of the training program (31%), perceived value (32.4%), and perceived quality (33.8%) were ranked lowest in these considerations. Participants (8.5%) who marked the "Other" category indicated they considered criteria not listed. Responses to the "Other" category included the following:

- WCC region – can show to large group, availability (mentioned twice), standardization of presentation
- NRCC region –availability

- SWCC region – type of program.

Complete findings are listed in Table 24.

Table 24

Survey Question #21 – Mark all criteria that influence your decision to use training via videotapes.

Criteria	Frequencies by Region						
	n	WCC	NRCC	MECC	VHCC	SWCC	n by %
Group n	71	35	16	8	1	11	100.0
Flexibility	49	23	9	8	0	9	69.0
Cost	38	18	10	6	0	4	53.5
Timeliness of Training Program	33	16	7	5	1	4	46.5
Perceived Quality	24	15	5	2	0	2	33.8
Perceived Value	23	14	6	2	0	1	32.4
Length of Training Program	22	10	6	3	1	2	31.0
Video Training NOT Offered	10	4	4	0	0	2	14.1
Other	6	4	1	0	0	1	8.5

Review of Findings for Research Question Four

Research question four asked "What criteria were used to select a particular employee training method?" Six survey questions were developed to answer this question. The findings revealed information about what criteria are evaluated in the decision to use a specific training method. Flexibility was the most important criterion to those respondents who indicated they use web-based training, training via computer software/CD-ROMs, or self-study materials. Most respondents who use classroom-based training noted cost, flexibility and perceived value as important criteria to evaluate when deciding to use this method. Participants indicated that cost and flexibility were the most influential criteria in their decision to use training via satellite broadcasts or

videoconferencing. Additionally, when using videotapes, participants considered cost and timeliness of the training program as the most valuable criteria.

Chapter Summary

An analysis of the data compiled from the returned surveys revealed a profile of the businesses and industries in Southwest Virginia that offer employee training programs, the methodologies they use in the delivery of training, and criteria they evaluate when deciding to use a specific training method. Overall, the results of the data showed that manufacturing was the most represented industry, most participants held a management position, and worked in the human resources department. The majority of businesses expected some type of increase in their training programs within the next year. Nearly all indicated that they use classroom-based training programs, and a substantial number indicated using videotapes, self-study materials, computer software/CD-ROMS, and web-based training methods. Many of the participants said that they offer training for skill development in the areas of computer applications, technical skills and knowledge, communication skills, and safety procedures. Lastly, cost, flexibility, perceived value and timeliness of the program were criteria rated as most influential in the decision to use a particular training method.

Chapter 5

Summary, Conclusions, Discussion, and Recommendations

This chapter contains (a) a summary of the completed study, (b) a review of the findings, and (c) the conclusions, discussion, and recommendations for further research. These will be discussed throughout the following sections.

Summary of the Completed Study

Background

Virginia's Workforce Development System (WDS) was established in 1998 by the Virginia General Assembly as part of the Virginia Community College System. The role of the WDS was to design and organize programs to provide flexible credit, or in some instances non-credit, programs and services to meet the employee training needs of businesses and industries throughout the commonwealth (VCCS, 2002).

As part of the WDS, a Statewide Training Network was established to respond to workforce development needs of companies and other organizations or agencies that are located at a regional or statewide level or have locations in multiple Virginia community college service areas. The Network was designed to facilitate a quick, coordinated, effective response to training requests. Unfortunately, no specific information pertaining to current training practices in Southwest Virginia was available, and this lack of information led to the development of this research study.

Purpose and Research Questions

The three purposes of this study were to (a) establish a profile of the current training practices of selected businesses and industries in Southwest Virginia; (b) identify the type of training methods these companies are choosing—such as traditional

classroom training, web-based training programs, and (c) identify how the training methods are selected. This profile established baseline data for current business and industry employee training programs. Businesses and industries who participated in workforce development programs offered by community colleges located in the southwest region of Virginia were selected to obtain information. The following research questions were investigated:

1. What is the profile of selected businesses and industries that offer employee training programs in Southwest Virginia (SWVA)?
2. What training methods are selected businesses and industries currently using in SWVA?
3. Of those training methods used, is a particular method used to train for a specific skill set, i.e. motivation, safety practices, computer skills, etc?
4. What criteria were used to select a particular employee training method?

Data Collection

A survey instrument was used to collect data for this study (see Appendix C). The instrument was created with a survey template from the Center for Excellence in Undergraduate Teaching at Virginia Polytechnic and State University, and revised based on suggestions taken from Babbie's (1990) chapter on "Conceptualization and Instrument Design."

This study was limited to only those businesses and industries that had participated in workforce development programs provided by community colleges located in the southwest region of Virginia during 2001 and 2002. Workforce development representatives from five community colleges provided business contact

information in their service region. The service regions and number of businesses in each included: Wytheville Community College (82 businesses), New River Community College (46 businesses) Mountain Empire Community College (39 businesses), Virginia Highlands Community College (6 businesses), and Southwest Virginia Community College (32 businesses). The researcher solicited data from a total of 205 organizations.

The survey instrument was divided in three different sections–respondent profile, training methodology, and training criteria. The formats for each of the items, as well as the category titles, were determined by previous studies identified throughout the literature review process. The instrument was evaluated by subject matter experts, revised and then pilot tested and revised again. The instrument was also prepared for participants to access via the Internet. A cover letter with instructions on accessing the survey on-line was mailed to the 205 businesses and industries in the population. If participants did not have Internet access, or chose not to complete the survey on-line, they were mailed a hard copy of the instrument. A total of 88 surveys were returned for an overall response rate of 42.9%.

After 14 days from the initial mailing, all 117 individuals who had not returned the requested information were designated as non-respondents. The non-respondent information for this study of training practices was obtained by systematically selecting 25 subjects and obtaining responses to six key questions. Twelve subjects agreed to participate in the follow-up phone survey, and frequencies for each question were derived. The non-respondent frequencies on the identical survey items were compared to the respondent frequencies. Results revealed minimal differences between the non-respondent group and respondent group. Therefore, the two groups are similar and data

collected from the respondent group can be interpreted as representative of views from the entire population.

The first research question was answered by obtaining profile data provided by seven items in section one of the survey. These frequencies can be found in Tables 3-9. Research questions two and three were answered by the training methodology section on the survey instrument. Frequencies for this data can be found in Tables 11-17. The six survey questions in the training criteria section were developed to answer research question four. Tables 18-23 provide the frequencies for this data.

Review of Findings

Research Question One

What is the profile of selected businesses and industries that offer employee training programs in Southwest Virginia?

As shown in Tables 4-10, the data collected revealed that manufacturing was the industry most represented while wholesale/retail trade, communications, media, legal services, and real estate had no representation. A prevailing number of participants indicated that they worked in a management position within the human resources department. Forty percent of businesses indicated that they employed at least 101 but no more than 500 persons. Only five businesses indicated that they do not provide in-house employee training. Forty-three percent of the respondents indicated that their training departments were separate from human resources, but it is worth noting that 34% indicated that their training department was included within human resources. Additionally, the majority of businesses expected some type of increase in their training

programs within the next year; however, none anticipated eliminating their training department.

Research Question Two

What employee training methods are selected businesses and industries currently using in Southwest Virginia?

As shown in Table 11, participants indicated whether they used one or more of the following training methods: classroom-based training, web-based training, computer software/CD-ROM training, self-study training materials, satellite broadcasts/videoconferencing, and videos. An overwhelming majority said that they use classroom-based training programs. Additionally, a large number of participants used videotapes and over half used self study materials, computer software/CD-ROMS, and web-based methods. Only one participant did not use any of the training methods listed and also failed to identify any method that was used.

Research Question Three

Of those training methods used, is a particular method used to train for a specific skill set?

As shown in Tables 12-18, the results of the data revealed that over half offered training for skill development in the areas of computer applications, technical skills and knowledge, communication skills, and safety procedures. Very few businesses offered executive development, sales or ESL/foreign language training programs.

In particular, participants were asked to specify the methods they use to train for various skill sets. Those who offered web-based training indicated using it most often to address computer application skills. Supervisory skills, computer application skills,

technical skills, and communication skills were all addressed using classroom-based training methods. Computer software/CD-ROM methods and self-study training materials were used most often to teach both computer application skills and technical skills. Satellite broadcast and videoconferencing were used most often to teach computer applications, general education, and technical skill development. Videotapes were used most to teach safety skills.

Research Question Four

What criteria were used to select a particular employee training method?

As shown in Tables 19-24, the findings revealed information about what criteria participants evaluated in their decision to use a specific training method. Flexibility was the most important criterion to those respondents that indicated they use web-based training, training via computer software/CD-ROMs, or self-study materials. Most respondents that use classroom-based training noted cost, flexibility and perceived value as important criteria to evaluate. Participants indicated that cost and flexibility were the most influential criteria in their decision to use training via satellite broadcasts or videoconferencing. Lastly, participants who used videotapes considered cost and timeliness of the training program as the most valuable criteria.

Conclusions

1. Based on the profile data collected, one can conclude that businesses in Southwest Virginia employing 101 or more employees, such as manufacturing companies, have access to more extensive training programs than those businesses, such as real estate or legal services, employing 50 or fewer workers.

2. Since an overwhelming majority of participants indicated that they use classroom-based training, one can conclude that this is the most popular training method in Southwest Virginia. Specific reasons for its popularity cannot be determined from the research questions investigated in this study.
3. The results of this study indicated that while web-based training is used by over half of businesses and industries in SWVA that participated in workforce development programs, it is not the most utilized method. Therefore, one could conclude that web-based training is not as widely used as originally touted by some researchers (Pack, 2002; Pantazis, 2002; Davis, 2001).
4. In spite of the advantages of satellite-based training such as the ability to reach remote locations and decreasing implementation costs (Munger, 1997; Fister, 2000), a majority of businesses in Southwest Virginia did not offer satellite-based training.
5. The results revealed a majority of businesses are training for technical and knowledge-based skills. This information indicates that the Virginia Community College System WDS programs in SWVA are meeting the one objective that is pertinent to this study by training for technical skills and knowledge to meet the need of providing highly skilled workers in technological areas (VCCS, 2002).
6. Evaluation of the data leads one to conclude that the criteria of flexibility in the design and implementation of a training program is most important to businesses in SWVA when deciding upon an employee training method. This conclusion supports research presented by Stanley (2002) that indicated the critical role flexibility plays in the development of a training program.

7. One can conclude that the length of the training program is least influential in an organization's decision to utilize a specific training method. These data contradict Leifer's (1997) research that mentioned the importance of examining the pros and cons of full-day and half-day training programs.
8. Since businesses in SWVA indicated that choosing training methods for a specific skill set and criteria vary, one could conclude that workforce development professionals should identify these individual preferences before designing and initiating specific employee training programs.
9. The response rate for this study conducted via the Internet was 42.9%. While somewhat lower than typically received by mailed surveys (Hoyle et. al., 2002; Birnbaum, 2000), there are plausible explanations such as the researchers lack of direct affiliation and personal contact with the population.

Discussion

1. In contrast to Pantazis (2002) findings regarding the wide acceptance and increasing use of web-based training, the results of this study found only moderate use of this method.
2. The results of this study support the findings of *Training's Annual Industry Report* (2000) which indicated that classroom-based training is the most relied upon method in businesses and industries.
3. In general, videoconferencing and satellite broadcasting have been more rapidly accepted and utilized by trainers (Fister, 2000). With the exception of one region (SWCC), the survey results show that other businesses in Southwest Virginia are

underutilizing this method. Ironically, this method has the greatest potential for flexibility and reaching remote locations (Munger, 1997).

4. The fact that flexibility in the design and implementation of a training program is the most important criteria is not a surprise since it provides employees with alternative learning environments and is adaptable to individual learning styles and business situations (Stanley, 2002).

Recommendations for Practice

1. Workforce development professionals should use specific profile information, such as employee size and type of business, obtained in this study to optimize their employee training programs in Southwest Virginia.
2. Since a majority of businesses in Southwest Virginia use traditional classroom-based training programs, workforce development services should closely evaluate their classroom instructional methods, as well as the corresponding classes offered, to see that they are meeting the needs of these businesses.
3. Workforce development professionals in SWVA should develop short, intensive training programs that are subject specific.
4. Workforce development professionals should use data gathered in this study to match training delivery methods with training needed in different sectors such as manufacturing, educational services and public administration.
5. Since very little training is used for executive development or management skills, workforce development professionals in Southwest Virginia should focus on the design and implementation of programs at the non-management level.

Recommendations for Further Research

1. Based on the low response rates, research is needed to determine why service industries such as real estate, media, communications, legal services, and wholesale and retail trade businesses are not availing themselves of WDS employee training opportunities.
2. In an effort to increase the quality and effectiveness of workforce development programs, further research should be implemented to obtain qualitative data regarding the skill sets and criteria participants valued most in employee training programs.
3. This study focused only on businesses and industries that participated in workforce development programs in the southwestern region of Virginia. To obtain comprehensive results regarding the overall state of Virginia's workforce development programs, this study should be replicated throughout the entire commonwealth to assist the VCCS in meeting relevant legislative mandates.
4. A companion study at a regional and statewide level should be employed to unveil specific reasons businesses and industries do not participate in community college workforce development programs.
5. Using the data obtained in this study as a baseline, the study should be performed again at regular intervals to identify trends and changes in training practices among businesses and industries in Southwest Virginia.
6. In light of Virginia's current budget crisis, another study on this population should be conducted to provide information on the economic effectiveness and efficiency of these workforce development agencies in providing employee training programs for businesses and industries.

7. Since Internet-based surveys tend to yield lower response rates than mailed surveys (Hoyle et. al., 2002; Birnbaum, 2000), further research should be implemented to weigh the consequences of using an Internet-based survey and provide techniques to increase on-line participation.

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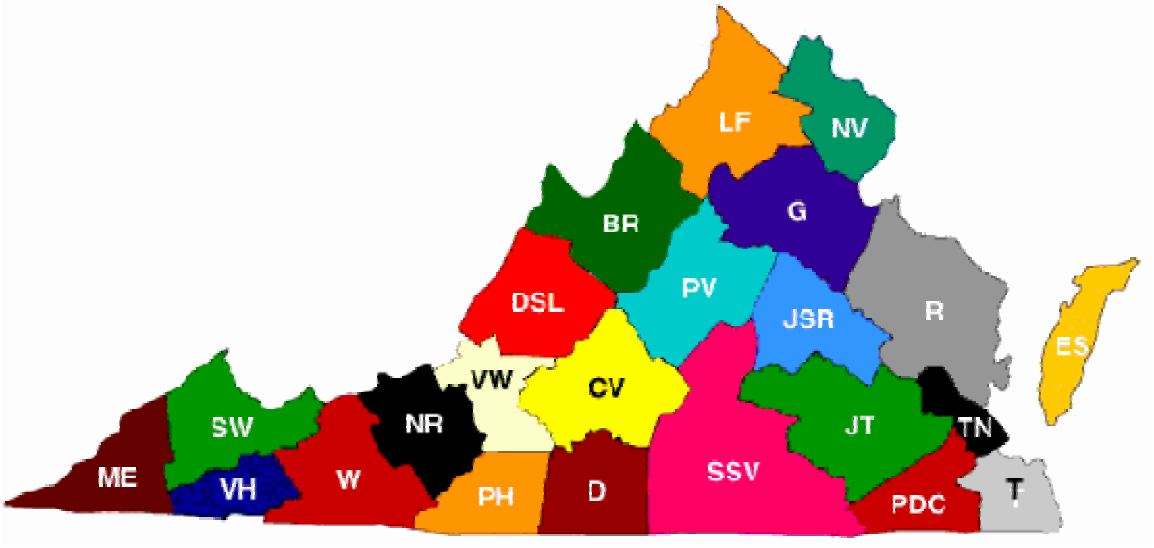
APPENDICES

APPENDIX A:

Map of Community College Service Regions

VIRGINIA WORKFORCE DEVELOPMENT SERVICES

Community Colleges by Region.



BR	Blue Ridge CC	LF	Lord Fairfax CC	SSV	Southside Virginia CC
CV	Central Virginia CC	**ME**	**Mountain Empire CC**	**SW**	**Southwest Virginia CC**
DSL	Dabney S. Lancaster CC	**NR**	**New River CC**	TN	Thomas Nelson CC
D	Danville CC	NV	Northern Virginia CC	T	Tidewater CC
ES	Eastern Shore CC	PH	Patrick Henry CC	**VH**	**Virginia Highlands CC**
G	Germanna CC	PDC	Paul D. Camp CC	VW	Virginia Western CC
JSR	J. Sargeant Reynolds CC	PV	Piedmont Virginia CC	**W**	**Wytheville CC**
JT	John Tyler CC	R	Rappahanock CC	VCCS	WDS System Office

Note: Bolded text indicate community colleges represented in this study.

Source: Virginia Community College System (2003)

[WWW Document]. URL: http://www.vccs.edu/workforce/directory/wdscenters.htm.

APPENDIX B:

Request for Research Authorization from Community Colleges

REQUEST FOR RESEARCH AUTHORIZATION FROM COMMUNITY COLLEGE REPRESENTATIVES

Dear «First Name». «Last_Name»:

I am conducting a research study to establish a profile of current training programs used by businesses and industries in Southwest Virginia. Conducting this research partially fulfills the requirements for my doctoral degree at Virginia Tech.

The three purposes of this study are (1) to establish a profile of the current training practices of selected businesses and industries in Southwest Virginia and (2) identify the type of training methods these companies are choosing 0 traditional classroom training, web-based training programs or a combination of both 0 and (3) identify the criteria that was used to select these training methods. Results of this study will ascertain a baseline for current training programs in business and industries that participate in Southwest Virginia's Community College Workforce Development Service (WDS) programs.

I am writing to request the contact information of those businesses and industries in which you offer workforce development services. I am asking for you to supply me with the following information for each company – 1) company's name, 2) an appropriate contact person within the company, 3) type of business, 4) number of employees, and 5) a complete mailing address. I would also appreciate you making note of those businesses and industries that actively take part in your services as opposed to those who do not.

Specifically, I am asking permission to survey only those businesses and industries that actively participate in your workforce development programs. The survey instrument enclosed is a draft of the form that will be used, and only formatting changes for printing purposes will be made from this point forward. Participation in this project will be strictly voluntary, and all participants may be assured of complete confidentiality. The survey will be numbered for follow-up purposes only.

Your approval and contribution of contact information is very important to the success of this research project. Each region in Southwest Virginia needs to be represented in order for the results to be as accurate as possible. The survey results will help in the improvement of our workforce development programs in Southwest Virginia. Thank you for your help in this project.

Sincerely,

Katrina M. Hundley
Doctoral Candidate

Dr. Kurt Eschenmann, Professor
Advisor

Enclosure

APPENDIX C:

Survey Instrument

CODE __ __ __ __

Survey of Current Training Practices in Southwest Virginia

Instructions: *Please read each question carefully and then mark the choice that MOST CLOSELY matches your situation. Your responses will be kept confidential and no information that could be used to identify survey participants will be released. Thank you for your cooperation and providing us with this information.*

Section I. Respondent Profile

1. Which of the following best describes your business?
   - __Manufacturing
   - __Transportation
   - __Communications/Public Utilities
   - __Wholesale/Retail Trade
   - __Investment/Insurance/Banking Services
   - __Business Services
   - __Health Services
   - __Educational Services
   - __Public Administration/Government Agency
   - __Media
   - __Legal Services
   - __Real Estate
   - __Construction
   - __Other? Please specify. _____

2. Which of the following best describes your department?
   - __Human Resources
   - __Training & Development
   - __Information Technology
   - __Marketing
   - __Sales
   - __Accounting/Finance
   - __Purchasing
   - __Quality Control
   - __Production
   - __Distribution/Logistics
   - __Legal/Compliance
   - __Planning/Design
   - __Research and Development
   - __Safety
   - __Customer Service/Order Processing
   - __Real Estate
   - __Other? Please specify. _____

3. Approximately how many full time employees does your organization have?
   _____

4. How could your job position could best be described?
   - __Management
   - __Non-Management

5. Does your organization provide in house training for your employees?
   - __Yes
   - __No

** Note: If you answered "No" to question #5, please STOP here and RETURN your survey!

6. Is your training department separate from human resources?
   __Yes __No __Not Sure

7. What changes do you anticipate in your training program in the next year?
   __Increase in training programs
   __Move toward more web-based training
   __Purchase more training materials
   __Provide more training space
   __Increase training staff
   __NO CHANGES ANTICIPATED
   __Other? Please specify _____
   __Decrease in training programs
   __Move toward more classroom-based training
   __Purchase less training materials
   __Remove training facility
   __Decrease training staff

Section II. Training Methodology Questions
For questions 8-16, please mark ALL options that apply.

8. What are the skill sets or concepts for which you offer training?
   __Computer Applications
   __Supervisory Skills
   __Communication Skills
   __Customer Service
   __Personal Growth
   __Motivation
   __General Education
   __Other? Please specify _____
   __Management Skills/Development
   __Technical Skills/Knowledge
   __Computer Systems/Programming
   __Executive Development
   __Sales
   __Safety
   __ESL/Foreign Language

9. What instructional delivery method(s) do you use? Mark all that apply.
   __Web-Based Instruction
   __Computer Software/CD-ROM
   __Self-Study (i.e. Books/Printed Materials/Mentoring)
   __Satellite Broadcasts/Videoconferencing
   __Classroom-Based Instruction
   __Videos

** NOTE: If you don't use any of these instructional methods listed in question 9, please STOP here AND RETURN YOUR SURVEY.

10. Mark all skills sets for which you use web-based instruction.
   __ **Web-Based Instruction is NOT used.**
   __Computer Applications
   __Supervisory Skills
   __Communication Skills
   __Customer Service
   __Personal Growth
   __Motivation
   __General Education
   __Other? Please specify _____
   __Management Skills/Development
   __Technical Skills/Knowledge
   __Computer Systems/Programming
   __Executive Development
   __Sales
   __Safety
   __ESL/Foreign Language

11. Mark all skills sets for which you use classroom-based instruction.

__Classroom-Based Instruction is NOT used.

__Computer Applications
__Supervisory Skills
__Communication Skills
__Customer Service
__Personal Growth
__Motivation
__General Education
__Other? Please specify _____

__Management Skills/Development
__Technical Skills/Knowledge
__Computer Systems/Programming
__Executive Development
__Sales
__Safety
__ESL/Foreign Language

12. Mark all skill sets for which you offer training via Computer Software/CD-ROM.

__Computer Software/CD-ROM is NOT used.

__Computer Applications
__Supervisory Skills
__Communication Skills
__Customer Service
__Personal Growth
__Motivation
__General Education
__Other? Please specify _____

__Management Skills/Development
__Technical Skills/Knowledge
__Computer Systems/Programming
__Executive Development
__Sales
__Safety
__ESL/Foreign Language

13. Mark all skill sets for which you use self study materials (i.e. books/printed documents/mentoring).

__ Self-Study Materials are NOT used.

__Computer Applications
__Supervisory Skills
__Communication Skills
__Customer Service
__Personal Growth
__Motivation
__General Education
__Other? Please specify _____

__Management Skills/Development
__Technical Skills/Knowledge
__Computer Systems/Programming
__Executive Development
__Sales
__Safety
__ESL/Foreign Language

14. Mark all skill sets for which you offer training via satellite broadcasts or videoconferencing.

__ Satellite Broadcasts/Videoconferencing is NOT used.

__Computer Applications
__Supervisory Skills
__Communication Skills
__Customer Service
__Personal Growth
__Motivation
__General Education
__Other? Please specify _____

__Management Skills/Development
__Technical Skills/Knowledge
__Computer Systems/Programming
__Executive Development
__Sales
__Safety
__ESL/Foreign Language

15. Mark all skill sets for which you offer training via videotapes.

__ Videos are NOT used.

__Computer Applications	__Management Skills/Development
__Supervisory Skills	__Technical Skills/Knowledge
__Communication Skills	__Computer Systems/Programming
__Customer Service	__Executive Development
__Personal Growth	__Sales
__Motivation	__Safety
__General Education	__ESL/Foreign Language

__Other? Please specify _____

Section III. Reason(s) for Using Training Methods

For questions 16-21, please mark ALL options that apply.

16. Mark all criteria that influence your decision to use web-based instruction.

__Web-Based Instruction is NOT offered.

__Cost	__Flexibility
__Timeliness of Training Program	__Length of Training Program
__Perceived Quality	__Perceived Value

__Other? Please specify. _____

17. Mark all criteria that influence your decision to use classroom-based instruction.

__Classroom-Based Instruction is NOT offered.

__Cost	__Flexibility
__Timeliness of Training Program	__Length of Training Program
__Perceived Quality	__Perceived Value

__Other? Please specify. _____

18. Mark all criteria that influence your decision to use computer software/CD-ROM.

__Computer Software/CD-ROM is NOT offered.

__Cost	__Flexibility
__Timeliness of Training Program	__Length of Training Program
__Perceived Quality	__Perceived Value

__Other? Please specify. _____

19. Mark all criteria that influence your decision to use self study training methods (i.e. books/printed docs/mentoring).

__Self-Study is NOT offered.

__Cost	__Flexibility
__Timeliness of Training Program	__Length of Training Program
__Perceived Quality	__Perceived Value

__Other? Please specify. _____

20. Mark all criteria that influence your decision to use training via satellite broadcasts or videoconferencing.

__ Satellite Broadcasts/Videoconferencing are NOT offered

__Cost	__Flexibility
__Timeliness of Training Program	__Length of Training Program
__Perceived Quality	__Perceived Value

__Other? Please specify. _____

21. Mark all criteria that influence your decision to use videotapes.

__Videos are NOT offered

__Cost
__Flexibility
__Timeliness of Training Program
__Length of Training Program
__Perceived Quality
__Perceived Value
__Other? Please specify. _____

Survey is complete! Thank you for your cooperation!

APPENDIX D:

IRB Approval

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Institutional Review Board

Dr. David M. Moore
IRB (Human Subjects) Chair
Assistant Vice Provost for Research Compliance
CVM Phase II - Duckpond Dr., Blacksburg, VA 24061-0442
Office: 540/231-4991; FAX: 540/231-6033
e-mail: moored@vt.edu

15 October 2002

MEMORANDUM

TO: Konrad Eschenmann T&L 0467
Katrina Hundley T&L 0467

FROM: David M. Moore

SUBJECT: IRB EXEMPTION APPROVAL – "A Profile of Current Training Practices in Selected Businesses and Industries in SWVA" – IRB # 02-498

I have reviewed your request to the IRB for exemption for the above referenced project. I concur that the research falls within the exempt status. Approval is granted effective as of October 15, 2002.

cc: file

A Land-Grant University—The Commonwealth Is Our Campus
An Equal Opportunity / Affirmative Action Institution

APPENDIX E:

Initial Letter to Population

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

College of Human Resources and Education
Dept. of Career and Technical Education

202 War Memorial (0467)
Blacksburg, Virginia 24061
(540) 231-8198 Fax: (540) 231-2747
Email: khundley@vt.edu

Initial Letter to Population

Dear Sir/Madam:

I am conducting a research study to establish a profile of current training programs used by businesses and industries in Southwest Virginia. Conducting this research partially fulfills the requirements for my doctoral degree at Virginia Tech.

The three purposes of this study are (a) to establish a profile of the current training practices of selected businesses and industries in Southwest Virginia and (b) identify the type of training methods these companies are choosing-traditional classroom training, web-based training programs or a combination of both and (c) identify the criteria that was used to select these training methods. The results of this study will ascertain a baseline for employee training programs currently used in business and industry. The only participants are those businesses and industries that participate in workforce development programs offered by community colleges located in the southwest region of Virginia.

I have posted a survey on-line that I would like you to complete so that I can collect data for this research project. I ask that you respond no later than **«Date»**. You can use your web browser to find the survey located at **http://24.197.24.21.** After locating the site on-line, you will need to enter the following code **«ID_Number»** and press **ENTER** so that the survey can be made available to you. In the event you choose not to complete the on-line version of the survey, please call me collect at 540.392.7805, and I will mail you a hard copy of the survey and self-addressed return envelope. Answering the questions on the survey should take no more than 15 minutes, and your identity will NOT be revealed or connected in any way to the responses you give. The code is used only so that I may know who responds on-line and then identify and contact non-respondents. After your response is received, your name will be marked as responded, and you will receive no additional correspondence. This will ensure strict anonymity and confidentiality.

Your expertise, experience, and professional input are vital to the success of this research project. All businesses in Southwest Virginia who participate in workforce development programs need to be represented in order for the results to be as accurate as possible. I urge you to please take time from your busy schedule to complete the survey as soon as possible. Thank you for your help in this research and in the improvement of the Southwest Virginia's Community College Workforce Development Service (WDS) programs!

Sincerely,

Katrina M. Hundley

Katrina M. Hundley
Doctoral Candidate

Kurt Eschenmann

Dr. Kurt Eschenmann, Professor
Advisor

APPENDIX F:

First Follow-up Letter to Nonrespondents

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

College of Human Resources and Education
Dept. of Career and Technical Education

202 War Memorial (0467)
Blacksburg, Virginia 24061
(540) 231-8198 Fax: (540) 231-2747
Email: khundley@vt.edu

First Follow-Up Letter to Nonrespondents

Dear «First Name» «Last Name»,

I recently sent you a letter requesting that you participate in research study I'm conducting at Virginia Tech. The results will establish a profile of current training programs used by businesses & industries throughout southwest Virginia. Performing this research is critical to fulfilling the requirements for my degree.

If you have already responded to the survey, please ignore this request and your cooperation is truly appreciated. If not, I urge you to take a moment and answer the survey questions. You can use your web browser to find the survey located at **http://24.197.24.21.** After locating the survey on-line, you will need to enter the following code **«Code»** and press **ENTER** so that the survey can be made available to you. In the event you choose not to complete the on-line version of the survey, please call me collect at 540.392.7805 or email me at khundley@vt.edu, and I will mail you a hard copy of the survey and self-addressed return envelope. Answering the questions on the survey will take no more than 15 minutes, and your identity will NOT be revealed or connected in any way to the responses you give.

Your expertise, experience, and professional input are vital to the success of this research project. Again, thank you for taking time to participate.

Sincerely,

Katrina M. Hundley

Katrina M. Hundley
Doctoral Candidate

APPENDIX G:

Second Follow-up Letter to Nonrespondents

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

College of Human Resources and Education
Dept. of Career and Technical Education

202 War Memorial (0467)
Blacksburg, Virginia 24061
(540) 231-8198 Fax: (540) 231-2747
Email: khundley@vt.edu

Second Follow-Up Letter to Non-Respondents

Dear «First Name» «Last Name»,

This is my third and final request asking that you participate in a research study I am conducting at Virginia Tech. As I explained in my initial letter, the results will establish a profile of current training programs used by businesses & industries throughout southwest Virginia. Completing this research project is critical to fulfilling the requirements for my degree, and I assure you that your identity will NOT be revealed or connected in any way to the responses you give. So please take 10-15 minutes to respond.

You can still find the survey located at http://24.197.24.21. After locating the survey on-line, you will need to enter the following code «Code» and press ENTER so that the survey can be made available to you. In the event you choose not to complete the on-line version of the survey, please call me collect at 540.392.7805 or email me at khundley@vt.edu, and I will mail you a printed version of the survey along with a stamped, self-addressed return envelope.

I urge you to take time and complete this survey as soon as possible. Your expertise, experience, and professional input are vital to the success of this research project. Again, thank you for your time.

Sincerely,

Katrina M. Hundley

Katrina M. Hundley
Doctoral Candidate