CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

FROM JOB SECURITY TO SKILLS SECURITY: A MIXED METHODS CASE STUDY DESIGN TO EVALUATE A STATE-FUNDED JOB TRAINING PROGRAM AT A COMMUNITY COLLEGE IN SOUTHERN CALIFORNIA

A dissertation submitted in partial fulfillment of the requirements for the degree of

Doctor of Education in Educational Leadership

By

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May 2015

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Acknowledgements

I would like to thank my dissertation chair, Dr. Richard W. Moore, and committee members, Dr. Merril A. Simon, Dr. Daniel R. Blake and Dean Pete A. Bellas for their patience and guidance throughout the process. I am forever grateful for their support and I thank them for all their hard work. Thank you to my editor, Dr. Guadalupe Garcia Montaño, for putting it together.

To my parents, Marvin and Elaine Kotin who taught me the world of business and everything else I know, including how to visualize and communicate while operating from multiple perspectives.

Thank you to my husband and best friend, Jon, for being incredibly patient and supportive. Thank you to my daughter Devyn; you have been and are my inspiration!

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Abstract

FROM JOB SECURITY TO SKILLS SECURITY: A MIXED METHODS CASE STUDY DESIGN TO EVALUATE A STATE-FUNDED JOB TRAINING PROGRAM AT A COMMUNITY COLLEGE IN SOUTHERN CALIFORNIA

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The following mixed methods case study design evaluated the effectiveness of a California Employment Training Panel-funded incumbent worker training program at a community college in Southern California. The specialized program was created in response to specific local business needs and provides training services for workers in local businesses. This study measured the effectiveness of a specific Employment Training Panel 2011/2012 contract program term at Creek Side Community College to the extent possible with the available documents, personal interviews, and survey of trainees. Four specific training interventions were evaluated to inform the college leadership and provide recommendations to improve future program evaluations. Materials developed in this study can be used as a resource for other incumbent worker training programs in that the evaluation method and instruments can be adapted to other settings. Within the limited available data this study provides indicators of whether the college's program achieved the learning objectives and of the program's overall effectiveness. Finally, it provides a review of the literature pertaining to federal and state

workforce programs and community college economic development efforts. Research provides evidence that trainees are using what they learned in training on the job. The training appeared successful in allowing trainees to gain the skills needed to improve productivity at their worksites. Most respondents felt positively about the quality of instruction, felt the learning objectives were met and trainees emerged more positive feelings about their employees. This study provides recommendations for the California Employment Training Panel program, and practitioners, such as community colleges and participating businesses.

CHAPTER I: INTRODUCTION

Introduction

President Obama, in his 2014 State of the Union address, highlighted that the United States needs an effective plan to fix the nation's job training programs. The President asked the U.S. Departments of Labor, Education and Commerce, in coordination with other departments and agencies, to develop an action plan that would "make the workforce and training system more job driven, integrated and effective" (Obama, 2014, January 28). In addition, the action plan is to encourage effective regional partnerships by consulting with industry, educators, worker representatives, workforce leaders, employer associations, state and local leaders, economic development organizations, education and training providers.

The 2009 economic downturn in the United States had a strong impact on California businesses and workers. At the time of this study, after four years of slow economic progress and employment growth in California, the demand for workers with technical skills is growing again. Businesses report difficulty hiring workers with the necessary skills for jobs they want to fill in some fields. Specifically, California needs a labor force with the training and skills to succeed in growing high-demand dynamic occupations industries such as manufacturing, technology, aerospace, healthcare, and medical devices industries. Given the shortage of skilled workers in these industries and continuing technological change, businesses are retraining existing workers. This is a time when not only education, but also skilled labor and job training are indispensable for economic success (Rounds, 2013).

Community colleges serve as significant and rapidly growing contributors to the nation's workforce and higher education system (Compton, Laanan & Starobin, 2010; Townsend & Shelly, 2008). They work directly with business and government labor agencies in their communities to create tailored education and training programs. The community college contract training programs examined in this study were specifically shaped to meet employers' needs while giving incumbent workers skills that will provide opportunities to enter jobs with growth potential, to earn family-sustaining wages and to progress along a career path.

Towards this end, in California, the Employment Training Panel (ETP) assists employers to strengthen their competitive edge by providing funds to offset the costs of training necessary to maintain high-performance workplaces. As the nation's largest state-funded training program for incumbent workers, the ETP provides funds to develop employees' skills to increase worker productivity (State of California, Employment Training Panel, 2013). The next chapter provides an in-depth discussion of the history and purpose of the ETP. The present study analyzed ETP training, which is often called contract training, provided by a community college for workers in entry level and advanced positions in local businesses. Four individual case studies for specific industries and their training programs are presented here.

Problem Statement

The focus of this study was the local economic development unit at a California community college given the pseudonym of Creek Side Community College (CSCC), which has an Employment Training Panel (ETP) 2011/2012 contract to provide incumbent worker training. The program was created in response to specific local

business needs and provides training services for incumbent workers in local businesses. It reports positive feedback from its internal and external stakeholders, but it has yet to undergo any substantive evaluation (CSCC Dean, personal communication, May 23, 2013). CSCC recognized the need for an independent evaluation of the program's effectiveness to inform college leadership and program staff and to plan for future program growth and improvement.

Purpose and Significance

Given that the program is both state-funded and utilizes the resources of a public institution of higher education, it is important to learn what drives businesses to seek this training, the goals of the business leaders, whether participants gained the required skills and achieved the intended outcomes, and whether the training program's processes meet the purposes of all involved. This study sought to evaluate the effectiveness of the training provided through one community college in terms of whether employees used newfound knowledge and skills on the job and whether businesses advanced as a result of the training. From a broader perspective, the results of this study may serve to inform the practices of the community college and similar training programs.

Community colleges have played a role in ETP programs because today's economic environment requires leaders at these institutions to look beyond their campuses and create a variety of collaborative opportunities that affect the quality of life in their service areas, both currently and for the foreseeable future (Townsend & Shelly, 2008).

Therefore, the purpose of this mixed-methods case study was to examine the effectiveness of a community college ETP incumbent worker job training program, as

community college workforce training programs play a central role in supporting economic development (Van Noy et al., 2008; Obama, 2014, January 30). Factors that influence workforce development and job training programs offered at community colleges are as diverse as the communities served. In addition, myriad methods for data collection in terms of non-credit workforce education make effective evaluation difficult. Additionally, because workforce education is not regulated by the academic rules governing credit education, recorded outcomes from non-credit programs vary and are not as well documented (Van Noy et al., 2008).

Given the evolving employment market, one can argue there is no longer true job security. There is, however, skills security in that "employers that keep their employees' skills up to date have much more productive and less apprehensive employees" (Bellas, 2014, personal communication). Therefore, on the individual level, job training provides opportunity for stability to both workers and their employers. In a broader context, this research is valuable, as workforce divisions in educational institutions can do more to institute job training evaluation or improve the quality of their current evaluation system. The significance of this study is three-fold. First, the study can be used as a resource for other job training programs in that the evaluation instruments can be adapted to their programs. This study looks at college, business and worker data with the intent of providing CSCC with an evaluation of the effectiveness of their ETP funded training program for both employers and employees. Strategically designed evaluations can provide valuable insight to improve programming, and, in doing so, ultimately influence workforce effects on the local and global landscape. Second, this study measures whether the college's program achieved the learning objectives and provides an

evaluation of the program's overall effectiveness. While measuring the impact of training on employees' earnings is important, this study looked at employment outcomes through a different lens and by taking in other aspects due to the fact that "effective evaluations must go beyond the measurement of earnings…" They should include collection of detailed data on whether skills are learned and usable and whether the employees' productivity improved as a result (Moore, Blake, Phillips, & McConaughy, 2003, p. 184). To that end, this study, using Kirkpatrick's (2006) training evaluation model, analyzed trainees' reaction to training, their learning, their use of skills learned and the impact of the training process on business productivity. Thirdly, the study provides a review of literature pertaining to federal to state workforce development trends and community college collaboration efforts in economic development. This study has the potential to be a model for how to evaluate contract training programs in community colleges.

This study uses a case study approach to measure the effectiveness four specific training programs funded by the college's ETP 2011/2012 contract. This evaluation will inform CSCC college leadership and will provide recommendations to improve the workforce training program. Finally, the collected data can help program staff modify curriculum and activities, expand the program, and develop future prospects by recruiting new businesses in addition to adding new training modules.

Definitions

The researcher provides the following definitions for terms utilized throughout this study. An "incumbent workforce" is made up of workers already employed by a company. In this study, "target industries" are those in aerospace, automotive, health

care and medical devices, and advanced printing technologies in manufacturing. "Training programs" are classroom and laboratory programs on campus and on-site training designed to develop workers specific skills to improve business productivity. "Laboratory", also known as Lab, training is hands-on instruction or skill acquisition provided by a qualified instructor. Lab training may be conducted in a simulated or productive work-setting. A "cohort" is a group of trainees who train and complete the same program together. "Consortium," for the purpose of this research, is a grouping of trainees from different businesses who participate in the same training of one or more skills programs.

Research Questions

Each case study sought to answer the following research questions:

1. What was the company's purpose for the training and the specific business issue training addressed?
2. How was the training designed and by whom?
3. What was the quality of the training delivered?
4. Did trainees achieve the established learning objectives?
5. Did trainees use what they learned in training while on the job?
6. Did the training make a difference on trainee performance in their work (i.e., improve productivity)?
7. Did the training achieve its intended business goals?
8. Were there secondary effects on the company in terms of improved motivation, better relations between managers and workers, and/or other organizational changes?

9. What can CSCC do to improve the delivery and overall process of the ETP training program?

Theoretical Framework

As Donald Kirkpatrick's (2006) training evaluation model is the most extensively used approach in organizational evaluations, the framework for this program evaluation was based on this model. This framework was particularly appropriate for this job training program study because it provides a clear approach to measure the program's impact on different levels.

Kirkpatrick (2006) established a hierarchical five-level model of measurement which includes evaluation of trainees' reaction to training, whether, in fact, the trainees did learn the skills and behavior, did trainees use the skills and knowledge learned on the job, and did the training process improve the trainee productivity. Because of its design, the model progress through the levels makes for increasing difficulty in measuring outcomes. For example, the first level, reaction, calls for data relatively easily collected. However, as research moves through the levels, measurement becomes more challenging Kirkpatrick's fifth level is a cost-benefit analysis of training, which is beyond the scope of this study. Nonetheless, applying this model provides evidence as to whether the training program should be sustained, modified or discontinued, while also allowing the business and college to know if the learning brings positive or negative results to the business.

Methodology

Measuring the effectiveness of incumbent worker contract job training programs and community colleges lends itself to a retrospective mixed-methods case study design. Creswell (1998) defines a case study as

> [A]n exploration of a "bounded system" or case (multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context. This *bounded system* is bounded by time and place and it is the case being studied – a program, an event, an activity or individuals. (p. 61)

This mixed-methods study used an embedded design wherein the qualitative interview and quantitative data collection took place sequentially, and each form of data played a supportive role to the other. Augmenting the data collection, according to Creswell (2012), is "to gather information that typically addresses a different question" (p. 545). Mixed-methods design combines the strength of both quantitative and qualitative research approaches.

Quantitative data collection uses specific narrowly-framed questions, collecting evidence in the form of numbers that measure distinctive characteristics of individuals or societies and aids in comparing groups or linked elements about those in experiments, studies or surveys (Creswell, 2012). Measuring outcomes of this training program, this study analyzed worker data through the use of a survey instrument from trainees enrolled in the program and interviews of management.

By incorporating qualitative interviews of business management and quantitative trainee surveys, a more comprehensive understanding of the training's quality and impact

were provided. Secondary data came from CSCC and the various industries contracted with them. For this evaluation, there were four separate case studies, one each at three individual industry sites and one consortium. Each case was measured by using Kirkpatrick's (2006) four level training evaluation model of the trainees' reaction, learning, use of and impact of productivity. Each site study consists of document analysis, manager interviews, site observations, and a trainee survey presented in a thematic and chronological case study narrative.

The retrospective aspect is critical to understanding the long-term effectiveness of the training. The 2011/2012 ETP contract with CSCC was complete when the research began. Evaluating the practices after the training events occurred and the ETP contract reached an end contributed sufficient and powerful data for analysis. The population for this research included four business categories, each with 90 or more employees in target industries of advanced manufacturing: aerospace, automotive, printing and health and medical devices.

Limitations and Delimitations

There are limitations due to the fact that this study looked at a program at just one community college; therefore, findings derived from this study are not generalizable. The parameters of this study were chosen by the college program director. This is limiting, as the chosen training programs may have bias in terms of known outcomes or convenience. With respect to measurement and evaluation, it is expressed that "there is more talk than action as human resources managers are reluctant to disclose their approaches to evaluation and bottom-line ties to their training efforts" (Phillips, 2006, p. 5). Therefore, this study was limited by respondents' willingness to discuss their

programs and processes. Documentation of contract training assessment within community colleges has not been readily available. Although the economy is on an upswing, the demographics changing due to recent employment trends, and trainees' relocating are considerations that are potential factors of concern.

Delimitations include the boundaries for the study with a main focus on just three industries and one specific consortium within the ETP 2011-2012 contract. The study was delimited to four separate case studies. Results may not be applicable to all four sites as training needs and business cultures vary. In addition, this study analyzes participants' reactions, learning, behavior, and results on productivity. Factors such as gains in earnings are beyond the scope of this study.

Organization of the Dissertation

Chapter II presents a literature review to justify this study and present gaps in the literature while adding the theoretical framework underlying the study. Chapter III positions the study in the methodological stance of a mixed-methods case study. Data was obtained through surveys, interviews and secondary data sets. Chapter IV provides results in a statistical and narrative format, providing rationale of both methods results an inconsistencies or discrepancies in the analysis. Chapter V integrates the four case studies and benchmarks then against previous research it then makes recommendations for policy and practice.

CHAPTER II: REVIEW OF THE LITERATURE

Introduction

President Obama (2014) ordered a review of federal job training programs and expressed that some of the many programs do not prepare workers for existing jobs. The public workforce system, which provides customized training programs, recognizes that training for individuals must align with and support the needs of business and industry.

Workforce employment training programs and their missions differ from vocational education, yet both are related to building the skills and competencies of American workers. Workforce employment training programs have both federal and state-funded initiatives. Each funding stream's criteria vary in terms of whom the programs target for training and how training is provided. Federally-funded programs typically assist disadvantaged, dislocated and unemployed individuals. They provide resources such as pre-employment training, job search, placement services and childcare services (U.S. Department of Labor, Employment and Training Administration, 2012).

The purpose of this study was to evaluate the effectiveness of a community college's ETP job training program for incumbent workers. In order to understand the context for this study, it is important to know the background of government involvement in workforce development from federal, state and regional initiatives. This chapter explores these topics in order to provide a foundation for this study's framework pertaining to Donald Kirkpatrick's (2006) training evaluation model. This literature review begins with an historical overview of the government's investment in workforce training, describing several reforms of education and labor market policies, in order to situate the present study. The review describes state financed customized

training programs and partnerships. Next, the review of literature examines California's state-funded job training program, the Employment Training Panel (ETP). Subsequently, the review examines community colleges' participation in workforce and economic development. The chapter concludes with the study's conceptual framework for evaluation of job training programs and explains Kirkpatrick's four levels of evaluation.

Historical Context of Government Investment in Workforce Training

There is a long history of research showing positive returns to individuals and the economy as a whole for public investments in skills training and vocational education. Education to train workers is a positive and a cost-effective public investment that both social scientists and economists agree helps to develop human capacities and stimulate economic growth (Altbach, Berdahl, & Gumport, 2005; Becker, 1993; O'Leary, Straits, & Wander, 2004; Rhoads & Torres, 2006; Slaughter & Rhoades, 2004). Throughout the years, studies on job training programs have provided positive economic effects for individual trainees, employers and society alike. Positive outcomes include trainees' increased earnings, employer improved sales, lowered waste, and an overall decrease in crime and poverty rates. These positive effects of job training programs made for additional interest in research and in the construction of new policies and practices with workforce and educational collaborators (Slaughter & Rhoades, 2004; Torpey, 2011).

America's federal and state workforce initiatives became significant during the end of the agricultural era at the turn of the 20th century when industry was on the rise. Manufacturing businesses became workforce participants and providers of jobs for the new industrial economy. During this progressive era in the early 1900's, the federal government established the first federally-funded vocational education programs as the

American workforce needed to be educated to keep up with changing skill demands of the new industrial processes. Subsequently, increases in manufacturing and evolving technological developments changed how America prepared individuals and businesses for economic success at the federal, state and local levels (Slaughter & Rhoades, 2004).

Vocational Education versus Customized Workforce Employment Training Programs

Vocational education is similar to traditional community college education in that both offer open admission to all and emphasize occupational preparation. Offering certificate and associate degree programs, vocational education programs are primarily federally-funded and supported by community-based organizations, unions, proprietary schools and educational institutions. They include internship, apprenticeship, and curricula which target programs with the most promising potential for employment opportunities. Vocational education programs also include a range of remediation programs that assist individuals in need of general equivalency high school diplomas. According to Grubb (2001), "vocational education has the potential to bridge education and training, yet providers of vocational and adult education have failed to participate in state discussions about workforce development" often resulting in "program duplication, waste and ineffectiveness" (p. 28).

Workforce programs evolved in the 20th century and resulted in numerous revisions of objectives, legislative representations and budget allocations on the federal, state and local level as well as in public and private investments. These workforce programs are designed for varied participant groups to receive skilled training. Although mostly intended to train new workers, in past years, programs have been designed to

retrain experienced workers, align with new industry, liberate the poverty stricken, create jobs, assist women, support veterans, transform welfare recipients into earners, encourage high school graduation and help reduce juvenile delinquency rates. More recently, the increased competition in the global economy faced by American manufacturing firms led to changes in federal and state workforce programs, which, yet again, restructured and redefined how federal and state legislators must reinvest in the operations of workforce programs and educational institutions.

Historic Overview of the Vocational Education Act to the Job Training Partnership Act

The Smith-Hughes Vocational Act of 1917 signified the start of a vocational educational subsidy from the federal government that sought to promote a skilled workforce. The Smith-Hughes Act defined vocational education as instructional programs primarily for high schools and trade schools in agriculture, trade, industry and home economics (Friedel, 2011). With this act came the creation of the Federal Board for Vocational Education requiring the establishment of state boards to oversee activities and provide assurance that funds were allocated primarily for secondary education activities considered beneficial for employment purposes. While several states created boards completely separate from their boards of education, other states did not. These inconsistencies created confusion about the governance structures, their missions and made it difficult to adhere to federal requirements.

The Smith-Hughes Act ultimately became the Vocational Act of 1963 and was revised in 1968. The goals of the 1963 act were to assist the “baby boomer” generation by improving the training available to them as well as by retraining older workers

displaced by technological advances. In the 1960's, the growth of industry, community college systems and adult education specifically related to war actions led the federal and state governments to revisit their responsibilities to Americans (United States Department of Labor [USDOL], 2014). Subsequently, this act placed importance on disadvantaged students and individuals while also increasing academic and technical instruction funding (Friedel, 2011; Grubb, 2001). The Vocational Act of 1968 had then been redrafted to become the Carl D. Perkins Act of 1984. The Perkins Act instilled a new language to workforce education by amending the title from vocational to Career and Technical Education (CTE). This new law linked academic and technical activities throughout secondary and higher education institutions (United States Department of Education, 2014).

The Manpower Development and Training Act (MDTA) of 1962 was initiated and signed by President John F. Kennedy in his "New Frontier" era, initiating another time of federal involvement (USDOL, 2014). The MDTA was designed out of the fear of another possible depression, the country's sensitivity to the issues of unemployment and economic growth, and the threat of replacing men with machines. The MDTA's prime purpose was to train and retrain unemployed workers due to automation and technological developments. Accepting part of the responsibility for retraining workers, some industries and unions paid a levy into a fund for retraining purposes (USDOL, 2014). Although these programs minimized the difficulty in transition to automation, the change of technology was so grand it required the government to step in, for the sake of national progress, and bring industry and education into closer alignment (USDOL, 2012).

The Comprehensive Employment Training Act (CETA) of 1973 through 1982, which replaced the MDTA, was another federally-funded program with emphasis on assisting the economically disadvantaged, the unemployed and those workers with little or no future for advancement in their current employment. CETA also established Job Corps and Summer Youth Employment programs. In its nine years of existence, CETA was amended as many times and also experienced serious funding instabilities. A 1982 Government Accountability Office (GAO) report on the effectiveness of CETA describes weaknesses in state and local government development systems which hindered movement of the training participants into unsubsidized jobs (United States, Government Accountability Office, 2012).

Economic factors at the beginning of the 1980's led the federal government to establish the largest federally-funded employment training program to date: the Job Training Partnership Act of 1982 (JTPA), designed to improve business productivity and increase workers' contributions toward their own job security.

JTPA encouraged businesses and state and local governments to collaborate as well as train the disadvantaged and dislocated workers for employment in the private sector (Guttman, 1983). The National JTPA's study and 1991 report of coordination activities show that efforts and collaboration with other agencies were effective (USDOL, 2012). JTPA is based on pay for performance, with research showing both criticism and approval outcomes (Baj, Trott & Stevens, 1991; Briggs, 1997; Heinrich, 1998). For example, a report by Baj et al (1991) provides an examination of pre- and post-program employment earnings for JTPA participants and showed increased post-program earnings, yet also showed declining post-program employment with delays in job

placements for the participants in remedial and basic education programs: "Job specific training provided directly by businesses, concurrently with basic education and supportive services when necessary, is likely to be more effective in increasing workers skills than many job preparation services currently provided in public programs" (Heinrich, 1998, p. 663). On-the-job training and job search assistance components of JTPA are cited as the most effective for both male and female participants, yet only a little more than a quarter of the participants received this training (Heinrich, 1998). Further investigation showed a trend towards shorter term and less intensive training programs and evidence that basic skills and pre-employment training may be required to better prepare the more disadvantaged (Baj et al., 1991; Heinrich, 1998).

A New Workforce Investment System

In 1998, the JTPA was supplanted by the Workforce Investment Act (WIA). It was signed by President Clinton in 1998 and became a federal law on July 1, 2000. WIA reformed federal job training and created a new workforce investment system. WIA federal programs were designed to assist individuals in gainful employment, authorizing funding and establishing a plan for the implementation of individual local and state workforce development systems. A major piece of job training legislation, WIA consolidated various Department of Labor job training programs. This new legislation created one-stop career centers in every state to help job seekers negotiate their way through the otherwise ambiguous system of federal job training programs (Workforce Investment Act, 2000). Amongst various WIA program funding streams are allocations for on-the-job training, customized training provided by the employer, and preparations

designed for special interest groups, such as farmers, veterans, disadvantaged or individuals facing barriers to employment (Decker & Berk, 2011).

There is also a state-level community college sponsored system called Job Development Incentive Funds (JDIF). In California, these competitive funds are awarded annually through the Chancellor's Office of the California Community Colleges to programs which support businesses in meeting training demands. JDIF provides training on a no-to-low cost basis to participating employers. The projects must lead to upgrading of highly-skilled and technical workers. The main initiative is to train the workforce in environment, health, safety and homeland security fields, while supporting the training and educational needs of California community college students (California Community Colleges, Chancellors Office, 2014b). These grants that have specific targets of job development often lead to the Intrastate Training Resources and Information Network (iTrain), which offers an interactive, user-friendly alternative to traditional workforce development service delivery. These iTrain-approved courses are later leveraged by the WorkSource System (California Community Colleges, Chancellors Office, 2014b).

Along with WIA's newly enacted legislation came state Workforce Investment Boards (WIB) to oversee activities, much like the state boards created for vocational education and prior state boards called State Job Training Coordinating Councils. Furthermore, WIA calls for the state governor, by means of the WIB, to submit a State Strategic Workforce Plan to the US Department of Labor. The plan encompasses a five-year strategic outline for investments of workforce training and employment services. In California, the State Board must work in partnership with the Chancellor of the Community Colleges, the State Department of Education, local WIB's and other relevant

external agencies. These collaborating external agencies may be community-based, economic development organizations, unions, or employers who are facing challenges (Workforce Investment Act, 2013). The purpose is to develop a comprehensive state plan that functions as a tangible outline for public policy, fiscal outlay and operation of all state labor exchanges, workforce education and training programs. This is especially relevant in California's recovering economy.

One-Stop Career Centers were created as part of the new WIA and are yet another step towards the WIA's commitment to economic development. One-Stop Centers house various resources in one location for job seekers and businesses alike. In certain circumstances, employers may receive reimbursement for up to 50 percent of the costs to provide additional on-the-job training for individuals hired through the public workforce system. The centers serve individuals who are seeking employment, changing jobs, reentering the workforce, or learning new skills as well as this study's focus: offering business services, including on-the-job training, specifically for incumbent workers (USDOL, 2012). Mandatory partners for One-Stop-Centers include Adult, Dislocated and Youth Programs, Youth Opportunity Grants, Job Corps, Native American Programs, Migrant and Seasonal Farm Worker Programs, Veterans Workforce Investment Program, Wagner-Peyser Program, Welfare-to-Work, Unemployment Insurance, Senior Community Service Employment, Adult Education & Literacy Activities, Vocational Rehabilitation Programs, Post-Secondary Vocational Education, Veterans Education & Training Services, HUD Employment & Training Programs and the Community Services Block Grant Act (Workforce Investment Act, 2012). Each One-Stop System Partner must enter into a Memorandum of Understanding (MOU) with the local Workforce

Investment Board. The MOU describes the services that will be provided, the costs and the method of referral (USDOL, 2012).

Effectiveness of WIA

A comprehensive 12 local area study report prepared for the California Workforce Investment Board shows one-stop-center facilities provide multiple activities and services (Moore, Gorman, & Wilson, 2007). Community Colleges view WIA as a prime means of broadening educational programs and services for adults by targeting the same audience they have traditionally served, and now these adult students want to improve their employment and economic status as well. WIA's influence on and resources for community colleges play an integral part of education and training geared towards educating older adults and working populations (Jacobs, 2001).

An analysis of training and demographics for WIA program dislocated workers by Moore and Gorman (2009) shows neither job training, nor work-first strategies outperform each other for individuals. The work-first approach emphasizes quick entry into the labor market through a combination of job search and short-term education or work experience activities. There are short-term and long-term tradeoffs for both strategies. The authors stated that having received on-the-job training was positively associated with finding employment. However, occupational skills training was not, possibly due to on-the-job trainees' being better prepared in anticipating employers' needs. This report uses participants' characteristics and various types of training interventions. However, there is no indication or breakdown of specific industry for businesses that are providing these individuals on-the-job training services.

The WIA brought about changes in the workforce training system as it shifted responsibility amongst layers of government. States became responsible for funding to the local entities, outreach and coordination. Decisions about system operations shifted away from the federal government to local and state control while performance management of WIA was the DOL's central focus (Besharov & Cottingham, 2011). Bragg and Russman (2007) shed light on the WIA collaboration efforts associated with public policy at the federal and state levels, sharing disparaging implications at the crossroads where policy meets practice. Earlier research also implicates the issues of different approaches to structuring, administering programs and implementation (Jacobs, 2001; Monaghan & Hansman, 2009):

Ginzberg, Williams, and Dutka (1989) state:

> The vast variability on the local management and leadership in these programs, differences in the strengths and weaknesses of local communities, playing such a role in determining labor needs, along with the absence of reliable data of program completion and analysis of the participants, leaves questions about whether such large expenditures of federal and state funds should continue. (p. 14)

Yet, as a result of the variability and flexibility in WIA legislation, local areas can be more responsive to the needs of local employers, workers and economic conditions of their community.

The WIA of 1998 workforce system approach may not be meeting its potential in our new economy, as it was designed under substantially different economic circumstances, and the current workforce has experienced significant changes. Its

emphasis was on work-first policies, not on assisting workers or businesses to develop and build upon their human capital (Soares & Steigleger, 2012). Employers such as the auto, steel, and aerospace industries are closing or have closed many local facilities. Those still in business are hiring white-collar workers requiring advanced technical training skill sets (Jacobs & Doherty, 2006). America's new challenge is to develop low-skilled workers into a higher skilled workforce and, with that, motivate economic growth and an individual's capability for upward mobility.

Workforce Development Skill Gaps

There is currently a growing shortage of skilled workers for some major California regional industry sectors such as aerospace, health care, medical devices, technology, green sustainability, and hazardous waste. Regarding the labor market training and employment system, there are also many unemployed and underemployed individuals in California's fragmented and under-resourced approach to workforce expansion (California Economic Summit, 2013). In their *Plan to Advance Prosperity for 2014*, the California Economic Summit states that a best practice to defragment the workforce system would be connecting industry partnerships by requiring improved employer engagement in key target industries in collaboration with integrating the workforce resources that WIA provides to trainees. In order to achieve this, states play a critical role in making the needs of economic workforce development known to politicians and institutional leaders. They can expand this understanding of how to invest in the regional industries through collaboration with industry (Bragg, Dresser & Smith, 2012).

Preparing America's workforce for jobs in our knowledge-based, technological and greener economy can provide new opportunities for low, middle and high skilled workers (Soares & Steigleder, 2012). Some of these jobs require not only basic technical skills, but academic and or post-secondary credentials as well. The mismatch between the skills needed and what the job requires presents a gap to be filled. The development and refining of pedagogy for training and education consistent with labor values is critical for the individual and the target industry (Swinney, 2001).

Monaghan and Hansman (2009) explored the impacts of WIA funding and employees who need additional advanced technological training in their current employment. The authors express incumbent workers' current tasks and goals should be linked with their employers' needs and objectives. This suggests that trainees as well as employers should be involved to ensure that training programs are well planned for specific workforce specialty needs. Another gap is that many workers lack basic skill sets as well as advanced technical skills. Workers' abilities and their educational foundations are insufficient for the demands of jobs in our current economy. Some experts say "if there is a skills mismatch it is believed to be restricted to those with only a high school degree and less or disadvantaged minorities" (Handel, 2003; Jacoby & Goldschmidt, 1998). Evidently, skill sets play a crucial role within the labor market and within educational institutions' framework for understanding what is happening inside the workplace.

State Financed, Customized Training Programs

State-Funded Programs for Businesses and Incumbent Workers

Support for incumbent worker training is an important facet of regional economic development strategies as continuous skill development is frequently required to keep a step ahead of worldwide competition. State-funded customized programs began in the late 1950's in the Southeastern United States. According to Duscha and Graves (2006), southern states offered to subsidize training costs to encourage northern manufacturers to relocate to the predominantly agricultural south. A by-product of relocating was new opportunities for laborers who would now be exposed to more jobs. Eventually, other regions in the mid-west and west designed economic development strategies to attract and compete for new and dynamic businesses, which included incumbent workers and new hire training programs. Duscha and Graves (2006) expressed in their report, *State-Financed Customized Training*, that 47 states include training as an incentive for their economic development initiatives. States vary on their decisions to support incumbent worker training, with some focusing only on which high-growth industries may be eligible and on what yearly funding limits would be available. Other mechanisms to create business alliances include customized training for employers and their employees utilizing the employers own resources, attracting or maintaining businesses within the state, training for mid-skill level workers currently employed, and responding to periodic labor shortages in high growth and specialized industries (USDOL, 2012).

In California, as of 2006, one million people had been trained through ETP, and the total spent on training was $562,000,000 over 23 years. Stemming from different needs, states have varied administrative arrangements, budgets, sources of funding and

program rules (Duscha & Graves, 2006). Since 2006, there has been no national research on state financed training programs. Because, in California, training services are provided through community or technical junior colleges, whether at the campus, at the industrial site, or through training activities the business selects, the sections below provide further discussion on ETP and its connection with community colleges.

In addition to being employer-focused, common features of state customized training programs include training predominantly for manufacturers and other non-retail service businesses that sell or compete with out-of-state firms, including health care industries. State programs have flexibility for spending and can open the boundaries for "other" target industries when necessary. Also, state programs regard hiring and training selection as the obligation of the employer, not the state. They target mostly middle level workers, production workers and first line supervisors. Trainees must earn more than minimum wage, and some states have set the ceiling at 200 percent above minimum wage. Some states also have training for managers and administrative personnel. Training programs generally include equipment operation, office and factory computer software, customer service, and quality and sustainability initiatives. Training is delivered in various ways: some is on the job, instructor led classroom training, and, although few utilize computer-based training, most states do support this training model (Duscha & Graves, 2006).

Assessment and Evaluation Practices of Customized Training Programs

Twenty five years ago, at a time when there was a shift in employment opportunities from manufacturing to services along with importing of goods, displacement of workers was widespread. Leigh (1989) evaluated the merits of Illinois'

state initiatives of performance based contracting and employer participation in their workforce programs. The author's research shows that job search assistance initiatives for displaced workers were effective while investments in training yielded much smaller net benefits. More recently, some states such as Alaska, California, Washington and Wyoming, have examined employment and wage comparisons using unemployment data, but there is no significant continuous evaluation of how effective these training programs are (Duscha & Graves, 2006).

Today, there is renewed interest in American employment and training policy, creating employer-centered strategies focused on assessment and evaluation of these customized training programs (United States, Office of Personnel Management, 2011). Customized training programs are individually tailored to the industry or business needs. Topics range from customer service, new software skills, manufacturing, green technology, healthcare, aerospace and more. Government and business training partnerships have varying models and profiles. In fact, many incumbent worker and customized training programs provide businesses with grants to partner with training providers. Typically, other workforce development programs focus on pre-employment training. Through the U.S. Department of Labor and the U.S. Department of Education, many of these grants emphasize evidence-based program design requiring collection of rigorous student outcome data and building a knowledge base presenting which strategies are most effective for industry partners (USDOL, 2012). Providers, such as community colleges, offer job-specific training of incumbent workers or new hires and each state uses different mechanisms to encourage businesses and workers.

On-the-Job Training

Fundamentally, the concept is that on-the-job "employee learning programs, when administrated effectively, increase employee productivity and performance outcomes" (Combs, Luthans, & Griffith, 2009). Nobel Economist Gary Becker (1993) regards training while on the job as having great importance and states, "employee trainees increase their productivity by learning new skills as they are perfecting old ones" (p. 10). On-the-job training helps workers acquire skills needed to become competent in the occupation in which they work. Usually, this training begins after the worker is hired, but there are exceptions such as internship and apprentice programs. On-the-job training is part of state-sponsored training. Only a handful of states pay employee wages while on-the-job training occurs. Typically, these are for economic development projects (Duscha & Graves, 2006). State-sponsored training programs use different training protocols.

On-the-job training can be either job- or occupation-specific. Job-specific training helps workers learn about an individual employer's procedures or equipment, yet these skills are not necessarily transferrable to another job. Occupation-specific training allows workers to transfer the skills they learn in one job to another job within the same occupation. Within the two categories, there are various modalities of training. Training models include classroom, computer-based, and on-the-job performance at industry site or a training location, and these models can be independent of each other or combined. Time spent training employees in either general or specific modalities are beneficial for the employee and the employer.

California Employment Training Panel

The California Employment Training Panel (ETP) is a state agency that "assists employers in strengthening their competitive edge to maintain high-performance workplaces by providing funds to offset costs of job skills training" (State of California, Employment Training Panel, 2013). The underlying goal of ETP is to support job creation and retention through training. In 1983, California was the first state to change the law to allow a portion of unemployment insurance taxes to be used for training. The tax is called the Employment Training Tax (ETT), and it is paid by California employers. ETT is .1% of the first $7,000 of earnings covered by unemployment insurance. This comes out to $7.00 per worker each year (State of California Employment Training Panel, 2013). Only employers subject to ETT can benefit from ETP-funded training. ETP does not pay the cost of employees' salaries while they are training.

According to ETP's 2011-2012 strategic plan, their program budget total for fiscal year 2011-2012 was $46 million (State of California, Employment Training Panel, Strategic Plan, 2011-2012). With prior-year commitments and administration costs, ETP had $23 million available to fund new fiscal year 2011-2012 contracts. Not all of the money generated by the tax goes to ETP; due to recent budget crises, money has been diverted to other purposes. Funded initially by the special unemployment insurance tax, ETP has received approximately 11% additional funding mainly through distributions from California's Labor and Workforce Development Agency (LWDA) and the California Energy Commission (CEC), for alternative and pilot programs related to jobs that are emerging from California's recovering economy (State of California Employment Training Panel, 2012).

It is important to note for this study that the ETP is governed by an eight-member panel of bipartisan leaders made up of management and labor representatives, seven of whom are appointed by the Governor and legislature, and a designee ex-officio member. The primary functions of the panel are to approve training proposals and implement suitable program policies and guidelines in addition to making final resolutions as to appeals decisions made by the Executive Director (State of California Employment Training Panel, 2012). The panel generally meets monthly and a Chairperson, appointed by the Governor, leads the Panel's deliberations. A majority vote of the quorum is required for decisions on contract approvals and appeals. The significance of the ETP governance is to provide a background of criteria and standards that have been established. In order to qualify for ETP funding, the participating business must fulfill certain obligations.

ETP targets industries in various types of manufacturing, high technology and healthcare to provide training which, in turn, will improve work processes. Five criteria are required by businesses to qualify for ETP funding (Duscha & Graves, 2006; State of California Employment Training Panel, 2012). Businesses must be in an eligible industry, have ample money to match funding, have sufficient trainees, wages of trainees must be between $9 and $26 per hour (dependent upon the region, new hire or re-trainee or those in high unemployment areas), and show critical mass of employees to fill the classrooms in order to justify the economic and administrative costs of working with the state (State of California Employment Training Panel, 2013). A unique feature of ETP is that it is a pay-for-performance program. Before ETP reimburses employers for training, they must provide proof that training hours have been completed, trainees have been

trained for better-paying jobs, and trainees must be placed in a related job and retained for at least 90-days.

ETP funds training through three types of contracts: single employer contracts, multiple employer contracts, and new hire contracts. Training for business employers provided by ETP is either directly through the employer, as in single employer contracts (SEC), or indirectly through multiple employer contracts (MEC) such as community colleges, industry associations, unions and for profit schools where groups of employees from multiple employers with similar training needs are trained together by a training agency. In single employer contracts, employers contract with ETP and provide training to their employee needs, either by hiring a training contractor or providing training themselves. Multiple employer contracts are where a training agency uses ETP funds to serve multiple employers and the employers do not contract directly with ETP.

New hire projects include multiple employer contractors and both public and private training agencies. Workforce Investment Boards and Workforce Investment Act Grant recipients may provide training and placement services to unemployed workers with ETP's new-hire training program. New hire trainees are unemployed at the start of ETP-funded training and are receiving Unemployment Insurance Benefits at the time of hire or have exhausted their benefits within the previous two-year period. Employees who have received a layoff notice from their company are also eligible for these training projects (State of California Employment Training Panel, 2012).

ETP has three training models. The first is the traditional classroom. The second is the laboratory model, which provides hands-on instruction and may be conducted in a simulated or productive work setting where employees practice skills learned in class.

The third model is electronic delivery ttraining. Electronic delivery training has three models, computer based training; where instruction is delivered though a computer program at a pace set by the trainee, video conferencing; live and interactive through video communications, and e-learning; delivered by an instructor, through a web-based system. A majority of projects combine two or three training modes; most common is class and lab (State of California Employment Training Panel, 2012).

In the ETP program, the on-the-job training model was previously called structured on-site training (SOST). However, given issues identified through independent research (Moore et al, 2002) and inherent difficulties in administering SOST, ETP placed an indefinite funding moratorium on SOST in 2003. In 2008, in accordance with the Assembly Committee on Labor and Employment, Assembly Bill 2570, and the ETP panel, ETP policy assumed a new definition of SOST, called simulated and productive laboratory training, where aspects of SOST are present, but where work products are essentially "for practice" and cannot be sold or used for profit (AB 2570, 2007-2008).

The following section presents the background of the ETP, its operations, prior assessments and recommendations in order to situate the importance of the research questions regarding the effectiveness of the ETP training program central to this study. In terms of evaluation of these programs, there are a few studies on California's ETP, such as Moore et al. (2004), and the *San Francisco State Report to the Employment Training Panel: Evaluation of the Small Business Pilot Program* (McCline, Eisman, & Gonzalez-White, 2003).

The Small Business Pilot Program study was limited to small employers with 100 or fewer employees and met the out of state competition requirements. After project completion, in order to increase the number of small business employers who contract directly with ETP, the business application processes were streamlined, fewer training hours were determined to be more feasible for small firms, and processing time and a modified two-payment schedule with an expedited invoice process were implemented (McCline et al., 2003). Subsequently, the pilot was successful in increasing small business contracts, and the program expanded and was made permanent.

The multi-method evaluation by Moore et al. (2004) focused on single and multiple employer project design. This comprehensive evaluation looked at impact of ETP investments, improving training practices and refocusing on new hire training projects. This project measured the impact of ETP from multiple perspectives. Moore et al. (2004) mixed methods study consisted of economic analysis of company growth and trainee earnings, surveys of businesses and focus groups over several years. It was a largely positive study with respect to ETP's impact on business, workers and overall contribution to the California economy. The study identified areas that needed improvement to maximize ETP's impact.

One of this case study's evaluations was of a consortium consisting of an off-site multiple employee training project. Based on empirical analysis of 16 multiple ETP projects over several years, Moore et al. (2004) found that multiple employer contracts should focus on on-site training, and suggests that off-site training projects made up of varied employee trainees should be eliminated. Moore et al. (2004) show that multiple employer projects, made up of trainees from many employers, had a smaller impact on

trainee earnings, less positive impact on the business, less management participation and were more costly on a per-trainee basis, therefore providing strong evidence that customized training is more effective (Moore et al., 2004). For example, the dollar earnings increase of trainees from single employer projects was reported at $3,000 greater than that of trainees in multiple employer projects (Moore et al., 2004). In addition, the percentage of companies served by MEC's that reported a positive performance and impact were far less than the SEC's. Yet, businesses both in SEC's and MEC's who used ETP training reported a "meaningful or major positive impact on worker productivity, problem solving ability and teamwork", improved communication and enhanced job satisfaction were other substantial gains from the training (Moore et al., 2004, p. VI-28).

Moore et al. (2004) found that ETP should require training needs assessment as part of the application for MECs and SECs. ETP should also provide templates for these needs assessments. In addition, Moore et al. evaluated trainees' perceptions of training quality from a range of areas: instructor effectiveness, usefulness of topics, clearly defined objectives, instructors keeping trainees interested and motivated. Trainees in the study rated the overall effectiveness of training at a 3.27 on a 4 point scale, a figure equivalent with similar training survey results (Moore et al., 2004). Correspondingly, trainees reported that they used the skills learned in training often; nearly 50% used the skills daily and approximately 36 % used the material monthly. Also, 54% of the trainees indicated that their productivity increased as a result of the ETP training. Furthermore, finding show that there were positive changes to the work environment, such as

"improved communications between supervisors and workers, attitude toward employer and worker motivation" (Moore et al., 2004, p. VI-32).

The Moore et al. (2004) study recommends that ETP require clear behavioral learning objectives and a completely designed curriculum prior to training. Also noted was that employers should complete a confidential standard evaluation questionnaire, so ETP can measure its impact on companies (Moore et al., 2004). Currently, there is no specific or standard evaluation tool for state-funded, incumbent worker training assessment throughout the state or within ETP. This study utilizes Moore et al.'s (2004) research findings as a benchmark and also uses a modified version of the researcher's mechanisms of interview questions and survey instruments. The present study sought to build on the research conducted by Moore et al. (2004).

Analysis of previous research on ETP, leads to this study's research questions regarding the effectiveness of ETP training at the college examined here. The findings bring us to the significance for this study as the community college sought to conduct an evaluation of their ETP training program. The following section provides an understanding to how prior and current research on community colleges practices improve economic pathways for their students and surrounding communities, by collaborating with local business and city and state governing bodies.

Community Colleges Practices

Community Colleges' New Mission in Economic Development

America's community colleges play an important role in educating and preparing individuals for successful participation in the workforce (Compton, Laanan, & Starobin, 2010).

Community colleges' benefit through collaboration to increase and ease access, serve constituents needs, understand competition, avoid duplication and increase resources (Bragg & Russman, 2007). The California Community College (CCC) system enrolls more than 2.1 million students annually, throughout 112 colleges (California Community Colleges Chancellor's Office, 2014a). The CCC system mission is separate and distinct from that of the California State University or the University of California, as specified in Title 5§ 66010.4:

> (1) The California Community Colleges shall, as a primary mission, offer academic and vocational instruction at the lower division level for both younger and older students, including those persons returning to school. Public community colleges shall offer instruction through but not beyond the second year of college. These institutions may grant the associate in arts and the associate in science degree.
>
> (2) In addition to the primary mission of academic and vocational instruction, the community colleges shall offer instruction and courses to achieve all of the following:
>
> > (A) The provision of remedial instruction for those in need of it and, in conjunction with the school districts, instruction in English as a second language, adult noncredit instruction, and support services which help students succeed at the postsecondary level are reaffirmed and supported as essential and important functions of the community colleges.

(B) The provision of adult noncredit education curricula in areas defined as being in the state's interest is an essential and important function of the community colleges.

(C) The provision of community services courses and programs is an authorized function of the community colleges so long as their provision is compatible with an institution's ability to meet its obligations in its primary missions.

(3) A primary mission of the California Community Colleges is to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous work force improvement.

(4) The community colleges may conduct to the extent that state funding is provided, institutional research concerning student learning and retention as is needed to facilitate their educational missions. (EdSource, 2012)

The contract education function in California was significantly expanded in 1995 with Ed Code 66010 to include the broad Economic Development function. The five functions of community colleges traditionally have been academic transfer preparation, vocation-technical, continuing and developmental education, and community service (Cohen & Brawer, 2003). More recently, the emergence of the new economic workforce and development strategy has become an added function of the community college mission. Here in California, the California Community College Chancellor's Office (CCCCO) partners with representatives from ETP and other state agencies connected to workforce and training initiatives throughout the state for economic revitalization efforts (California Community Colleges, Chancellors Office, 2013).

Historically, in the face of changing training demands, shriveling government support, and rising competition, there was uncertainty in the prospectus of community college and workforce development (Jacobs & Dougherty, 2006). Now, throughout the United States, community colleges have become providers of training services in specialized fields such as healthcare, green technology, manufacturing, and software development. Offered as contract training, non-credit courses delivered on campus, at the employer's site or online, these programs are developed to meet the needs of communities, businesses and employers alike. However, these activities have sometimes been thought of as competing with academic missions within the community college. Additionally, this belief was that trade and industrial education teachers are unique and should be set apart from those who teach academics.

Over the last 30 years, many community colleges have expanded their economic development role to include contracting with businesses to train their current or prospective employees in various job skills. Even though in a recent study by Katsinas, D'Amico and Friedel (2012), "[c]ommunity college leaders believe high unemployment has strained the available workforce training capacity" and budget woes have limited the development and maintenance of programs to prepare individuals for high skill, high wage jobs (p. 13). Some say that community colleges are still the largest providers of human resource development with programs aimed at improving employability and occupational advancement of large numbers of citizens (Ghosh & Githens, 2012; Ginzberg et al., 1989). For some community college leaders, particularly when resources are limited or diminishing, community engagement and regional alliances are key

strategies, as “collaboration is a vital strategy to ensure the comprehensive mission of the institution is sustained” and continues to grow (Bragg & Russman, 2007, p. 94).

In order to increase state support for regional sector partnerships, the public workforce system qualifies community colleges as employment training providers as they promote training programs for manufacturing that meet the skills requirements of industry (California Economic Summit, 2013). The coupling of community colleges and business has increased in our new knowledge economy.

Industry white and blue collar workers alike must repeatedly upgrade their skills to keep pace with changes and so must the tools for measuring outcomes and success (Slaughter and Rhoades, 2004). Community colleges must not only interact in our new economy as the nature of employment has transformed, but they must be proactive in understanding the economic trends globally as well as locally. In North Carolina, during the late 1980’s and early 1990’s, the community college system went from quantitative reporting, to a system of qualitative reviews of programs and services, then ultimately to a performance budgeting measurement platform. The changes in process and annual program outcomes measurement for North Carolina’s community colleges workforce had enabled them to respond quickly to new economic initiatives. In the instance of North Carolina, the “public interest in human capital was enhanced with the new efficiency, effectiveness and performance measures” (Gracie, 1998, p. 60).

While many community colleges believed that their responsibility was to education and not employment, more recently, there is a renewed look at coordination of policy between the U.S. Departments of Labor, Education and Commerce to synchronize

and endorse that community colleges are important for economic workforce development (Katsinas et al., 2012; The White House, 2012; O'Leary et al., 2004).

Conceptual Framework

The overall conceptual framework of this study is based on steps from Kirkpatrick's (2006) four levels of training. This framework works best for this study, as it offers a practical way to approach the research on the effectiveness of training practices for the employer and employee.

Kirkpatrick's Four Levels

One of the classic and heavily cited models for judging learning processes in literature which focuses on job training is Donald Kirkpatrick's Four Level Evaluation Model. Showing the impact of learning allows the client to know exactly how and if the learning process brings positive or negative results to their business. The four-level model proposes that training may be evaluated at four separate levels: a trainee's reaction, learning, behavior and results of the training progression:

1. Evaluating Trainees Reaction

   Collecting the trainee's perceptions of the quality and value of training.

2. Evaluating Trainees Learning

   Measuring if the trainee attained the skills or knowledge which the training was designed to do.

3. Evaluating Trainee Behavior

   Determining whether the trainees newly learned skills or knowledge has been applied on the job.

4. Evaluating Results of Training

Measuring the impact if any on trainee performance or productivity.

Kirkpatrick and Kirkpatrick (2006) summarized that there are three reasons for evaluating training programs. The first is that evaluation can show how to improve future programs. The second reason for evaluation is to decide whether a program should be sustained or let go. Thirdly, "evaluation can justify if the existence of the training department and its budget expenditures are necessary" (p. 19). This evaluation model augmented with the pre- and post-training procedures recommended in Chapter 5 will allow the community college and the business to measure results so that they can correct and learn from errors in training practices, prepare for the future and reward and sustain successful performances.

A major hurdle for business training programs is to know whether knowledge learned in training transfers to the trainee's behavior on the job. Even when the learning and training programs are in line with organizational needs, resistance to transfer to the work setting can occur, arising from various organizational factors such as lack of supervision, peer support, feedback systems openness to change, lack of resources and opportunity to use the acquired knowledge (Combs et al., 2009).

Conclusion

This literature review shares political backgrounds of government involvement in economic development, highlights community college workforce development missions, and ETP obligations and commitments while providing case studies of various training programs. The review discussed how programs have been successful through various program designs and practices. It ultimately shares literature gaps in terms of evaluations

of state-funded training from the perspective of specific business and training provider. This establishes the need for more current, thorough, and standardized evaluation practices, especially to secure and promote continued funding. The review concludes with Kirkpatrick's (2006) four levels of training evaluation as a framework. Lastly, it presents the importance of job training evaluation of state-funded programs with the needed study on how evaluation is effectively used in incumbent worker training programs to improve all-around productivity and continued success. The next chapter outlines the methodology used in this case study approach.

CHAPTER III: METHODS

Merriam (2009) states, “the case study has been proven particularly useful for studying educational innovations, evaluating programs, and informing policy” (p. 51). This research is a retrospective multiple case study of a 2011/2012 state-funded training program contract. The purpose of this study was to evaluate the quality and efficiency of ETP funded training programs at a community college in Southern California through a series of case studies. The training program evaluation used qualitative and quantitative mixed methods, which strengthen the study of a single program (Creswell, 2012), and included triangulation of data collection and analysis methods applied in this training program evaluation. This combination creates a better understanding of the problem and answers the research questions by merging, integrating and linking methods for a comprehensive evaluation. The research was conducted at a large suburban community college, with the pseudonym of Creek Side Community College (CSCC), within the economic workforce, job training division.

The job training division, which is the focus of this study, was created to provide high quality, customized, affordable, and convenient training to regional business partners. A portion of their services uses California State Employment Training Panel (ETP) funding to serve local businesses. Currently, the ETP program is funded by the Employment Training Tax paid by California employers and particularly targets firms threatened by out-of-state and international competition (State of California Employment Training Panel, 2012). The training division responded to specific business needs by providing training to incumbent workers in local businesses who faced global industry competition.

At the time of this study, the job training division's ETP training program had yet to undergo any evaluation beyond that of the state agency's monitoring of contract agreement requirements. ETP eligibility requirements did not include that the programs be specifically evaluated for quality and efficiency in their training practices. It is intended that students complete their training with newly acquired skills and positive expected outcomes. Subsequently, there was a need for the college to evaluate whether program outcomes were in line with program objectives. Doing so, would ensure current and future practices were adequate for sustainability and continuity for the success of the program. As a result, this study adds value to the efforts of CSCC and other institutions seeking expertise in their workforce training programs. This study may serve as a guide to inform college leadership and workforce staff of future training trends.

Research Questions

1. What was the company's purpose for the training and the specific business issue training addressed?
2. How was the training designed and by whom?
3. What was the quality of the training delivered?
4. Did trainees achieve the learning objectives?
5. Did trainees use what they learned in training on the job?
6. Did the training make a difference on trainee performance in their work (i.e., improve productivity)?
7. Did the training achieve its intended business goals?
8. Were there secondary effects on the company in terms of improved motivation, better relations between managers and workers and other organizational changes?

9. What can CSCC do to improve the delivery and overall process of the ETP training program?

This chapter describes methods of data collection and analysis used in this case study evaluation. Specifically, it addresses case study strategy and research design, research sample and data sources (i.e., business and specific training program), instruments and data collection analysis (i.e., documents, interviews, observations and surveys), ethical issues, limitations and the researcher's role.

The case study method approach is well suited to evaluating this type of training intervention as well as to answering management strategy and organizational inquiries (Gummerson, 1991). Case study analysis involves collecting, organizing and analyzing data in a detailed way at one specific site. Organizing evaluation data by individual cases allows for in-depth looks into the institution and business processes (Gummerson, 1991). This method is a particularly good process for this setting, as each ETP funded training program is tailored to the needs of a particular company and group of workers. There is no existing standardized intervention for evaluation of these training programs.

This study consisted of four separate case study evaluations, three of specific company sites and one of a consortium-training program. Typically, consortia programs provide training in generic skills-building such as project management and computer software applications. For this research, the consortium is a basic manufacturing skills building program consisting of two separate classes; Geometric Dimensioning and Tolerancing (GD&T) and Blueprint Reading. This type of training program can be applied to numerous industries. Each case study involved accumulating a case record of documents, interviews, observations and surveys, case record and writing a case study

narrative. The findings and analyses are presented in either a thematic or chronological format.

Both quantitative and qualitative information was gathered from a variety of resources. Due to their unique nature, the business-specific training programs of each case is presented individually. Through a retrospective approach, one can understand the training process and its impact from inception to completion and on to its after-effects. Because an appropriate benchmark for a more thorough analysis of an institutional program evaluation is when a span of time has elapsed (Ahlstrand, Bassi, & McMurrer, 2003; Moore et al., 2003; Phillips, 1997), this research noted events that occurred between the beginning of the ETP 2011/2012 contract with the college and the time of the analysis or the end of the study. Evaluating a completed contract can uncover processes which may no longer fulfill job training division's objectives, and assessing historical practices can pave the way for more suitable up-to-date forecasting of program needs. Given that sufficient data analysis cannot take place until enough events or outcomes have occurred, retrospective case study approaches may have implications for current as well as future practices.

Case Study Sites

This research consists of cases set in advanced manufacturing industries, such as aerospace, automotive, printing and health and medical devices. At the time of this study, these businesses received ETP funding streams to offset costs of training incumbent workers and of their business in California. These industries and training programs were indicative of the local area's current economic development and employment trends (AngelouEconomics, 2010).

Three of the case study training program evaluations took place at the individual business sites. There were 10 to 20 trainees per specific training program asked to participate in the survey evaluations. Each site provided one human resource manager, vice president of production, or a company president for an interview. Each business site provided multiple ETP training programs for their employees. Training, took place at the business site; most training was provided in a classroom and simulated lab setting at the same site. Participants took one or more training programs, and were surveyed for each training course completed, within the ETP 2011/2012 contract year.

Another training modality case study included in this research evaluation was a consortium in manufacturing skills training. This consortium consisted of 14 trainees from a varied pool of local businesses. Training was provided at the CSCC campus in a classroom/seminar setting. The consortium training evaluation consisted of five industry partners. There was an interview with three of the business administrators and training instructor of record. The administering of the questionnaire surveys of consortium trainees was assisted by CSCC staff. The instruments were hand delivered to the participating business sites and mailed back to the researcher. Although consortium training has not been demonstrated to be as effective (Moore, 2002), the college administrator in charge provided feedback to reexamine the efficiency and effectiveness of this type of program.

The research case study consisted of individuals and businesses participating in the workforce training program provided by CSCC for 2011/2012 ETP contract. The eligibility criterion was that participants were trainees or manager supervisor of the business in the ETP contract for the 2011/2012 contract period, and selection of

participants was based on the college administrator's objectives to encapsulate and understand the outcomes in training on specific target industry training programs. Also included in the administration's selection was the researcher's accessibility to gain admittance to the site, and willingness of participants and potential for capturing participants' varied insights. Just as supervisors making training decisions first look at immediate impacts of disrupting an employees' production routine, often, administrators selecting sites to evaluate look first at the immediate disruption of a business's schedule rather than longer term effects of evaluation (Ahlstrand et al., 2003).

Research Design

Mixed Methods

The research design is a mixed-methods approach, as outlined in Table 1. Data were collected and analyzed from the following sources: documents from the job training division program office including program applications, contracts from both ETP and business in addition to trainee evaluation summaries of the training instructors; semi-structured interviews of the company managers/supervisors; researcher site observations; and trainee participants' evaluation survey questionnaires.

Table 1

Overview of Mixed –Methods Case Study

	Research Questions	Document Analysis	Survey	Interview Observation
1	What was the company's purpose for the training and the specific issue training addressed?	✓		✓
2	How was the training designed (i.e., process and design roles)?	✓		✓
3	What was the quality of the training delivered?	✓	✓	✓
4	Did trainees achieve the learning objectives?		✓	✓
5	Did trainees use what they learned on the job?		✓	✓
6	Did the training make a difference on trainee performance in their work? (i.e., improve productivity, trainee job quality)		✓	✓
7	Did the training achieve its intended business goals?	✓		✓
8	Were there secondary effects on the company in terms of improved motivation, better relations between managers and workers and other organizational changes?	✓	✓	✓
9	What can CSCC do to improve the delivery and overall process of the ETP training program?	✓	✓	✓

The first phase of the research was qualitative: document analysis, followed by interviews and observations and then a quantifiable analysis created from trainee participant survey responses. Listed below are data collection activities for each business site and the consortium-training:

<u>Business Site</u>

1. Document analysis
2. Interview with supervisor/manager
3. Site observation of production process where trainees work and training facility
4. Evaluation surveys of trainees administered at the site

Consortium

1. Document analysis
2. Interview with supervisor/manager/president –site visit interview
3. Observation of college training facility/classroom/lab
4. Evaluation surveys of trainees- Instruments were left at site with manager and returned to researcher through U.S. mail

Qualitative

Qualitative data were used to describe, categorize, label and identify qualities of the training program phenomena (Nishishiba, Jones, & Kraner, 2014). Three types of qualitative data were included in this study: primary data collected by the researcher from semi-structured face-to-face interviews and observations and secondary data from documents. Publicly recorded secondary data from the ETP and college was collected or composed for review purposes such as training program proposals, agreements, criteria, and processes from the internet. Additional documents from the college, such as instructor summaries, were procured after the institutional review board (IRB) approval from both CSCC and the researcher's home campus.

Document Analysis. Document review began with the contract and project files at the college. Program and marketing materials were reviewed closely to obtain useful background and contextual information about the CSCC program, instructors and staff. The researcher sought historical as well as current objectives through a review of mission and vision statements. Documents reviewed include the ETP proposal and ETP contract for 2011/2012 along with prior agreements, a business training contract, curriculum, a summary of instructor evaluation, a blank agreement for instruction or services, classes

offered, an employee trainee program application, a class offering agreement, a proposed training schedule and website navigation information from ETP, CSCC and the business. Program data were obtained through archival databases provided by the college along with instructor evaluation summaries.

Interviews. Participating businesses and training programs were selected by the college's Program Director. In order to obtain the narrative feedback, the campus provided the initial introduction of the business manager and supervisors to be interviewed. These experts had valuable knowledge of the trainees, programs designed, utilization and impact of training. These semi-structured questionnaire interviews collected include manager or supervisor perspectives incorporating Kirkpatrick's (2006) four levels of impact. Interviews took place at the individual business site, or when the situation called for it, at an off-site location. The interview consisted of 21 semi-structured questions with each business administrator (Appendix A) which were correlated to prior knowledge of the ETP program, business contract with CSCC, program design, program efficiency, satisfaction and future expectations of the training program.

Observations

Observations of the facility where the employee/trainees work and were trained took place at each specific business site after the interview process. The consortium group classroom/lab training facility observation was provided at the college campus. In this case, a walk through and an observation of a current training session was warranted. There was also an interview at three of the consortium sites with either a president, vice

president of production or human resource manager, along with an opportunity to observe the various consortium businesses that have had their employees trained at CSCC.

Quantitative

The use of quantitative methods, by attaching numbers to information, indicates the "degree or extent to which certain characteristics are present" (Alkin, 2011, p. 95). This program evaluation sought to measure what results came out of the training program through the eyes of the trainee. To answer training evaluation questions three through nine in detail as outlined in Table 1, the study incorporated quantitative methods of analysis. In order to gauge the effectiveness of training, this research used survey instrument (Appendix B) data collected from the trainees. The survey instrument, based on a trainee evaluation questionnaire and the research of Moore et al. (2003) in an earlier study of ETP contract evaluation, was slightly modified by the researcher. This survey evaluation instrument was distributed by to trainees at the business site. Consortium training trainee surveys were distributed to site administrators and returned individually through US mail in a stamped, self-addressed envelope.

An advantage of a quantifiable survey is that, in many ways, numbers are easier to understand and grasp. Numbers help to conceptualize value, size, and degrees of effectiveness. Data collected in this portion of research was related to skill attainment, knowledge gained, attitudes, values and ability. The data collection involved a pencil and paper performance test to measure reaction to learning, skill acquisition, job application and business impact.

Evaluation Surveys. Surveys were tied to Donald Kirkpatrick's (2006) four levels of evaluation of training programs; whether trainees liked the training, whether

they learned from the training, whether they used what they learned in training, and whether the training made a difference in the workplace. Kirkpatrick's concept is quite important, as it allows for planning, evaluating and troubleshooting tool. While there are many instruments designed to determine whether knowledge was acquired in training, or skill was learned, Kirkpatrick's evaluation technique goes further in articulating the measurement outcomes for training (Ahlstrand et al., 2003; Moore et al., 2003; Phillips, 1997). Kirkpatrick's model provides an approach to training evaluation by focusing on trainee reaction, learning, behavior and results (Kirkpatrick & Kirkpatrick, 2006):

- Reaction - Seeking trainee's perceptions of the value and quality of the training.
- Learning - Assessing if the skills, knowledge or behaviors trainee taught was understood.
- Behavior - Determining if the new skills, knowledge or behaviors were used on the job.
- Results - Measure what impact on trainee's performance the training imparted.

The following questions adapted from Kirkpatrick's model were integrated in the trainee survey instruments: How well did the learners like the learning process, what did they learn, what changes in job performance resulted from the learning process, and what are the tangible results of the learning process in terms of reduced cost, improved quality and increased production efficiency? A participant's survey reaction identified feedback to clarify possible modifications to training delivery process; effective learning outcomes;

ease of examining job performance; whether, in fact, what was learned in training was used on-the-job; and production impact.

Table 2

Overview of Training Programs and Industry

	Site A Aerospace	Site B Print	Site C Aerospace	Site D Consortium
Blue Print Reading #1	✓		✓	
Shop Math	✓			
GD&T	✓			✓
Inspection Techniques	✓			✓
Hydraulics			✓	
Leadership Skills Business Writing			✓	
Professional Development			✓	
Value Stream Mapping		✓		
Lean Time Studies and Production Leveling		✓		

Training Programs

Table 3 shows a brief description of the individual training program and the subjects covered. These subjects were selected with the businesses management or human resource team, college program director, and instructor.

Table 3

Training Program Objectives

	Learning Objective
Blue Print Reading	Participants will be able to perform basic shop math essential in determining manufacturing dimensions.
Shop Math	Participants will focus on fundamental concepts of arithmetic, algebra, geometry and trigonometry.
Geometric Dimensioning and Tolerance (GD&T)	Participants will become familiar with the interpretation of geometric dimensioning and tolerancing symbols.
Inspection Techniques	Participants will better communicate with customers and coworkers to improve quality. Focus is placed on understanding and improving the accuracy of calipers, micrometers and other measuring tools.
Hydraulics	Introduction to hydraulics
Leadership Skills: Business Writing	Students will learn the fundamentals of writing emails, concise letters, detailed reports, and performance evaluations. Course focus is on organizing thoughts for greater reader comprehension and using grammatically correct sentences to reach the reader.
Professional Development	Designed to help employees develop critical abilities including the skill sets needed to develop others, build trust in a team and solve problems.
Value Stream Mapping	Participants will become familiar with Lean Manufacturing concepts and waste reduction. (This particular Lean Manufacturing program is focused on Value Stream Mapping at the request of the business; therefore it is considered a customized training program).
Lean Time Studies & Production Leveling	To familiarize employees of company with Lean Manufacturing concepts and waste reduction. Focus will be on 5S and setup reduction.

Research Sample and Data Sources

Table 4 represents the sites, industries, training programs and number of trainees who participated in the 2011/2012 ETP contract at the community college.

Table 4

Overview of Research Sample and Data Sources

Site	Industry	Number of Training Programs	Training Programs[1]	Respondents
A	Aerospace	4	Print Reading	16
			Shop Math	16
			GD&T	16
			Inspection	16
B	Printing	2	Value Stream Mapping	6
			Lean Time Studies & Production Leveling	6
C	Aerospace	4	Blueprint Reading	16
			Hydraulics	9
			Business Writing	7
			Professional Development	7
D	Consortium	1	GD&T	6
		1	Inspection Techniques	6

[1] Details for each training program can be found in Chapter 4.

Instruments and Data Collection Analysis

This mixed-methods approach allows for progress toward the study's goal of defining and establishing results and recommendations with more certainty (Creswell, 2012). Data sources include document analysis, interview transcriptions, site observation summaries and responses from trainee surveys.

The evaluation protocols are listed in detail below:

1. Case Study Profile- Document Analysis
    a. Business description
    b. Goals of training
    c. Trainees
    d. Training topic/s, hours, instructors
    e. Program success in terms of completion or dropouts

2. Interview Supervisors/Managers
    a. Interview those responsible or who were involved with the training using semi-structured questions for their views as related to Kirkpatrick's evaluation model.
3. Observation
    a. Site observation walkthrough of training and production areas.
4. Survey Trainees
    a. Structured evaluation survey to be distributed at the site by the researcher. In the case of the consortium, distribution and collection of the surveys consisted of dropping off packets to individual business sites for circulation to trainees. Packets included a return stamped, self-addressed envelope to the researcher. The survey follows Kirkpatrick's four levels of training evaluation.

Document analysis is significant for the historical and current practices of the job training program. College contracts with ETP and a participating business provide credibility and evidence of accuracy and authenticity. Other documents offer descriptions of training, records of hours in training, instructor evaluation feedback and completion rates. The researcher rigorously reviewed these and took notes to provide a chronicled account of the program processes.

The semi-structured face-to-face interview with the business administrators each took approximately 45 minutes. The purpose of the interview was addressed before the interview protocols and consent form were presented. Open-ended questions were formatted to prompt descriptions of the college's training program associated with the

objectives, outcomes, behaviors and results of the processes. Follow-up questions were asked to further prompt answers from interviewers who, at first, may have given nondescript or brief answers to one or more of the questions. In closing the interview, appreciation for the time of the interviewee was verbalized and contact information was provided along with a brief description of the next steps in the study. The use of a Philips Voice Tracer digital recorder assisted in recording, writing and storing the notes and interview, and verbatim interview transcriptions were made from audio taping. Notes were written concurrently. The researcher was responsible for reflective journaling immediately after the interview. To ensure interview data could be sorted in categories and themes for a thorough insightful analysis, the researcher looked for quotes and key terms to help in describing questionable or difficult information.

The observation was approximately 45 minutes long and took place after the semi-structured interview. The site observation protocol was a record of date, time and place. It included a description of activities happening in the setting and a reflection of the themes and the researcher's personal insights noted during the observation. The training facility and production areas where the employee/trainees work and were trained were observed. Descriptive field notes of the setting included sights, sounds, and smells. Finally, the researcher composed a qualitative research narrative of the facility, combining data observation collection with note taking analysis (Creswell, 2012).

Trainee surveys (Appendix B) were administered by the researcher at the site. The purpose of the survey was addressed and was followed by distribution of the survey protocols and passive consent forms. No signatures were required. Participants were informed that, by taking the survey, they agreed to participate. Trainees were asked to

complete the survey by placing a check mark in one of four columns for each item. Twenty survey items were grouped in 4 subjects and were accompanied by one suggestion box for each grouping. The responses were formatted and a weighted score was ranked for each item. IBM SPSS statistical software was the analysis measurement tool.

Ethical Issues

Ethical issues associated with this study include how the rights of participants were protected with reference to conventions of research ethics and the institutional research board processes at California State University, Northridge and at CSCC. To ensure the protection of participants' identities, pseudonyms were used for the College and business sites. Interview and survey participants' names or identifying characteristics were not used in the collection or reporting of findings. Participation in this study was voluntary, and participants were able to leave or withdraw at any time, for any reason, without any consequences. Survey participants received a passive consent form, requiring no signature, stating that their opinions were completely confidential. This simplified questionnaire was given to participant trainees' for opinions following and regarding their training periods. No identifiable information was shared with trainees' employers, except for a results summary analysis of the particular training program.

Limitations and Delimitations

Retrospective study has various limitations. The memory of participants, especially in cases of multiple training programs, can be faulty. Following a specified time, recollection of specific programs, instructors, and outcomes may be difficult to

remember. If everyone who began training did not complete the training sample, it may not be sufficient. Document analysis through websites that may have experienced changes, updates, and modifications since the onset of the contract is also a limitation.

In retrospective cohort studies, researchers have a greater opportunity to standardize the study conditions and manipulate or observe the outcome than through other methods, which reduces the benefit of randomization and can increase bias. However, this is favorable for this type of study, as retrospective cohort studies are less prone to bias than are standard current cohort studies. Generalization from "limited number of cases, in addition to review of historical and future analysis" on the business and college dynamics is problematic (Gummerson, 1991, p. 74). In addition, survey errors may have occurred and a non-response bias is possible. The study was delimited to four separate case studies. There is difficulty in comparing group cases as most are industry and business specific. Additionally, results may not be applicable to all four sites as training needs and business cultures vary.

Researcher's Role

The researcher used multiple data sources and methodological triangulation (i.e., a mix of quantitative and qualitative methods) in an effort to strengthen the study of the program evaluation (Creswell, 2012). A narrative presented in the fourth chapter summarizes findings from each case and includes the analysis of documentation, semi-structured interviews and quantifiable survey data. Considering both the research study subject and this researcher's approach, bias is thereby reduced. The research design and guidance from the dissertation chair provided a clear understanding of utilizing document

analysis, questionnaires, graphs and interviews prepared and delivered in a timely manner.

The role of this research and its findings in this particular subject is very dear to me. I was raised in a family who owned and operated a small factory setting near a high school and who employed several workers. I spent afternoons at our shop helping and listening to my parents teaching and working with clients and employees. Learning about ethical conduct, interactions in the workplace with customers and suppliers, and hiring of new employees were all a meaningful part of my education. Watching both parents taught me so many things I cannot enumerate, but, most of all, I was taught how to listen to clients' and employees needs and wants.

In retrospect, I watched my father work alongside all the workers and oversee this business he cared for, often not taking enough care in business production outcomes in terms of scrap and waste inefficiency. Interaction between most of the employees and their employer created positive outlooks and rewards for both.

Eventually, a sibling relocated to California and continued the family business, manufacturing window treatments in Los Angeles, where I worked intermittently while continuing my education until the business was sold to a large concern. As a researcher, I approached this study eager to identify best practices and evaluation tools for job training programs. I came to this study with my background as business owner, educational administrative analyst, and as a doctoral student in educational administration.

In summary, this chapter described components and protocols for this case study methodology. It presents procedures for collection of qualitative and quantitative data

and the data analysis processes. Ethical issues, limitations, and role of the researcher were also acknowledged. The following chapter presents the case study research results.

CHAPTER IV: RESULTS

The purpose of this study was to evaluate the effectiveness of CSCC's job training program from an ETP 2011/2012 contract consisting of three industry sites and one consortium subcontract program involving two manufacturing skills training sessions, provided at the college and consisting of various businesses in Southern California. To accomplish this purpose, CSCC's job training program was examined from multiple perspectives through a method known to evaluators as triangulation. The following case study evaluation design used in-depth qualitative measures and quantitative survey measures to complete the analysis. The key findings are categorized into two areas: impact and perception of training on trainees and impact and perception of training on companies. This chapter presents results obtained from data collected through interviews, observations, evaluation questionnaires and document analysis to answer the research questions:

1. What was the company's purpose for the training and the specific business issue training addressed?
2. How was the training designed and by whom?
3. What was the quality of the training delivered?
4. Did trainees achieve the established learning objectives?
5. Did trainees use what they learned in training while on the job?
6. Did the training make a difference on trainee performance in their work (i.e., improve productivity)?
7. Did the training achieve its intended business goals?

8. Were there secondary effects on the company in terms of improved motivation, better relations between managers and workers, and/or other organizational changes?
9. What can CSCC do to improve the delivery and overall process of the ETP training program?

Due to concerns regarding confidentiality, the real names of the companies were not used. Rather they are referred to as Site A, Site B, Site C, and Site D. For the same purpose, any descriptive information that would make the sites identifiable was omitted. Only the information that is relevant to the analysis was included. Each site is presented individually in this chapter. For each industry site, the results are presented through the conceptual framework of Donald Kirkpatrick's (2006) training model evaluation. This model assists in detailing the data by focusing on trainee reaction to learning, what they may or may not have learned, trainee use of knowledge or skills learned, and impact on productivity. This allows for a comprehensive presentation of all the results on factors that influenced the effectiveness of the job training program at CSCC.

Site A Business Description Profile

Founded over 40 years ago, this precision metal fabrication family business employs 200 people. Over 180,000 square feet of manufacturing space allows for a range of services which include sheet metal fabrication, CNC forming, laser and water jet cutting, machining lathe and turning centers, tube bending, flaring and beading, three types of atmosphere welding, assembly, critical application swaging, riveting and hardware installation and kitting, heat treating, platting and painting. Employees build

and assemble parts for spacecraft, commercial and military aircraft, defense and homeland security systems and a variety of commercial applications.

A walk-through of the facility and viewing of production and training areas provide a better understanding of the business and its culture. Upon entering Site A, one encounters a vast, open and classically styled, dark marble floor reception area. A wall-to-wall mural behind the reception desk shares an enlarged photograph of a space shuttle in flight with signatures adorning the bottom left hand portion. One wonders whether Site A provided parts to the space shuttle missions. On the right-hand wall, above the plush seating area, are pictures of other spacecraft capsules and various airline memorabilia alongside a tall, four to five-foot, bronze statue of a soaring eagle. After about five minutes, a jovial gentleman, possibly in his early sixties, appeared and guided someone out of the building. He stopped to chat with me, sharing that he had just returned to work after some time off from surgery and was incredibly happy to be back. Tom (pseudonym) the production controller, whom I was here to interview, approached. He looked to be in his mid-thirties, clean cut, and wore a black polo shirt, emblazoned with the company logo, and slacks. The two men patted each other on the shoulders in a "good old boy way" as friendly colleagues do, and made introductions. Then, Tom and I walked back through the doorway he had come from. My tour began with a walk down an expansive, long open corridor which revealed a raised conference room adjacent to the walkway. We took a few steps up and we were standing by a wooden oblong conference table, large enough for 60 to 80 people, with high back upholstered rolling chairs. Adorning the oversized buffet console on the side of the conference table were leather wing chairs. The windows were covered with vertical blinds and damask drapery side

panels. For me, it alluded to opulence and wealth, yet the casualness and pleasant demeanor of Tom made it comfortable and inviting.

The facility itself is still in the process of being refurbished from the building's previous use as a printing plant. After an interview with the Production Controller Tom, we walked by a large glass windowed area where the printing press was previously located. One can feel and imagine the energy, sounds and smells of a time gone by, when newspapers were our link to the world. Going forward, past swinging doors, we continued to a balcony overlooking the entire manufacturing plant floor. The enormity of it all is thrilling as one looks down upon machinery and work stations, seeing and hearing industry at work; grinding, blazing, pounding, screeching while also sensing metal and coolness in the air. Throughout it all, there are people running machines, assembling parts, checking paperwork and charts, sweeping the floor while fully engaged in what they are doing. Through the walk-about, Tom shared that they use state-of-the-art tracking systems which provide real time job status of current projects.

We continued towards an open metal stairway to the production floor. Approaching us was a young boy who appeared to be about 10 years old. He was holding a model helicopter in his hands and was eager to ask Tom if he had the battery charger for it. Tom directed the young man towards the offices and instructed him as to where he could find the charger. A family business, this was in fact, one of the owner's grandchildren, one of many, as I understood, and, later on, I saw other children in the upstairs office areas. Heading downstairs, I observed a three dimensional copy machine, also called a 3D printer, which creates prototypes of actual products in action along with the laser and water jet cutting machine production and inspection areas.

Tom also showed me one of the moving products designed through hydrostatic extrusion processing. Just outside the inspection area was a rack of very large titanium circular tubes which were de-icers for an airplanes jet engine. Towards the end of the production floor tour, we walked to the employee's break and lunch room where the surveys were distributed to the employees. There were twenty lunch tables with seating for approximately 70, vending machines against the walls, refrigerators and silver utility appliances including microwaves, sink area, trash and recycle bins discreetly displayed under counter spaces. The environment was modern contemporary with ivory tiled floors and tan painted walls; everything was sanitary yet appealing. The tour and observation of the facility provided a clearer understanding of the scope of the business and the purpose for the incumbent worker training sought out by Site A and provided by CSCC.

1. *What was the Company's Purpose for the Training and the Specific Business Issue Training Addressed?*

CSCC's contract documentation, Exhibit A-1 to Agreement for Instruction or Services, indicates the training goals operationally: Print Reading & Shop Math; Geometric Dimensioning & Tolerancing; Inspection Techniques, and the course description states "A series of courses designed to teach…. employees' fundamental manufacturing skills". It appears the goal of the training and the specific business issue which the training addressed was introductory basic metal working skills training for incumbent employees. According to other college documentation program descriptions, those who should attend these fundamental manufacturing skills training programs include inspectors, machinists, technicians, assemblers, and others involved in product quality and inspection. These programs are intended to improve communications with

customers and coworkers. The proposed training schedule cites "Print Reading and Shop Math: 16 sessions, 48 hours, GD&T: 8 sessions, 24 hours, and Inspection Techniques: 8 sessions, 24 hours" with class hours and dates: all sessions provided at 4:30PM to 7:30PM, on various Tuesdays, Wednesdays, Thursdays.

The college contract documentation defines the training program's delivery as classroom training. Though there is some type of simulated laboratory training delivered, the class does provide limited hands on instruction and observation of the assembly process on the production floor. However, according to ETP and the college program director, class/lab training is billable at the same rate; eighteen dollars per trainee or twenty-six dollars for advanced manufacturing, both of these are hourly rates. The documentation does not provide a clear description of the company's purpose for the training or its specific instructional objectives. There were also no curricula or syllabi available.

Subsequently, the production manager clearly stated the reason for this semi-tailored training program was the fact that the company went through a rapid growth period in a very short amount of time. Tom also specified there was a need to "provide introductory understanding of basic metal working skills through training for a large influx of new employees". Within a six-month span, they had hired about 40 new employees. Tom expressed, "as the newly hired employees had little or no prior knowledge of the sheet metal industry [and] also did not have a lot of experience in any metal manufacturing, they required some basic essential skills and we wanted to supply them". For this initial contract with CSCC, Tom stated that mainly, "Hiring so many in one division, 16 or 20 individuals, it was almost a burden for the company to train

without that kind of program". They needed to focus their emphasis on work, to continue and to just concentrate on manufacturing "We couldn't train everybody in-house. The management knew we needed outside training," that is why they reached out to CSCC. Management at Site A had been looking to provide a better understanding of the whys and hows of manufacturing processes for their employees. They were looking for a generic training that could be partially customized for company specific work flow. The training was not customized much, but, as shared by the instructor, "they utilized the company's blueprints in about 60% of the classroom training and all of the company [actual] tools while on the production floor."

Training is part of the company's strategy, and, in the past, they have gone through cycles of training and not training. Typically, on the first Friday of the month, they have material handling and safety procedures training. Additionally, Site A provides informal on-the-job training, not associated with any industry group "a type of apprenticeship program through which the newly hired are paired up with a lead, or somebody on the production floor who has more experience." Tom continued, "We pair them off with other senior mechanics, usually a senior mechanics workload is one to eight, and we have inspectors and supervisors who are always there on the floor if any questions arise".

Management at Site A had been looking to provide a better understanding of the whys and hows of manufacturing processes for their employees. Currently, they have transitioned to more documented and certificated training such as sending employees to school for specific tasks and hiring on-site trainers, as in ETP. The training contracted

has been basic skills for newer employees and a “refresh of the skill sets” for those working longer with the company.

The C.E.O.’s attitude towards training is very positive. In our interview, Tom stated:

> She knows the benefits that we get to reap as a company when you do invest in an employee and take the time to train them. With that being said, she does understand the costs that do go along with that by [providing the] training. It is expensive, and so, the nice thing about that is she is willing to invest in the employees for the company. At the same time, that’s usually why we end up keeping most of our employees: [we] continue to train them.
>
> I know her attitude is nobody’s ever going to learn everything. There’s always going to be something to learn. If you’re not coming to work and learning something new every day, you are not challenging yourself. That’s her mentality toward training.

During the walk-about of the facility, Tom shared that the machinery on the production room floor did come with training provided by the companies from which they were acquired. These types of training opportunities were both free of charge and not, dependent upon the additional training service provisions and company needs. Sometimes, Site A was provided a trainer on-site, but, mostly, training was made available at the site of the machine manufacturer company. It was more costly to send employees to other locations, specifically the out of state equipment training programs. Tom made a point that “Site A had chosen CSCC for the convenience” and expressed

that he was "not certain of other programs that were offered at the college level, either junior college or four year."

2. How was the Training Designed and by Whom?

Tom was the liaison from the CEO and the General Manager to the CSCC Training Program Director and instructor. He was involved from start to completion of the training term, although Tom was sure to mention that he was not the party whose signature was on the contract. Carlos De La Fuente [pseudonym] was the instructor during this training contract. According to Carlos, after visiting Site A and investigating the needs with Tom, he was able to choose and design a program to fit the needs of the business. The employer chose some topics they were familiar with, but had no direct input in the design. The training used materials and examples which trainees brought to class, yet the basics were not customized. Required textbooks for the classes were provided by the college, along with a writing notebook, folder and exercise worksheets. These were included in the cost of the courses, and were distributed by the instructor at the first training session.

Along with receiving his MBA, Carlos shared during our interview that he has worked in numerous levels of manufacturing from the production floor to supervisory roles such as machinist, manufacturing and design engineer as well as a having been an engineering manager. Carlos is Latino and appears to be in his early forties. He is well-spoken and very enthusiastic about CSCC's training program. He is dedicated to making certain that the business culture and its needs are examined while in the initial stages of training development decisions. He conducts site visits, mostly with CSCC's job training division, program director James, and after gathering the business objectives, he provides

feedback to assist the program director in design aspects of the training contract. James, along with the staff at CSCC, takes care of the contracting process. When talking about the management and office staff at CSCC, it appears that Carlos is part of the team. Carlos becomes animated when talking about teaching workers skill sets in various manufacturing disciplines. When questioning Carlos about his role in helping the businesses understand their part in the training process, he shared that since he had been working with CSCC since 2006, and:

> Usually, a couple of things happen, as there are several companies that have worked with him in the past, they request that he does the training. On other occasions if it was a new business we've never worked with, I would go with the CSCC Director and meet the clients.

As for prior relationship with CSCC, in the past, Site A has sent new and incumbent workers to the college campus for ETP consortium training for various types of training. This is the first program Site A is collaborating through the college which involves onsite training for their incumbent employees. For this 2011/2012 contract Tom expressed:

> The drafting portion was very quick. The CSCC Director, James, was very supportive in everything that he did. On CSCC's side, I never wait for anything with them. With ETP, even when sending a handful of employees, one and twosies, they're always giving me the forms on time, submitting them. They will help me through. They're very helpful in that regard to everything. This contract itself did not take very long to draft. I do know, if I remember correctly, they hold either quarterly or monthly meetings at CSCC. The contract would have to

> be approved at that meeting. So, there was kind of a deadline there, but we managed always to get them in on time and there was never any problem.

When questioned about how the company came to know about CSCC ETP training programs, the production controller replied:

> I actually was an individual that participated in an ETP-funded programing back around 2010. So, I was a student and actually took some of their core principles for manufacturing courses. I myself did the blueprint reading, GD&T classes, shop math, and, from there, saw the benefit just taking that. I was working as an inspector here at the time. I took the classes on the college site at the time. I didn't actually seek them out myself. It was a supervisor at the time who shared that there are some classes being offered at CSCC. I registered for the class and took it. They generate an email populated list. They get your email information and they ask if you would be interested in hearing other classes [they] have to offer, which was nice because, eventually, I kind of climbed my way up here, and now I'm part of production control management. I deal with a lot of the new employees. So it's nice getting those emails, every month or two, and see what they are offering. During that time period, we would have maybe one or two hires every three months or so, so that was kind of perfect. We weren't a very large size yet, so that benefited our needs, just being able to send the employees when we needed to train them.

Site A received on-site classroom training in Blue Print Reading, Shop Math, Geometric Design and Tolerancing (GD&T), and Inspection. This training program was provided for their second shift employees. The course consisted of 32 training sessions

for a total of 96 hours, as seen in Table 5. The training had a scheduled start date of August 8, 2012, through completion on December 6, 2012. Each class session was scheduled for 3 hours, meeting two days a week, beginning at 4:00pm. All training for employees was provided for on the clock. All employees training time was included in their regular compensation.

Table 5

Site A Training Schedule

	Sessions	Hours
Print Reading & Shop Math	16	48
GD&T	8	24
Inspection	8	24

One instructor was assigned to teach all the coursework for this training session. This particular instructor was requested by the management, as they were knew his teaching style and were confident that they would be able to better tailor a training program to meet their needs using this instructor. Management also modified their employee work schedules so they could be certain to secure this instructor. Tom stated:

> We found a lot of success with one of the teachers. I took his courses, and I really thought all of our employees [would] benefit from him. His teaching style, he can really just explain it to almost to anybody, and everybody can grasp and understand the concepts. Our training actually was heavily based around him. Probably the hardest part of the design was waiting for his schedule and that wasn't anything on CSCC's part. It was me requesting him as the teacher. It was worth the wait and we had worked it into his schedule.

Tom continued with the design aspect and shared that "the materials were already in place from the four classes that they offered." Using an existing un-customized yet

basic fundamental curriculum from the college the instructor was also able to use blueprints and tools, such as calipers, from the business site. The training was tailored to one larger 96-hour course that covered all four of the training topics. There were both classroom time and production floor sessions. The amount of class hours versus production floor provided in the ETP documentation have not been specifically described. This particular training program was adjusted towards Site A's needs because it was offered at their facility. In particular, the production manager felt they received a lot of benefit from inspection techniques. For example, he shared:

> You don't necessarily get to do inspection in a classroom setting. You're not actually holding calipers or you don't have height gauges or surface plates. In a classroom setting, you know you might have one caliper or two. Here on site, the trainer and trainees, they [are] able to grab parts if they wanted to off the shop floor. The teacher had all the tools. He and you were able to set up a part… oh let's check it this way because you're looking to establish this data or you know, you need to get this dimension and this how you check it. This is the proper way.

Tom expressed the difference made by taking a class off site:

> When I had taken the class at CSCC, that was one of the downsides… Now, having parts which you can actually physically measure instead of explaining a theory and not having a visual is a better learning environment.

Site A provided training at the facility during the evening concurrently with their night shift Tom expressed:

> The trainees were able to use any equipment, which was pretty nice. Some of the training was facilitated on the production floor. I think the instructor appreciated

> that, too, and he was given free reign of that. They were able to demo and practice on machines right there. Also, employees, if they were having an issue with a part during the week at any time, they would be able to make a copy of the print, and save it for the training.

3. What was the Quality of the Training Delivered?

While supervisors and management had never participated in training as instructors or trainees, Tom and the others did observe them. Tom stated, "Supervisors are involved in training. When we host training events ourselves as a company, it's usually supervisors assigned to teach. Pedro, the shop foreman, gets involved a lot in training. So yes, we do have managers that do".

Tom also added, for example, that:

> For this particular training, I've stopped in a handful of classes, one or two times, and 10 to 15 minutes, not anything extensive. I observed everybody was always engaged. They were very engaged. They were actively having interaction with the teacher constantly. Because the way he does present the material, makes them feel comfortable and wants them to ask questions. And every time I went in there, he's had a good environment, it's a good conducive environment for learning. I know the General Manager, John Sabastian [pseudonym], he popped in, too, every once in a while, to kind of see what was going on. But for this program no, we left it up to the instructor.

The training program's success in terms of completion or dropouts was evident as all 16 trainees who began and completed the program were still employed with the company at the time of this research.

There were 16 employees enrolled in the training, 14 initially completed the survey questionnaire, one employee was absent, and one was working at another location. The researcher subsequently left two additional packets of the survey questionnaires and retrieved them completed within five days. It appeared that the majority of the employees were of Latino descent, 25 to 45 years of age and all participants were male. Those who took the survey seemed genuinely pleased to take the time off the production floor and participate in the survey.

The survey results follow Kirkpatrick's first level of training evaluation: reaction. The quantitative survey questionnaire results pertaining to the employee's reaction of the quality of training are shown in Table 6 in percentages.

Table 6

Site A: Trainee Evaluation of Reaction to Training

	Poor %	Fair %	Good %	Excellent %
Clear Objectives	0	12.5	25	62.5
Usefulness of Topics	6.3	0	31.3	62.5
Length of Time on Topics	6.3	6.3	62.5	25
Quality of Instructional Materials	0	18.8	12.5	68.8
Degree Training was Customized to Company	0	6.3	37.5	56.3
Quality of Instructor	6.3	0	12.5	81.3
Effectiveness of On-Site Training	6.3	0	50	43.8
Ability of Instructor to Interest and Motivate	0	6.3	18.8	75
Degree to which the Training was the Right Level	6.3	6.3	37.5	50
Quality of Training Overall	0	12.5	18.8	68.8

Note. N = 16 respondents of 16 trainees

Overall, looking at the reaction portion of the training participation, the trainees overwhelmingly held positive views. This is evident in the 62.5% excellent rating in clear objectives and usefulness of topics, 68.8% excellent in quality of instructional

materials and training overall, 75% excellent rating of ability of instructor to interest and motivate and 81.3% excellent rating of quality instructor. However they did present one particular reservation of the training, the length of time spent on topics. For example, the quality of the instructor was presented as 81.3% excellent compared to the length of time spent on the topics which received a 25% excellent rating. Clearly the instructor was well liked, yet the time with which the instructor spent on each of the topics was less satisfactory, which may be due to the varying skills levels of each of the trainees. The instructor also received a 75% excellent rating on ability to hold interest and motivate and a 68.8% excellent rating on instructional materials.

Participant survey open-ended questionnaire responses regarding interaction with the instructor provided comments such as, “I really enjoyed the teachers methods of teaching, I was able to ask and understand for a topic I thought was the most difficult”, “Interaction and communication between the instructor and environment was good” “I went in hardly knowing anything and the instructor really found a way to teach us”.

Something else of interest is that results show 56.3% excellent on the degree the training was customized, yet there was no true customization provided, just utilization of companies materials such as blue prints and tools. Another trainee survey comment stated “The relaxed familiar environment made it easier to learn and focus. Having access to tools and blueprints we use every day to learn from was a great help to understanding”.

In turn, Tom’s response to how he thought the trainees rated the training was positive. He believed the trainees would rate the training fairly high, “mainly because it applies to what they do every day.” Although he did express that the pace of which some

individuals learn varies, and that going forward they may split the training into groups more in line with the trainee's competences, such as advanced and basic skills.

4. Did Trainees Achieve the Learning Objectives?

When I asked Tom whether the employees learned the intended basic fundamental skills for each type of training he responded:

> Yes, they learned the intended skills. Wouldn't consider them mastering the intended skills by any means... in this industry, metal working, blueprints, everything we deal with daily is a very technical industry. There is a plethora of information to learn. You can just be bombarded and it's thrown at you, which makes it tough. They haven't mastered it, but the training did make them sharper to grasp other concepts, almost building blocks. So, it did its intention, I didn't expect them to be masters out of this class either.

The participant survey results shown in Table 7 follow Kirkpatrick's second level of training evaluation: the learning component. The quantitative survey questionnaire results show whether the trainees felt they learned the skills and knowledge the training delivered. Interestingly, the participants felt, as Tom did, that they did not master everything. Largely 62.5% of trainees reported they learned everything of the content taught in Print Reading and another 25% said they learned most of the content. Also, the same 62.5% felt they learned everything of the content in Print Reading and in GD&T training only 18.8% felt they learned everything. This is of interest as the Print Reading and Shop Math course provided double the amount of training hours, 48 hours, as opposed to GD&T at 24 hours, yet the time was shared for Print Reading and Shop Math as seen in Table 5. Inspection training having fewer training hours, 24 hours, yet having

the second highest rating at 31.3% of content learned possibly due to more time spent on shop floor in training also correlates with results presented in Table 8, of trainees report 62.5% use of inspection every day.

Table 7

Site A: Trainee Evaluation of Skills or Knowledge Learned

	Some (<40%)	About Half	Most (60% >)	Everything
Print Reading	6.3	6.3	25	62.5
Shop Math	6.3	6.3	62.5	25
GD&T	12.5	6.3	62.5	18.8
Inspection	12.5	18.8	37.5	31.3

Note. N = 16 respondents of 16 trainees

5. Did Trainees Use what they Learned in Training on the Job?

When asked if the employees are using what they learned in training on the job, Tom response was an immediate yes, and he explained:

> There is a blueprint that is traveling around with the parts. It is their job to open the blueprint and make sure that they are either cutting the correct features, [or] forming the correct features to that part at any given time, and it is part of the manufacturing process. It is also their responsibility. Also, there are calculations sometimes. If all the dimensions aren't necessarily given on the blueprint, they'd have to extract using other numbers that are given on the blueprint. So, that is where the shop math would come into play, and this is daily. Also, employees are responsible for checking their parts and measuring their parts, so they are using the inspection techniques. They have surface plates next to their machines, next to the form bricks, next to the tube benders, and they have all the equipment there for them to be able to check their parts. They've been

> given those tools and shown how to check those, and also this ensures what features to be looking for. So, there's not any excuse if when they turn the part into inspection. They should already know that the part is going to be acceptable, and if it's not acceptable, this almost would be a surprise to them. GD&T, sometimes it's on the blueprint and some it's not. A lot of the symbols are always there, so they're able to recognize all the different symbols on the blueprints.

The survey results in Table 8 follow Kirkpatrick's third level of training evaluation, the use of skills and knowledge component. Results show the 87.5% of the employees expressed they used the skills and knowledge learned in Print Reading everyday and 62.5% reported they used Inspection training everyday, both in alignment with the Production Controller's feedback. Other skills as in Shop Math or GD&T may have been used less as the trainees' job work load may not require these skills as often.

Table 8

Site A: Trainee Evaluation of Use of Skills or Knowledge

	Never	< Once a week	Once a week or >	Everyday
Print Reading		6.3	6.3	87.5
Shop Math	6.3		62.5	31.3
GD&T	6.3	31.3	37.5	25
Inspection	6.3	18.8	12.5	62.5

Note. N = 16 respondents of 16 trainees

6. *Did the Training make a Difference on Trainee Performance in their work (i.e. Improve Productivity)?*

When asked if training improved employee performance, Tom stated:

> Our scrap rate has gone down tremendously after the training. We do keep records of our scrap logs……..it's also improved production and we

> do have those numbers. Not only did we increase with the amount of employees we have, but we're actually getting more productive hours. The employees after they took the training don't necessarily need to go their immediate supervisor and ask questions.

Tom was clear to say that questions are not a bad thing, and it is important to set up their employees for success, not failure. "It's hard to blame if they just didn't know any better" that's why this training in fundamentals is so essential (Tom).

Tom was able to provide scrap data for the students that participated in the training from non-conformance reports and a separate file of rejection reports for employees that did not receive the training and who started around the same time as employees that did receive the training. These were parts that did not meet specifications and were rejected; they were not parts to be reworked. The reports indicate that the 16 employees who received the training averaged less than one rejection (.625) per trainee; conversely, employees without training averaged one rejection in the period (the length of the time period was not specified in the report). See Table 9 for the ratio results.

Table 9

Comparison of Employee Rejection Reports and Non Compliance Ratio

	Rejection Reports per Trainee	Rejection Reports per Non-Trainee
Rejection Reports	.625	1.000
Non-Compliance Issues	.625	1.000

The survey results in Table 10 follow Kirkpatrick's fourth level of training evaluation: the impact component. The results in Table 10 show whether the trainees/employees' felt the training delivered had any impact on their productivity. It

appears that the trainee results show higher percentages in evaluation of impact on productivity in Inspection training at a 50% major increase and Print Reading training which shows a 43.8% major increase. Trainee results show Shop Math training with a 25% major increase in impact of productivity, yet a 62.5% substantial increase. These are of interest as Shop Math and Print Reading which provided 16 sessions consisting of 48 hours of training were taught concurrently, and Inspection training was taught afterwards. GD&T training was the last of the training sessions provided for this ETP contract and indicates an 18.8% major increase in trainees' evaluation of impact on productivity yet a 43.8% substantial increase.

Table 10

Site A: Trainees' Evaluation of Impact on Productivity

	% No Increase	% Small Increase	% Substantial Increase	% Major Increase
Print Reading	0	6.3	50	43.8
Shop Math	6.3	6.3	62.5	25
GD&T	12.5	25	43.8	18.8
Inspection	6.3	18.8	25	50

Note. N = 16 respondents of 16 trainees

7. Did the Training Achieve its Intended Business Goals?

Tom's response to whether the training achieved its intended business goals was:

> I believe the training did accomplish its goals. We kind of just scratched the surface with this. This was our first on-site training. The goal was to give the new trainees the tools, to be able to scratch the surface and let them be dangerous enough to have some knowledge and start questioning things.
>
> Tom continued to speak of the importance of knowledge, for example;
>
> Instead of just working with blinders and saying, "okay I'm drilling this hole because my boss came down and told me to do it". We are trying to change that

mentality of the employees… "No let me open the blueprint and read it myself and yes we need to drill this hole because it's called out here and then the next step is going to be x, y and z and down the line." So, just more awareness for the employee and to question, not to be insubordinate or anything like that, but question something if somebody's ask you to do something. Not just because you're being told to. You should know why you're being asked to do this; if it's incorrect, give your opinion.

Answering the question of whether this was a worthwhile investment for his company, Tom replied "Yes. It was a worthwhile investment. Although not certain about the cost of training, Tom felt that "if you were to sign up an employee under the separate four disciplines, it would probably be twice as much. We saved a lot by being able to semi-tailor, and then the benefits that we did receive out of it. Yes, we're definitely better off, definitely worth it".

8. *Were there Secondary Effects on the Company in Terms of Improved Motivation, Better Relations between Managers and Workers and/or Other Organizational Changes?*

The results in Table 11 show whether the training delivered had any impact on trainee/employee feelings about the company after training: unintended benefits of training. It seems that, overall, trainee's feelings about the company are positive, as 75% strongly agree that they are more optimistic about their future with the company, as well as 75% strongly agrees that they are more positive about the company. The data also shows 68.8% strongly agree they are more motivated, and 56.3% strongly agree that communication is better with supervisors. Interestingly, 6.3% strongly agree that

relations with coworkers are better. This shows that there may not be any problems with coworkers or possibly there could be competition amongst employees. Through my observation while distributing the survey questionnaires, trainees showed camaraderie in a way that friends or a group belong together. Only three of the trainees sat at separate tables during the survey, and that may have been due to entering the room later than others. What is of interest is that the trainee evaluation of unintended benefits results show that 50% disagree that relations with coworkers are better since training, yet Toms statement below says otherwise.

Table 11

Site A: Trainees' Evaluation of Unintended Benefits of Training

	% Strongly Disagree	% Disagree	% Agree	% Strongly Agree
Communication is better with supervisors	0	0	43.8	56.3
Less stress on job since what I learned	0	18.8	37.5	43.8
Workers are treated with more respect	6.3	0	62.5	31.3
Relations with coworkers are better		50	43.8	6.3
More motivated and involved at work	6.3	0	25	68.8
More optimistic about my future with the company	6.3	0	18.8	75
More positive about the company	6.3	0	18.8	75

Note. N = 16 respondents of 16 trainees

When posed the question of whether there were secondary effects on the company due to training, Tom shared:

> As for communications between employees, it probably grew because they were all talking on the same page. They were able to talk the same language. They were understanding GD&T callouts; certain things that are referenced on the blueprint, title blocks, and flag notes. Those are all

> language of the industry and they started building their vocabulary. Not only were they able to talk to each other, the individuals that took this class, but they were able to talk to senior employees, too, that were saying, hey, you need to watch out for this flag note or this datum. What's a datum? What do you mean I have to pay attention to that? So just the understanding in building vocabulary, and I think correspondence between employees grew in that regard, which was nice also.

Another effect for the employee at Site A were the CSCC certificate they received, this is evident in the open-ended questions feedback on the questionnaire, for example, Tom also alluded to the CSCC certificate as a positive secondary effect for the employee by making declarations such as how "their confidence levels have gone up, obviously, looking at blueprints and reading them and understanding manufacturing, what needs to be done, because now they do have some knowledge". He went on to say, "I know they had a lot of fun with it and even the tests and everything, they're always talking about, how they're proud of [the tests] I just got a perfect score, almost missed one, oh my God."

9. *What can CSCC do to Improve the Delivery and Overall Process of the ETP Training Program?*

When posed the question of what can be done to improve the delivery and overall proses of the CSCC, ETP program, Tom suggested that "Prescreening to evaluate where the trainee candidates level of knowledge is" and "provide ongoing training" to stay on track with changing technology. Some of the frustration related to the pace of

instruction. Tom shared, “possibly next time, if we do an advanced and a basic and have those groups split a little bit more.”

Participant survey open-ended questionnaire responses to what they remember most about the training overall responses cited blueprint reading and shop math. All participants’ survey responses to what training they wished had been covered that wasn’t showed that everything was covered, yet longer class time for shop math and training in welding was recommended.

Participant survey responses as to comments about the training experience were mostly positive and included “Everything was super, no complaints, excellent instructor”, “Grateful that I was given the training”, “Great learning experience”, “It helps that you can learn and directly apply that knowledge to our job” along with one constructive critique “I think the training was sufficient, but I think more testing would help to solidify all of the subjects.” With overwhelming interest in wanting additional training and appreciation for the instructor, the employees’ perception of the training was optimistic.

Tom was asked if he would tell another company about CSCC, ETP Training and he replied “Yes. If another company asked, ‘how do you guys do your training?’ I would explain about CSCC, because I do think it’s beneficial for other companies to have those resources. I would point them in their direction.”

Site A Conclusion

It appears that Site A and their employees benefited from the training. The actual months of employment for trainees at the onset of this training was 1 month to 6.9 years. At the time of this research data collection, two years later, all trainee participants were still employed. This business approach to training was admirable and results were

measurable. The CEO's attitude clearly holds a strong hand in the outcomes. Another point of interest is that the employee trainees want to continue to participate and be engaged in training and learning.

Site B Business Description Profile

This book manufacturer business was acquired in 2008 by a family-owned commercial printing company with origins in the late 1800's. Corporate offices are out of state, situated in the Mid-West. The parent company has evolved over the last 100 years and has acquired various printing and graphics companies throughout the United States. Site B is the West Coast operations, employs approximately 100 workers, and is a part of the larger privately held concern with approximately 250 employees.

Site B's operations are housed in an 88,000 square foot industrial park facility. They offer printing, binding, and competitive fulfillment services for both short and mid-run book manufacturing using the latest equipment and technology. Site B features web and sheet-fed printing and complete bindery services including: case binding, mechanical binding, saddle stitching, UV coating, foil embossing, die cutting and laminating. This site facility focuses on sales and offset book manufacturing. The offset process works by transferring images, typically from original materials, which are digital to printing plates, and then to rubber plates used for printing.

According to their website, Site B is continually at work to be more competitive in the marketplace. A great example of this is their Lean Manufacturing Initiative, which kicked off in September 2006. By tailoring the fundamental principles of Lean Manufacturing to their needs, their expectations were to reduce waste, decrease production times, and increase quality, efficiency and safety. The Lean Manufacturing

Initiative is a team project, shared by all departments at Site B. Some of the most visible changes have been a result of the "5-S" portion of Lean Manufacturing which best practices consist of: sort, set in order, shine, and standards and sustain. Other training projects are to involve Tools of Quality and Value Stream Mapping. Value Stream Mapping is the gathering of all of the actions, both value-added and non-value added that create a product or service which is essential to meet the customer needs.

The observation of Site B provided a clearly detailed view of their production processes and west coast management office areas, as well as gave a better understanding of the business and its culture. Site B is located in an industrial park in a newer, developing outlying area of Los Angeles County. One can feel the growth and expansion of the economy as nestled off the main highway, are semi-trailer trucks frequently entering and exiting the business park. The brick building is large yet nondescript, with a small sign near the open-air parking lot entrance. I parked in a visitor space and entered the building labeled with the bulky numbered address. The reception area was large and airy, approximately 18 by 30 feet. The open desk cubicle and counter was unattended, yet there was a sign-in sheet next to a telephone with directions to call the operator upon arrival. While waiting for the Vice President of Production, Teri, to arrive, I noticed an old cast iron and wood printing press displayed in the corner.

The walls are covered in commercial style gray-striped paper, and there are upholstered wooden chairs in the center of the room. Everything appears simple, sparse, tidy, and unassuming, even the stairway that went upstairs is almost unnoticed. A woman who looked to be in her late twenties appeared though a doorway opposite the entrance and escorted me down a long hallway, approximately 100 feet, of open and

closed doors. Almost immediately another woman, older, possibly in her mid-to late fifties intercepted us and introduced herself as the Manager of Human Resources. She explained that Teri was in a meeting and I was directed to wait in Teri's office.

The door was ajar and when opened exposed a large blue tile-carpeted office approximately 18 foot square. Teri's desk was to the left, a large wooden desk, with mounds of paper and notes, a computer was center, and the phone and intercom speaker sat to the side angle. Behind her desk was a long console, which was also covered with files and papers. On the wall above the console is a corkboard directly below a standard looking wall clock. The corkboard had various papers attached, and upon a closer look, there were Certificates of Completion from the two CSCC training programs tacked to the board.

A large glass-top table on the right side of the office was jumbled with papers; contracts, samples, color-types. There were six chairs around the table; some were filled with books, two were empty. A large whiteboard with notes and markers scattered about the ledge was mounted across two-thirds of an adjacent wall. There were different size bookshelves around the office that housed binders; both behind the door and on another wall opposite Teri's desk. On this particular wall was a clear class window about 2 by 4 feet high with a half pulled up mini-blind exposing a bird's eye-view of the production room floor. This office was clearly a hectic space and the portal to the production area seemed clear and calm in contrast.

In less than five minutes Teri appeared, and seemed happy to see me, yet she expressed how busy with things she was and shared a few of her upcoming work demands. A well-dressed attractive woman, she appeared to be in her early 50's,

talkative and yet conscientious of the time and upcoming works demands. This was evident in the way the way her walkie-talkie intercom was buzzing and the people popping into her office for feedback.

It was a thrill to go through and observe Site B's production facility and watch the printing and binding in action. The sights, sounds and smells on the production room floor were varied; huge rolls of varied paper stock, pallets filled with orders, ink, sheets of paper, rumbling of machinery, presses and fork lifts and the occasional music in areas on the floor, and some which were quieter than others. The printing press was run by what appeared to be experienced workers who were engaged in their work and seemed confident working their machines. The workers some with eye goggles some not-seemed to be looking at the work meticulously, checking, and measuring. Next, the work was assembled and bound on the C-12 Binder, rightly named as it is capable of binding 12,000 books per hour; I was told this is about 3 books per second.

The employees nodded and said hello when we walked through the facility, and often communicated back and forth with Teri as she encouraged and helped clear up any confusions or just to verify what was going on. For instance, as we were standing on the production floor and Teri was explaining a printing process to me, Teri informed a woman nearby that the progress she was making on changes to an order were flawless and the customer was very happy. Teri also let her know that she was aware that she was working on the project alone as one of the workers was out for a few days.

Communication between different stations was frequent and checking paperwork and machinery for consistencies in color and laminating was apparent. Everything looked as if things were in sync and team members were working well together was

something I noticed throughout the walk through. For example, a worker came up to Teri holding some documents and asked for her assistance in double-checking a color pattern. After observing the color palette, she called in another worker to reconfirm the documentation in the production area. In another instance, two of the workers controlling one of the printing presses thanked Teri for her assistance in expediting the maintenance request on their machinery. Teri laughed back at them and said "stop breaking the machine." They smiled, waved, and continued working.

We eventually walked through an area called the kitting station, a place where specialty kits were formed. The area houses various things to assemble specialty box kits, such as boxes of crayons, CDs, DVDs, novelty stickers, small hour-glass sand-timers and packages of crayons and colored pencils. These items are included in the boxed kits that also have books and training tools and mostly for educational institutions. Teri shared that this was the area for their Lean Manufacturing training practices. We then moved through the loading dock and shipping area, and observed the company's trucks being loaded. They apparently have their own delivery trucks, as the company logo was inscribed on the three trucks I observed. Teri let me know that they have two transport shifts for west coast deliveries. Adjacent to the loading dock, there stood many large coils of paper approximately 5 feet wide by 6 feet high. In another section were numerous pallets of various types of flat paper stock, sealed in plastic and labeled. Two fork-lifts stood nearby as well as those which were observed throughout the production floor.

For the data collection, survey questionnaires were provided to the employees on site at the time of observation. Teri called each of them into her office via phone and

production floor intercom. Each participant was given directions, a passive consent form, a survey, and a pen. Some took the surveys back to their offices or workstations and one even leaned on the hallway wall while completing the survey instrument. The participants were a mix of men and woman, appearing to be Latino\a and Caucasian ranging in age from mid-thirties to early fifties. The employees were gracious and inquisitive, seemingly happy to participate and give their feedback. One at a time, they came back to Teri's office to drop off the completed surveys. They gave the impression of confidence and were comfortable with the Vice President of Production.

1. *What was the Company's Purpose for the Training and the Specific Business Issue Training Addressed?*

Vice President of Production, Teri, expressed that the purpose of training at Site B was due to corporate's Lean Manufacturing Initiative. Teri had been with Site B since 2010, just prior to the contract's term, yet was hesitant about having the interview, observation and survey conducted at Site B's location. She had expressed that due to administration changes; a new west coast facility controller had been appointed at the site, Teri did not want to raise any cause for alarm by inviting an outsider on the premises. Having been in the printing industry for nearly 35 years, Teri was quite knowledgeable and apparently well versed in many facets of the business. Although willing to participate in this research, contact and confirming a date and time with Teri, was not easy, we met off site initially for an interview. Six weeks later, after numerous attempts, via email and phone messages, I was then invited to an observation of the site. We spoke some more prior to distributing the survey questionnaires, and then afterwards Teri took me on a full tour of the facility.

At the outset, Teri sought out CSCC because the out of state corporate offices had participated in Lean Manufacturing training, and they wanted to implement the same at this location. When asked why her company offered this program she answered:

> We offered the training program because we know that they utilize it in our corporate office [Midwest] and they've seen the results from it. So, upon looking at our workforce and realizing that they didn't have the same skill set as in corporate, we felt that if we offered the training here, we could bring up the production and the efficiencies by having them trained to be efficient in Lean Time concepts in waste reduction. Basically, the employees didn't know anything about lean training. They didn't know how to do time studies or any of that.

Teri was asked to search out training programs and located this particular program at CSCC in a local area magazine. This program was especially appealing. She noted:

> Like the corporate training, this was funded partially by the state, and the fees were reasonable, with I think, fifty percent covered by the state. The corporate office had seen many positive results, specifically in bringing up production rates by training employees to be more efficient.

After looking at her workforce with a mix of newer and more seasoned employees who did not know anything about lean studies training, Teri felt that the best option would be onsite group training. Teri added that her "first and second shift employees all had the same background in the logistics of printing experience", so she felt as these employees were on the same level they would be the best participants for this training session. Although the corporate CEO fully supports training and wants to see results, production

could not be totally disrupted. The training schedule, where all the employees trained together in the classroom, is described in the following paragraph. The corporate offices liked the way CSCC planned the training, where the instructors come in for a few hours, once or twice a week. All training participants were paid their regular wages for their time spent in training.

2. *How was the Training Designed and by Whom?*

Site B received on-site training in Lean Manufacturing, topics include; Value Stream Mapping and Lean Time Studies and Production Leveling with a focus in 5-S best practices. As shown in Table 12, the courses consisted of 33 training sessions with a total of 80 hours. The training programs had consecutive scheduled start and end dates of October 21, 2011 through March 20, 2012, mostly Fridays from 10:00 am - 12:00 pm and September 6, 2012, through completion on October 25, 2012, Tuesdays and Thursdays, the first six sessions were 2 hours, 1:00 pm - 3:00 pm and the following seven sessions were scheduled for 4 hours, 11:00 am - 3:00 pm. The contract for Exhibit A states the course description with the objective of familiarizing the students with Lean Manufacturing concepts and waste reduction. Exhibit A-2 on the contract posits the course description with the objective of familiarizing Site B's employees with Lean Manufacturing concepts and waste reduction.

This particular Lean Manufacturing program is focused on Value Stream Mapping at the request of the business; therefore it is considered a customized training program. Within this contract, classroom training is documented as the training delivery, yet like Site A, a simulated lab type setting on the production floor is evident, specifically for Site B, where 5-S practices were taught. During my interview with the contracted instructor,

Carlos, he described Value Stream Mapping as the collection of all of the goings-on, both productive and non-productive, that make a product which meets the needs of the customer. Lean Time Studies and Production Leveling coursework focus is on 5-S best practices and setup reduction.

Table 12

Site B: Training Schedule

	Dates	Sessions	Hours
Value Stream Mapping	October 21, 2011-March 20, 2012	20	40
Lean Time Studies & Production Leveling	September 6, 2012-October 25, 2012	13	40

When asked about the contracting and design aspect of the curriculum process, Teri stated that the college was "wonderful in preparing the contract, the bottleneck was approval processes at corporate". "The one instructor, Carlos De La Fuente, assigned to teach all the coursework for this training session, CSCC Program Director, James, and Caroline, the office coordinator, were all wonderfully efficient and excited to share what the program could offer us." While finalizing the contract piece of the training, Carlos escorted a group of employees from the company on a field trip to another type of business that had completed the same lean studies program. The instructor, Teri, a Vice President from the corporate offices and some of the participants who were to be considered for the training program were to witness the lean time training and 5S studies results in action. Teri expressed that "the tour of the other manufacturing plant to see the progression and results of 5-S practices over years was eye-opening and quite helpful". Teri indicated, "that gave us a broad understanding".

In the classroom, Teri stated the instructor provided Power Points presentations, but materials were not extensive for these courses. She added that "Carlos provided several box kits from his previous trainings, which we shared with each other in training, until we started to work with our own products within our own frameworks, in the kitting area". The training included a video that explained the whole premise behind it. Teri shared:

> I think it was about putting airplanes together …. gave an overview of the whole, the lean time studies and spelled it all out….from there Carlos had us build these boxes at the desk in the conference room and then kind of change up the order and we could see that we could measure that process. But he would do it, literally, right with us. And everybody learned really well that way. I mean it's one thing to watch a video, but when you put it place and you're out there on your production floor and you're doing the time studies and you're marking down time and you're watching other people on your team go faster, it's energizing.

Teri attended all of the training, and, when asked as to what capacity she participated, she stated, "I did all of it. I was right there with them" and added "Well, if I want them to do it, then I'm going to learn it too!"

The site visit also provided an opportunity to see the conference room where the training took place. Walking back down the long hallway, we visited the library and book room where a copy of every book they printed and everything they had produced and kitted was stored. Through the library was the conference room, we entered into a rectangular room with no windows approximately 25 by 40 feet. Assorted-sized

bookshelves lined two walls; they varied in size and color, from white Formica to different color wood veneers.

Housed on and in the book shelves were picture frames with book cover jackets, journals, books, and kits that they produce and assemble along with some baskets with dried flowers. The walls were all painted white and the two adjacent walls housed white boards and a large calendar and a doorway leading to more offices. One white board was marked in black with a chart showing Monday thru Sunday, with a lineup of what appeared to be the upcoming schedule of production flow. Apparently, this was an operation that worked seven days a week. In the center of the room stood a long high gloss finished cherry-wood colored, conference table. A portion of the table had sorted piles of documents and folders.

In the center of the conference table stood a phone base for conference calls with a microphone nearby, and a television remote control. The 12 teal-green upholstered chairs adorning the table were on rollers. The floor had dark and light blue striated color carpet tiles. Scattered about the room were approximately 10 stacked and unstacked blue upholstered chairs, apparently for additional seating. There was a small television screen and media box on a table. According to Teri, this is where about 60% of the training was offered and presented to the trainees, while 40% of the training was provided on the production floor.

Carlos De La Fuente, the instructor of record, shared that he had often visited the sites prior to contract development purely to observe. He was mostly accompanied by the CSCC program director. There is no true evidence of syllabus or detailed curriculum provided by the college, site or instructor regarding who designed the training for this

program. Although no before and after data was collected for this study, it appears, through interviewing both Teri and the instructor, that the instructor was a critical component to designing the program to fit the needs of Site B and the trainees.

3. *What was the Quality of the Training Delivered?*

When reviewing CSCC's student evaluation documents, which were distributed by the instructor, at the end of each training the 12 employees who were enrolled in the Value Stream Mapping course and 10 employees who participated in Lean Time Studies & Production Leveling, all had provided perfect scores for the instructor and general training. Subsequently upon interviewing Teri, two years after training, from her perspective it was clear that the quality of training delivered was extremely satisfactory. There was no concrete evidence of training impact yet, since the training Site B was able to measure the efficiencies, specifically in how long a project takes, they have been able to schedule projects and have a clearer picture of the time line involved in each process. Before training, Teri stated, "We had no idea how long anything would take to complete, we were just winging it … but now we know, and it's really from the training. Seriously".

The survey results in Table 13 follow Kirkpatrick's first level of training evaluation: trainee's reaction to training. There are six respondent's survey questionnaire results. Pertaining to the employee's reaction to the quality of training, these six respondents participated in both training sessions. Six trainees in the Value Stream Mapping are no longer employed by the company, and four enrolled in Lean Time Studies and 5-S training were unavailable to participate due to shift changes.

Largely, the trainees' evaluation of reaction to training was positive. Results of the trainees' evaluation of both the overall quality of training and the quality of the instructor show 50% excellent. This is consistent with the qualitative findings that Teri had provided. Yet the trainees' evaluation of the instructor's ability to interest and motivate results show a 16.7% excellent. Interestingly, the trainees results pertaining to the quality of instructional materials show 33% excellent, 50% good and 16.7% fair, and Teri did share twice; once at the initial interview and then again at the site observation, that she had wished there was some handbook or literature available, as there were no handouts on training provided. This was primarily to be able to go back to, in order to refresh the training learned from the program in the contract period. For the Value Stream Mapping training, other than the box kits which Carlos brought in for classroom training, there appears to be no other training materials provided. For Lean Time Studies and Production Leveling the impression given is that there was a video provided and power-point slides with no handouts.

Another point of interest is that, according to CSCC documents and the V.P. of Production, Teri, the two training programs were considered to be customized, such as, Lean Manufacturing, which provided a focus on Value Stream Mapping and Lean Time Studies and Production Leveling and 5-S practices, yet trainees evaluation of the degree training was customized results show 16.7% fair, 16.7% good and 16% excellent. When speaking with the instructor, Carlos, he described the classroom curriculum as, divulging the "principles of Lean Manufacturing, importance of the factory layout, the physics behind it and building to order". After classroom training, the trainees, with Carlos's direction took the classroom knowledge to the production floor and put to practice what

they learned. It is quite possible that training is considered customized purely by being at the site using real-time materials that are part of the trainee-employee work load along with the production floor tool to manufacture products.

Table 13

Site B: Trainees' Evaluation of Reaction to Training

	Poor %	Fair %	Good %	Excellent %
Clear Objectives	0	16.7	50	33.3
Usefulness of Topics	0	16.7	50	33.3
Length of Time on Topics	0	0	66.7	33.3
Quality of Instructional Materials	0	16.7	50	33.3
Degree Training was Customized to Company	0	16.7	66.7	16.7
Quality of Instructor	0	0	50	50
Effectiveness of On-Site Training	0	16.7	66.7	16.7
Ability of Instructors to Interest and Motivate	0	0	83.3	16.7
Degree to which the Training was the Right Level	0	0	83.3	16.7
Quality of Training Overall	0	0	50	50

Note. N = 6 respondents of 12 trainees

4. Did Trainees Achieve the Learning Objectives?

The survey results in Table 14 follow Kirkpatrick's second level of training evaluation: the learning component. The quantitative survey questionnaire results show whether the trainees felt they learned the skills and knowledge. Results show that 66.7% of the trainees in Value Stream Mapping learned most or more than 60% of the skills or knowledge. While results also show that 83.3% of the trainees in Lean Time Studies and Production Leveling and 5-S learned most or more than 60% of the skills or knowledge taught. These results could reflect the training schedule provided in Table 12, which shows that Lean Time Studies and Production Leveling training was provided later in the

contract and offered fewer sessions and longer training hours. While the survey results of the trainee evaluation of skills or knowledge learned are not strong and not one respondent felt they learned everything in either Value Stream Mapping or Lean Time Studies & Production Leveling, the open-ended response to comments about the training experience interestingly show that the training was very helpful and more courses on communication and teamwork should be taught. For example, one respondent stated 'I was pleased to be chosen to be a part of the training. There are things I have used in my work, but I think training on how to communicate with people and how to get the message across without making people feel bad would be valuable." Another respondent reported "I liked the training but it was hard to implement it right away because we were used to the old way of doing things. We should have classes on how to change, shop organization and cooperation".

Table 14

Site B: Trainee Evaluation of Skills or Knowledge Learned

	Some (<40%)	About Half	Most (60% >)	Everything
Value Stream Mapping	0	33.3	66.7	0
Lean Time Studies & Production Leveling	0	16.7	83.3	0

Note. N = 6 respondents of 12 trainees

From Teri's perspective the trainees achieved the learning objective: "Yes, they got to see the benefit of it. It's a little hard after we've been doing something for so long one way, but people would refer back to it." She continued, "Just the simplest little thing could make the biggest difference, placing the crayons in a certain way saved time. We set the workstations for kits differently, we added a shelf and in the kitting area we had a place just for folding boxes". There were times, it appeared when interviewing,

that Teri was not differentiating between the two training programs, and it was difficult for her to specify which program was most effective. This could be due to the fact that the training began back in October of 2011.

5. Did Trainees Use what they Learned in Training on the Job?

The survey results in Table 15 follow Kirkpatrick's third level of training evaluation component: the use of skills and knowledge. The survey results show whether the employees felt they used the skills and knowledge learned. Results show that 100% of the trainees felt they used the skills or knowledge everyday in both Value Stream Mapping and Lean Time Studies and Production Leveling.

Table 15

Site B: Trainee Evaluation of Use of Skills or Knowledge

	Never %	< Once a week %	Once a week or > %	Everyday %
Value Stream Mapping	0	0	0	100
Lean Time Studies & Production Leveling	0	0	0	100

Note. N = 6 respondents of 12 trainees

From the viewpoint of the Vice President of Production, the trainees did use what they learned in training on the job, yet it took a while to really implement the changes from their past behaviors. For example, Teri stated, "When you are behind the eight ball, sometimes everyone just reverts back to what they have been doing comfortably for 10 years. The managers had to enforce the new way of doing things simply by just saying that we do it like this now." She added "After Carlos left, we were working in the kitting area and everyone began to set their stations like they had prior to what they had just learned, running back and forth to get an item like a small notepad to add to the kit, it was

chaos, but now we have become more conscious and have adapted our mindset and workstations to a more efficient way."

6. *Did the Training Make a Difference on Trainee Performance in their work (i.e. Improve Productivity)?*

The survey results in 4.12 follow Kirkpatrick's fourth level of training evaluation: the impact component. The results in Table 16 show whether the trainees/employees' felt the training delivered had any impact on their productivity. It appears that the results show a 16.7% major increase in trainees' evaluation of impact on productivity for both Value Stream Mapping and Lean Time Studies and Production Leveling. Trainee results show Lean Time Studies and Production Leveling with a 66.7% substantial increase in trainee evaluation of impact of productivity.

Table 16

Site B: Trainees Evaluation of Impact on Productivity

	No Increase %	Small Increase %	Substantial Increase %	Major Increase %
Value Stream Mapping	0	33.3	50	16.7
Lean Time Studies & Production Leveling	0	16.7	66.7	16.7

Note. N = 6 respondents of 12 trainees

When asked how they measure whether the training is productive, all that Teri was able to offer was, that "production rates have increased". Specifically, she said:

> Of the many things we looked at was all of our hand work. We do a lot of hand mechanical binding and kitting. We weren't measuring at all before. So, we would do the time studies and see where we stopped and started. One of the ways we measured was just when we were increasing our output in an eight hour shift.

> Secondly, watching our labor costs, you could see that we were getting more units per hour with less people.

Teri did not have exact figures, yet she provided some numbers to conceptualize such as "if you cut off three seconds a handbook of producing 15,000 handbooks it adds up". Teri explained about measuring production by sharing how they prepare the kits in boxes:

> In the box, comes all these books and CDs and there will be transparencies and other things. We assemble the whole box; we have more than 300 different kits. All the components that go in there have to coordinated, and then we do time studies and see how to get them in the box the quickest. We had no experience with that at our location. We bought a company in LA that did it all the time, but, when they came up here, both people didn't come with us. So we had to learn from the ground up. So, literally, from getting the box to taking the box out with a dye cut, then folding the box, putting the labels on the box, the little things that hold the books inside the box. We just time studied all that, which Carlos taught us how to do. So we probably reduced our labor force doing these kits more than 50%. When we first started, we'd have like 20 people over there and now we can do the same thing, depending on the size of the kit, anywhere from like five to 10 people. So, we're much more efficient at it. We really got it down.

7. Did the Training Achieve its Intended Business Goals?

Although no specific evidence of data was provided, Teri expressed immediately "yes, absolutely" at our original interview when asked if the training achieved its intended business goals. At the follow-up observation she reiterated how effective the training was. She added that the training which CSCC offers, geared towards improving

our local workforce is highly beneficial for the community. As an employer it is increasingly harder to find a qualified workforce".

8. *Were there Secondary Effects on the Company in Terms of Improved Motivation, Better Relations between Managers and Workers and/or Other Organizational Changes?*

The survey results displayed in Table 17 show whether the training delivered had any impact on trainee/employee feelings about the company after training: unintended benefits of training. Though there were only 6 respondents, it seems overall, trainee's feelings about the company are positive, and 100% agree that communication is better with supervisors. Trainee results also present that 83.3% agree that there is less stress on the job since what they learned, 83.3% agree they are treated with more respect, 83.3% agree that relations with coworkers are better and 83.3% agree they are more positive about the company. The data also shows 16.7% strongly agree they are more motivated and involved at work, and 16.7% strongly agree more optimistic about my future with the company.

Table 17

Site B: Trainees' Evaluation of Unintended Benefits of Training

	% Strongly Disagree	% Disagree	% Agree	% Strongly Agree
Communication is better with supervisors	0	0	100	0
Less stress on job since what I learned	0	16.7	83.3	0
Workers are treated with more respect	0	16.7	83.3	0
Relations with coworkers are better	0	16.7	83.3	0
More motivated and involved at work	0	16.7	66.7	16.7
More optimistic about my future with the company	0	16.7	66.7	16.7
More positive about the company	0	16.7	83.3	0

Note. N =6 respondents of 12 trainees

As the Vice President of Production, Teri felt that trainees felt more involved in the company and better about themselves because "it made them feel a little smarter. Most of the employees in training had just a high school education, and I think that studying with the rest of us and learning at the same time was valuable for them".

Teri's response indicated that she felt the employees were happy she was involved with the training, although there were some language barriers, the trainees kitting workstations provided a healthy arena for learning together.

9. *What can CSCC do to Improve the Delivery and Overall Process of the ETP Training Program?*

Teri's response to what she thinks CSCC can do to improve the delivery and overall training process was generally about the publicizing of it. Teri stated that, "from a marketing point of view, how to get more customers, they've got to go out and interview the businesses here and the HR people or the owners, whoever they're talking to and saying, 'what labor force do you need?'" She feels strongly that "CSCC must go out and seek what the real need is. The labor force is not as skilled as you would think it should be" she clearly noted. Teri also felt quite strongly that there should me more materials provided for training, specifically books and handouts.

Site B Conclusion

At the time of this research, just short of three years from the beginning of the contract, the employees who participated at Site B had been employed for an average of nine years and four months. The number of respondents at Site B was not very strong, with only half of the original 12 trainees participating. Site B was not able to provide documentation of any scrap rate, time studies or absenteeism records. CSCC student

evaluations of the training were all perfectly scored. This varied from the survey questionnaire the research conducted where the scores were significantly lower.

Site C Business Description Profile

Founded in 1954, Site C manufactures precision components for airframe manufacturers and subcontractors in the aerospace industry, serving both the military and commercial businesses. It has products that range from miniature fluid control components to complete manifold assemblies. Principle products include hydraulic, pneumatic, and fuel system components. Site C is also a Federal Aviation Association Repair Station and a Parts Manufacturer Approved and Certified facility. Since September of 2010, Site C has been a subsidiary of a very large company, located outside of California, and listed on the New York Stock Exchange. Having merged in 2013 with a similar business within the industry, there is much change occurring at their present location as they are aligning the two businesses and locations.

Site C has been at the same location since 1983 in an unassuming industrial business park in three buildings, consisting of 80,000 square feet of offices and manufacturing space. There is only a small sign outside, the entrance is modest, and one enters into a blue-tiled carpeted reception area measuring approximately 14 by 14 feet. There is a three-foot glass window partition on one wall, with a sign-in sheet on a clipboard and a metal bell on the counter.

After I signed in, the receptionist greeted me kindly, made a call, supplied me with a visitor's pass, and informs me that "Craig" will be out in a few minutes. There are six armless, chrome-framed waiting room chairs with blue upholstered seats, lined up against the wall parallel to the reception window. The four white walls in need of a

refresher paint job were lined with various awards, certificates, a poster of an airplane, and newspaper clippings of Site C's achievements over the years. One in particular stood out; it was a framed thank you letter with a government seal alongside a picture of a military fighter jet.

Adjacent is a large, oak-framed glass cabinet which displays various valves which the company manufactures. They are all labeled and range in size and colors from approximately two to 12 inches. Craig, the Human Resources Manager arrived and escorted me for the interview through the front entrance as we walked out towards the rear of the main building to a bungalow-like trailer building, where his office is located. Craig appears to be in his early 30's wearing slacks and a polo shirt. As we were walking, he told me that, he had left a message earlier on my voice mail for postponing the visit, as he had realized that there were a few new hires he had to attend to. He expressed it was okay now, as he was able to rearrange the schedule. Our dialogue is about the weather and then switches to his tenure working at this company since he was a teenager. Craig had started as a part-time office assistant and had since, been in Human Resources at Site C for eight years.

He seemed pleasant and was conscientious, assisting with my roller cart as we walked the trailer steps up to his reception area. Then he settled into his office, a small paneled room providing a desk, credenza, and two chairs. A diploma for a bachelor's degree in business from a local university hangs on the wall. Craig's pressed oak wood desk was neat with a few papers and what I assumed were family pictures adorning the perimeter. A small matching credenza with a row of binders and a printer were on the

adjacent wall. At the start of the interview, Craig was asked about his knowledge of the ETP program, and he replied:

> We had previously used one through another local community college, and we weren't too happy with their particular program. It was right when I took over in HR. Our prior HR Director had set up the one with the other college, but, when I came on board, I went down the road a little bit and found out that CSCC had one as well. So, basically, we had had past experience with ETP, but we just hadn't with this particular college.

When probed about how the previous training had gone or what exactly the training was, Craig did not go in to detail and just assured me that the company and employees were not pleased with the program.

Following the interview, we toured the factory and production areas. The walk-about through the facility, inclusive of the adjunct buildings, was a maze of rooms housing various processes: design, production, assembly, test areas, de-burring, quality control, stock areas, shipping and receiving, lunch and break rooms, training classroom and the management offices. It was lunch time when we began the walk-through so many production areas were vacant or had some stragglers still at work. One particular area held a large pallet of what looked like two- foot by eight-inch metal type cylinders, which Craig explained were put into a machine where they were extruded into a hydraulic valve component for aerospace landing gear.

Craig was cordial, yet serious, with the employees we passed, nodding or saying a brief hello. At one point, he approached a worker who was eating near his work station and told him that he was not allowed to have his lunch there. Later in the tour, he popped

his head into a manager's office and let him know that the worker should use the lunch room. This power play incident made me uneasy simply because I felt there could be a more appropriate time and place to address a discipline issue. It made me wonder how worker management relations truly were. We continued through the network of work stations and offices and entered a room where the training classes took place.

1. *What was the Company's Purpose for the Training and the Specific Business Issue Training Addressed?*

Documentation for the on-site, classroom training at Site C, shown in Table 18, includes five training programs presented on three different contract addendums. The Exhibit A Agreement states 72 hours total; two 24 hour Blueprint Reading and one 24 hour Hydraulics class, all described as introduction courses. Exhibit A-3 Agreement shows a 32 hour Professional Development Course designed to help employees develop critical abilities including; skill sets needed to develop others, build trust in a team and solve problems. The Exhibit A-4 Agreement is for a 24 hour Business Writing and Professional Development with a course description as fundamentals of writing emails, concise letters, detailed reports and performance evaluations. The course focus is stated as organizing thoughts for greater reader comprehension and using grammatically correct sentences. The Site C contract with CSCC has listed three separate instructors assigned to the four course offerings, one each for: Blueprint Reading, Hydraulics Training, and one for Professional Development and Business Writing. All the training provided was on-the-clock, so employees were receiving salary when in training. The instructors are hourly employees who work temporary and/or seasonal periods, and as shared by

Catherine, the program Coordinator at CSCC, “they are all professionals and experts in the fields of the classes which they are assigned to teach”.

Table 18

Site C Training Schedule

	Dates	Sessions	Hours	Days
Blue Print Reading	February 24, 2012 - March 30, 2012	6	24	Fridays
Blue Print Reading	April 6, 2012 - May 11, 2012	6	24	Fridays
Hydraulics	April 7, 2012 - May 12, 2012	7	28	Saturdays
Professional Development	July 15, 2012 - July 30, 2012	8	32	Monday-Thursday
Business Writing	September 12, 2012 - November 15, 2012	8	24	Fridays

Craig stated that the reason for this manufacturing-skills-specific training and the prior basics and fundamental trainings has always been for new employees in assembly, test areas and their machine shop:

> Most of our training is for entry level positions, so a lot of it is learning while on-the-job. But there are certain skills that we think that are better suited to be brought in from the outside, specifically, blueprint training and hydraulics training. So, having that school environment has benefitted the employees and that’s why we chose to go with that type of program.

He added that, at that specific time:

> We were just hiring a lot of workers. Our turnover has been ok, but, any time that we have hired, I would wait until there were about five new employees, and then scoop them all up and run them through blueprint training, and then hydraulics training. Every once in a while, we have a need. Basically, as the need arises, where we identify that our own on-the-job training can’t cover it all, we go outside and get these school-type-environments training.

Craig shared that management at Site C was already familiar with state funding and partnering with the colleges. Outside of that, other professional development opportunities they had considered and previously used were seminar groups like National Seminars or Fred Pryor. He added, "But, those are one day seminars, and aren't very comprehensive so, like I said, we were familiar with this type of ETP training program already, and, so, it's really been our primary option that we've used for training purposes". The Professional Development and Business Writing classroom training are not typically for newer hires. They are refresher courses for leadership effectiveness and customer service skills building.

2. How was the Training Designed and by Whom?

The design portion always had to do with the hiring manager in the particular area Craig stated:

> When we did this last contract, the people that were involved were the Operations Director and our Engineering Director. Basically, how the process would work is that I would first make the initial contact with James, the Director at CSCC and, after, we had a conversation about hydraulics or blueprint, whatever the case was, he would review the topics of what was completed prior to their involvement. James would bring in an instructor that he thought would be a fit and they'd sit down with whatever manager was requiring the training. They would sit down, come up with a curriculum that made sense, and then, after that, it was kind of figuring out dates and it was a go.

When inquiring about having an interview with one of the site production managers Craig was not amenable or particularly interested in allowing me that access.

Additionally, there was no curriculum, study guides or classroom worksheets he was aware of or was able to provide. There were three individual instructors for site C's training, one each for the hydraulics and blueprint reading and one for the professional development and business writing. None of the instructors were available for an interview.

Craig added:

> All the times that we've ever tried to get any training here with CSCC, it has always been great. I think there's only been one time where we had a little bit of a delay, but it was because of our production schedule and then also the schedule of the instructor. So, there's only been one time where we couldn't get it done in two weeks.

Additionally, he stated, "When it comes to the contract side, if it's time for a new contract for a new year, a quick sign off and we're good. Nothing terribly stringent, not any real issue. Nothing really takes too long."

3. What was the Quality of the Training Delivered?

Survey questionnaires were handed out in Site C's training room, where the ETP training took place, which was located in an adjacent building. The rectangular room had a set-up of two projectors over head for viewing on either of two walls. When we entered, there were chairs stacked up and tables pushed up against the walls. Craig and I unstacked a few chairs and brought forward a table. The participants can be described as a demographically-mixed group of both men and women. The age range appeared to be between 25 and 55 years old. They entered the training room in a casual manner in groups of four and five and took seats in clusters of what appeared to be department

colleagues. Some employees were laughing together, but, mostly, they were uncertain of what they were being called into the classroom to do.

There were 35 employees enrolled in training at the time of the contract. Eighteen initially completed the survey questionnaires. Nine others were either absent from work that day or at the new facility with which the company had just merged. Eight of the original employees were no longer working with the company. The researcher, consequently, left nine additional survey packets, each with a self-addressed stamped envelope with the Human Resource Manager. Craig expressed that within a two-week time frame, the surveys should be completed, as some employees were on vacation. Seven surveys were returned individually as promised within two weeks. This provided data from 25 trainee participants, over 71% responded.

The disbursement and collection of surveys went well. After an introduction, the trainees seemed genuinely content to participate. Craig stated that "some of the employees in his opinion believe that I'm just here and I'm getting paid and so they're not really trying to get anything out of the classes. There's a percentage of that, yet most of them are not here anymore." He felt that the overall rating would be probably pretty high. Craig added, "Like I said, even though we don't have any formal feedback, what we do hear, whether it's through whispers or coming directly to us about it, the consensus is generally very good so I think the overall rating is relatively high". He even felt that the managers on the floor would have the same response.

The survey results in Table 19 follow Kirkpatrick's first level of training evaluation, trainee's reaction to the training. With quality of training rated at an 8% excellent with a 64% good rating, the trainees were decidedly satisfied. Trainees'

reaction to length of time on topics was 68% good and also presented 60% good to the degree training was customized to company; both topics had a 4% excellent result. Although there were four different instructors at Site C, the quality of instructor posed by the trainees' shows 40% good, almost consistent with the ability of the instructors to interest and motivate at 44% good.

The descriptive open-ended survey question comments about the training experience are mixed. Those in the Professional Development and Business Writing courses stated, "There was an evaluation of our skill set that took place. It was nice knowing my strengths and weaknesses" and "Very good instructor who kept the class interesting". The manufacturing skills building results include statements such as "It was on a Friday, so it was overtime. I felt like we got paid for the class", "classes were well structured yet the topics and material did not relate to our company", "maybe they should have used drawings related to the parts we make" and "needed more details in dimensions and terminology of blue prints."

Table 19

Site C: Trainees' Evaluation of Reaction to Training

	Poor %	Fair %	Good %	Excellent %
Clear Objectives	0	16	68	16
Usefulness of Topics	0	28	52	20
Length of Time on Topics	4	24	68	4
Quality of Instructional Materials	0	32	48	20
Degree Training was Customized to Company	0	36	60	4
Quality of Instructor	4	28	40	28
Effectiveness of On-Site Training	0	28	60	12
Ability of Instructors to Interest and Motivate	4	36	44	16
Degree to which the Training was the Right Level	4	24	56	16
Quality of Training Overall	0	28	64	8

Note. N = 25 respondents of 35 trainees

4. Did Trainees Achieve the Learning Objectives?

When asked if the training achieved the goals of teaching the fundamental basics, Craig replied, "In most cases, yes." It appeared that the trainees and instructor of one particular class, hydraulics, felt the training should be more site-specific. Most of the employees at the facility are aware of the types of training and they appreciate, at the end of the training, that they receive certificates. "There is testing, and, if the trainee doesn't do well, a certificate could be held back." Craig was quick to add, "Not that it has happened." Typically, certificates of completion are provided by CSCC and handed out to the trainees by the instructors at the final class meeting.

The survey results as shown in Table 20 follow Kirkpatrick's second level of training evaluation: the learning component. The quantitative survey questionnaire results show whether the employees felt they learned the training delivered. While no respondents felt they learned everything in business writing and professional

development, 42.9% and 71.4%, respectively, they expressed they learned most (60% >), whereas 18.8% of the respondents in blueprint reading and 11.1% in hydraulics expressed they learned everything and 43.8% and 77.8% of them reported most (60% >). The data show 57.1% learned some (<40%) in terms of skills or knowledge learned in business writing training. Interestingly, the participants in both Business Writing and Professional Development had expressed that they did not learn everything. As provided in Table 18, the Site C training schedule shows the Professional Development course was scheduled for a two week-session Monday through Thursday at 32 hours while the Business Writing was a four week eight session model that met on Fridays for a total of 24 training hours. It is possible that the schedule did not suit the course work for the trainee participants in the Business Writing or possibility the employees felt they still need additional training. It is important to note that the trainees for both Business Writing and Professional Development were the same, as well as the trainee participants in Blue Print Reading and Hydraulics were the same individuals.

Table 20

Site C: Trainee Evaluation of Skills or Knowledge Learned

	Some (<40%)	About Half	Most (60% >)	Everything
Blue Print Reading	12.5	25	43.8	18.8
Hydraulics	0	11.1	77.8	11.1
Business Writing	57.1	0	42.9	0
Professional Development	0	28.6	71.4	0

*Note. N = 25 respondents of 35 trainees****16 took blue print reading, 9 took hydraulics, 7 took business writing and professional development***

5. Did Trainees Use what they Learned in Training on the Job?

The survey results representing the use of skills and knowledge as shown in Table 21 follow Kirkpatrick's third level of training evaluation: whether the trainees used what they learned. The survey results in Table 20 show whether the employees felt they used

the skills and knowledge learned. Results show 88.9% of trainees in Hydraulics felt they used the skills and knowledge learned while 11.1% report never using them. Business Writing results show 28.6% of the respondents use the skills and knowledge every day, and 57.1% report using them less than once per week. Interestingly, the open-ended survey responses on Business Writing training were positive; there were three respondents who voiced their opinion on the email communication portion of the training, stating, "It helped me to clarify what is needed for a more concise email" and "I can now communicate better with customers through email" along with "Learning how to deal with customers who are upset was helpful".

The response from Craig when asked if employees are using the skills learned in training on the job was:

> I don't know if I have any examples, but I know they are. The intent of this training is to give them a better overall view of how hydraulics or what is really included on a blueprint, not just a specific or particular component of their job. It probably helps them better figure out or understand an issue.

Table 21

Site C: Trainee Evaluation of Use of Skills or Knowledge

	Never %	<Once a week %	Once a week or > %	Everyday %
Blueprint Reading	0	18.8	0	81.3
Hydraulics	11.1	0	0	88.9
Business Writing	0	57.1	14.3	28.6
Professional Development	0	14.3	42.9	42.9

Note. N = 25 respondents of 35 trainees ****16 took blue print reading, 9 took hydraulics, 7 took business writing and professional development***

6. *Did the Training make a Difference on Trainee Performance in their work (i.e., Improve Productivity)?*

When asked if training made a difference on employee performance, Craig stated, "I would think so. They are green and have no prior experience when they are coming on board, and they don't have any of the skills at all. So this just better equips them to do their job". He added, "Unfortunately, we haven't done a good job of measuring based on the classes themselves. The classes are meant to give the employees a broader sense of what they're doing versus tunnel vision of their particular job. So, to do a measurement is kind of hard because of that."

The survey results, as displayed in Table 22, follow Kirkpatrick's fourth level of training evaluation, the impact component. Table 22 shows the trainees' perception of the training's impact on their productivity. Hydraulics training shows 33.3% of trainees' reported a major increase, 33.3% reported a substantial increase, and 33.3% reported a small increase on productivity while no one reported there was no increase. Professional Development trainees reported a 42.9% substantial increase and 42.9% small increase, with 14.3% reporting no increase of impact on productivity. Similarly 28.6% of Business Writing trainees reported no impact on productivity.

Having asked the Human Resources Manager, Craig, if the employees may have faced any obstacles using their new skills, the reply was, "I don't think so. This is just a tool for them and this training just better equips them to do their job." From the trainee responses, it appears that there is no correlation between perceived quality of training and the impact of the training.

Table 22

Site C: Trainees Evaluation of Impact on Productivity

	No Increase %	Small Increase %	Substantial Increase %	Major Increase %
Print Reading	0	56.3	18.8	25
Hydraulics	0	33.3	33.3	33.3
Business Writing	28.6	57.1	14.3	0
Professional Development	14.3	42.9	42.9	0

Note. N = 25 respondents of 35 trainees ****16 took blue print reading, 9 took hydraulics, 7 took business writing and professional development***

7. *Did the Training Achieve its Intended Business Goals?*

When asked whether the training at Site C achieved its intended goals, Craig's response was "the business goal was to make sure that we have well-rounded employees trained and it's definitely met that requirement." Craig had more to say about the CSCC, ETP training:

> The college comes here for about 99.9% of the training. Every once in a while, we do have about one or two individuals in our machine shop that do go out to CSCC explicitly for programming. Specifically, the classes were Master CAM, as this is what we use, and they have training, so, once in a while, we do send them out to them. But it's rare. Most of the time, the college is coming to us.

8. *Were there secondary Effects on the Company in Terms of Improved Motivation, Better Relations between Managers and Workers and/or Other Organizational Changes?*

The survey results displayed in Table 23 show whether the training delivered had any unintended benefits. Although 4.8% strongly agree that there is less stress on the job given what they learned, 52.4% agree and 42.9% disagree with that statement.

Interestingly, 23.8% strongly agree that they are more motivated and involved at work since training, yet 42.9% state there is less stress on the job since what was learned. Results of the overall impact of unintended benefits, such as communication is better with supervisors, workers are treated with more respect and relations with co-workers are better, present that 70% of trainees/employees agree.

The Human Resources Director, Craig, explained that "some of the employees have come in and thanked us. They really appreciate the training and they are proud to have a certificate. At least now they have something that says they took this training." When asked how he thought the employee trainees rated the training, Craig's response was, "Even though some are not here anymore, in my opinion, some thought that they were just here, getting paid and not really trying to get anything out of it. There's a percentage that feel that way, but, overall, the rating is probably pretty high, I think." Craig added, "Although there is no formal feedback, what we do hear, whether whispers or directly to us is generally good, so I think that, overall, the rating is relatively high". Craig had expressed that he stopped in on a few training sessions sometimes, at the beginning or end of the session, just to observe what they were doing.

Table 23

Site C: Trainees' Evaluation of Unintended Benefits of Training

	% Strongly Disagree	% Disagree	% Agree	% Strongly Agree
Communication is better with supervisors	0	10	70	20
Less stress on job since what I learned	0	42.9	52.4	4.8
Workers are treated with more respect	0	25	70	5
Relations with coworkers are better	0	15	70	15
More motivated and involved at work	0	19	57.1	23.8
More optimistic about my future with the company	0	33.3	50	16.7
More positive about the company	0	27.8	50	22.2

Note. N = 25 respondents of 35 trainees ****16 took blue print reading, 9 took hydraulics, 7 took business writing and professional development***

9. *What can CSCC do to Improve the Delivery and Overall Process of the ETP Training Program?*

When asked what the college could do to improve the ETP training program, Craig shared:

> I don't think I would change anything, but, if possible, I think the only thing I would change is that 24-hour requirement if I could. But, you know, it's a requirement for the state, so there's not a lot we can do. I mean, if we could change that…because there are certain little topics you could easily do eight hours and call it a day. But, because of the requirements, you have to do 24 hours to qualify for the funding.

Opened-ended survey responses concurred with Craig's time requirements. For example, some felt the hours were too long. One comment was that "the class was four hours, but we could have spent two hours of better value", although one trainee stated that the "instructor seemed to rush through the material" which conflicted with some of the Human Resource Manager's conceptual training outline of a broad perspective of

training. Many trainee responses suggested more site-specific training and using topics and materials that related to their company, a blueprint trainee participant felt that "drawing related to the parts we make would have been more helpful" as well as "more details such as sub-dimensions and terminology of blue prints is necessary."

Site C Conclusion

At the time of the research data collection, the employees who participated at Site C had been employed for an average of three years and two months. From the perspective of the Human Resource Manager, when asked about the CEO's attitude toward training, Craig replied, "It's terribly important. He doesn't check up on it, but he has confidence that it's getting done and he knows that it's just as important as anything else, as any other part of the business." From Craig's perspective, the training appeared to reach its goals. As mentioned earlier, if there had been an opportunity to speak with the Operations or Engineering Director, perhaps the perspective would have been more detailed regarding outcomes and measuring productivity.

Consortium Site Description

The consortium consists of a group of trainees from various businesses who attend CSCC for their training needs. Consortium training is for businesses that may not have enough employees to conduct an on-site training or for an individual working in the field who seeks specific training. For the consortium, the classroom training was provided at the CSCC campus.

At first impression, the CSCC campus is expansive and dynamic. This is evident in the long uphill drive to the construction areas that look down towards what appears to be the older section of campus. A newer looking modern glass and steel, architecturally

sleek structure sits on top of the hill. The building is surrounded by desert-like foliage; there is a circular cement fountain and rock gardens that are covered by an extended white arbor. Adjacent is a seating area with round stone-like tables and benches sheltered by umbrellas. The feeling is clean, crisp and refreshing.

This facility houses much of the campus's business activities. Upon entering the building, one walks through a gray-slated tile lobby, complete with reception area. The wall facing the entrance is glass with doors out to a courtyard seating area and stone-slate contemporary water fountain. There is a black grand piano off to the side and, beyond that, one sees a metal steel-colored modern-looking stairway going up. A café is located in this entrance as well.

After walking up the flight of stairs and through the open breezeway balcony, one can look back over the railing to the lobby entrance and courtyard below. Down one side of the second floor landing is a long and wide gray tiled hallway with doorways. Directly opposite the connecting corridor there are offices. This is where the Economic Development Center houses its various administrative divisions, inclusive of the job training division office, in addition to other community-based college cooperatives and associations. While continuing the walk through the hallway there are inviting, modern seating areas situated between many maple-colored wooden doors. Peeking in the windows of the doors, one sees that these are types of training rooms. They differ in set-up; some with conference style, classroom, and others with computer lab seating. Everything is new and contemporary in style.

At the time of this study, the opportunity of an observation of the campus training site and a class in session presented a clear view of the conditions of the learning

environment and the instructor's training methods, as well as the program protocols. The researcher interviewed instructor Carlos De La Fuente prior to the training program observation; he was also the instructor of record for Sites A and B. It was his suggestion that I attend one of his training sessions to observe for a better understanding of how he conducts a manufacturing skills class.

The business industry demographics for this consortium consisted of three businesses in the aerospace and aviation industry, one that produced automobile parts and one in healthcare and medical devices. The manufacturing skills training sessions for this contract are Geometric Dimension and Tolerancing (GD&T) and Inspection Techniques. The college documents categorize the training sessions as flights, named by a previous college administrator, as these classes were originally for the local aerospace manufacturing industry. As shown in Table 24, they each require 28 classroom/lab hours and meet seven times for four hours per session. The former flight was scheduled August 28, 2011, through October 9, 2011, and the latter during October 24, 2011, through December 19, 2011. The classes are held in the late afternoon and, depending on the trainees' work schedule, some may be on or off the clock.

Nine companies signed up for this consortium contract, and five businesses contributed in the research, three of which provided management interviewees as well as trainee survey questionnaire participants. Initially in this contract, there were 20 trainee participants with one trainee taking both of the manufacturing skills courses. Nine survey questionnaires, each with pre-stamped and self-addressed envelopes, were delivered to the five business sites that participated in this research. The survey questionnaires were hand delivered to each business site by the CSCC staffer, Catherine, and distributed to the

trainee by the office or human resource manager of the site. Six of the survey responses were returned completed within 10 days. The remaining three trainee participants who were given surveys did not respond, one of whom was no longer working for the company.

Table 24

Consortium Site Training Schedule

	Dates	Sessions	Hours
Inspection	8/28/2012 - 10/9/2012	7	28
GD&T	10/24/2012 - 12/19/2012	7	28

Business Profiles

1. *What was the Company's Purpose for the Training and the Specific Business Issue Training Addressed?*

Interviews with three of the business managers revealed various reasons and goals for training as well as how they came to know about CSCC's ETP program. A company President expressed that he met someone who previously worked for CSCC at a conference and emphasized that his business should get better acquainted with Lean Manufacturing processes. A Human Resources Director, Leah, was interested in the state-funded angle and had been involved with a regional industry association, which had supported state-funded job training programs. Leah went on to say that there was no immediate purpose for the training, yet, "when she receives information from the college via email, she prints the flyers for posting so that any of the employees can take advantage of training". The third business participant, an Office Manager, sought this to better serve the production team. Since the contract period ended, she had been involved and participated in various leadership skills and professional development classes at

CSCC and was extremely happy with the outcomes. Three of the production employees had subsequently taken these leadership and developments skills classes with her.

At the time of this research, two years after the training was complete, the six employee trainee respondents had an average of five years on the job. The range of years with the companies utilizing the ETP training varied. One of the trainees had 16 years on the job and one had three years.

2. *How was the Training Designed and by Whom?*

The two classroom delivered courses were in the fundamentals and basic skills category of manufacturing skills building. These courses were predesigned to fit manufacturing business needs in the local area. The local businesses or individual would contact CSCC and discuss their needs with the program director. This information was that corroborated with the instructor. The contract's GD&T and Inspection, taught by Carlos, had specific criteria, respectively, to be able to recognize and interpret geometric dimensioning and tolerancing symbols, and to better communicate with customers and coworkers to improve quality, with a focus on understanding and improving their accuracy with calipers, micrometers and other measuring tools. This and most consortium training programs, had no on-site training, according to the program Director and Carlos, so trainees were encouraged to bring in their own industry caliper tools and blueprints to class if allowable by their employer. Regardless of whether the training was with the trainees own business tools, the CSCC provided materials such as tools and the instructor had blueprints.

The three businesses interviewed had varying criteria for deciding how and who chose the classes to attend. One business in particular posted the CSCC training classes

and schedules in the employee lunchroom and allowed the employee to choose a training session. The remaining two businesses interviewed had specific training in mind for their employees; training was driven by business necessity and even by businesses customer requests. For example, the President of one business expressed that his clients indicated that the employees working on their products should be trained in GD&T and Inspection, specifically to improve communication with their business.

Another aspect of the consortium training contract administrative component is that businesses involved with the CSCC staff appear to be extremely fond of them. For example, the businesses feel staff performance and effectiveness in getting things accomplished in a timely and efficient manner are relevant to the success and ease in the process. In particular, one manager expressed that "I deal with Catherine; she is thorough and gets it done." The CEO interviewed stated that he had no dealings with the administrative paperwork piece, "I just handed that over the college. They were better at being organized and getting everything done ahead of time and not letting things fall through the cracks". He added, "I just sign the papers and the checks". Another spoke of how the Program Director is easy to get along with and knowledgeable regarding how to facilitate and assist in supporting the needs of his business. There seems to be a good relationship with the college administration and administrative staff.

3. What was the Quality of the Training Delivered?

The survey results in Table 25 follow Kirkpatrick's first level of training evaluation: trainees' reaction to training. Overall, it appears that the consortium trainees were positive about the training, as 66.7% rated it as excellent. The reaction to the quality of

instructor shows 83.3% provided a rating of excellent, although 16.7% rated the quality of instructor as fair.

Opened-ended questionnaire survey responses indicated that the instructor was comprehensive and relevant. Trainees offered comments such as “Instructor was thorough and would not move forward unless we were comfortable with the subject matter” and “Instructor’s ability to keep class relevant and productive was superior, all questions were answered and new ideas were presented”.

As the instructor of record for these two training programs, Carlos De La Fuente stated that he distributed college-provided textbooks, handouts of class exercises he had created, and a folder from the college that provided a blank, lined writing notebook and the business card of the program director. No syllabi or PowerPoint slides related to these classes were provided. It is of interest that trainees’ evaluation of the Quality of Instructional Materials is 50% excellent and supports one manager’s perception of the instructional material that “the employees still refer to the textbooks and one book is sitting on an employee’s workstation even two years after training”. The two other interviewees were not aware of any materials or training books that may have been distributed to their employees before, during or after training. Program syllabi for the two courses within this contract were also not available for reviewing at the college administrative office.

Table 25

Consortium: Trainees' Evaluation of Reaction to Training

	Poor %	Fair %	Good %	Excellent %
Clear Objectives	0	33.3	16.7	50
Usefulness of Topics	0	16.7	33.3	50
Length of Time on Topics	0	16.7	33.3	50
Quality of Instructional Materials	0	33.3	16.7	50
Degree Training was Customized to Company	0	16.7	16.7	66.7
Quality of Instructor	0	16.7	0	83.3
Ability of Instructors to Interest and Motivate	0	16.7	33.3	50
Degree to which the Training was the Right Level	0	16.7	33.3	50
Quality of Training Overall	0	16.7	16.7	66.7

Note. N = 6 respondents of 12 trainees

An observation at CSCC's campus training classroom of a more recent GD&T training session taught by instructor Carlos De La Fuente made clear the unique ability of the instructor to connect with his audience. For example, when Carlos introduces himself to the class, he shares his family, work and educational history in a way that seems to resonate with those in the class. The trainees related back to him as they then shared their backgrounds, company they worked for and position within the company, and their reasoning for participating in the training. Another point of interest at this observation was in Carlos's introduction protocol: he asked the trainees what they expect to get out of the training. The trainees shared various points that were important to them, such as to be a better manager, that they were new in the industry and wanted to understand the basics, and some even expressed that they were happy to be here and get out of work a little early and it was not costing them anything.

4. Did Trainees' Achieve the Learning Objectives?

The survey results as displayed in Table 26 follow Kirkpatrick's second level of training evaluation, the learning component. The quantitative survey questionnaire results show whether the employees report that they learned the content delivered. Interestingly, 75% of GD&T program participants reported they learned most or more than 60% of the skills or knowledge, while 25% of the trainees said some or less than 40% of the skills and knowledge were learned. For the Inspection training 50% of the trainees reported they learned about half of the skills and knowledge, and 50% reported that most or more than 60% of the skills and knowledge was learned. Interestingly, none of the participants expressed that everything was learned, as the college evaluations summary provided at the end of the training session reported that, overall, the training was excellent. This could simply be that after two years trainees had more to learn or that the trainees were uncomfortable giving feedback on the college's evaluation forms.

The answer to whether the trainees achieved the learning objectives of the GD&T and Inspection classes varied from the interviewees. For example, the president of the aerospace parts production company shared that, before the first training, the employees were complaining and asking why they had to participate, yet, after the second session, they loved it. He felt the employees, especially after the courses, were more connected to their products and environment due to training from CSCC. The Human Resources Manager admitted that "there was no real objective; we just provide professional development for our employees".

Table 26

Consortium: Trainees' Evaluation of Skills or Knowledge Learned

	Some (<40%)	About Half	Most (60% >)	Everything
GD&T	25%	0	75	0
Inspection	0	50	50	0

Note. N = 6 respondents of 12 trainees

5. Did Trainees Use what they Learned in Training on the Job?

The survey results in Table 27 follow Kirkpatrick's third level of training evaluation: use of skills and knowledge component. The results in Table 27 show whether the employees reported that they used the skills and knowledge learned. Results show that 75% of the trainees reported they used the skills and knowledge in GD&T once a week or more and 25% reported they used the skills and knowledge every day. The trainee results from Inspection show that 50% of the trainees used the skills and knowledge less than once a week, and 50% used the skills and knowledge once a week or more. All the interviewees felt that their employees use what they learned in training on the job. Interview responses varied from "everything they learned at the time they were working, or would be gearing up to use, has been used on the production floor" to, "of course, we wouldn't expect them not to use what they learned".

Table 27

Consortium: Use of Skills or Knowledge

	Never	< Once a week	Once a week or >	Everyday
GD&T	0	0	75	25
Inspection	0	50	50	0

Note. N = 6 respondents of 12 trainees

6. Did the Training make a Difference on Trainee Performance in their work (i.e. Improve Productivity)?

The survey results in Table 28 follow Kirkpatrick's fourth level of training evaluation: show whether the trainee/employees felt the training delivered had any impact on their productivity. The results show GD&T with a 50% major increase in trainees' evaluation on productivity and 25% of the trainees felt there was a substantial increase. Inspection results, however, show a split with trainees showing 50% small increase and 50% substantial increase of their evaluation of the training's impact on their productivity.

While there were no measuring of scrap rates, production, absenteeism or turnover for these businesses, management clearly felt the training did help the productivity of the individual and, with that, the overall benefit to their business. The Human Resources manager expressed that "there had been praises from the production supervisor, in efficiency, attitude and communication, so training must have made a difference". These benefits are revealed in the section below of secondary effects on the company.

Table 28

Consortium: Evaluation of Impact on Productivity

	No Increase %	Small Increase %	Substantial Increase %	Major Increase %
GD&T	0	25	25	50
Inspection	0	50	50	0

Note. N = 6 respondents of 12 trainees

7. Did the Training Achieve its Intended Business Goals?

All three respondents interviewed felt this training consortium was a worthwhile investment. They all expressed that, in some way, production flow increased as the

workers use their newfound knowledge more efficiently. Two of the businesses participated in site-specific training as well, and their representatives felt that consortium and site-specific training met different needs. It appears that, dependent upon the training available, production schedule, product, or whether there are more than 10 employees to be trained are all deciding factors in the training model chosen. Both modalities were important and effective, confirming that the circumstance of the time dictates the training protocol, objectives.

8. *Were there Secondary Effects on the Company in Terms of Improved Motivation, better Relations between Managers and Workers and/or Other Organizational Changes?*

An interview response from a company president detailed a secondary effect in terms of training being beneficial for employees; confidence was not only evident in the employees' newly learned knowledge, but also in the customers' responses to how the newly trained employees handled a situation. He shared, "employees are more confident. They are better able to discuss problems with customers. When you speak from a point of knowledge, you can demonstrate and understand the changes better than the customers. Then, you win the argument."

Another point of secondary effects was that the trained employees were better equipped to help train others, "so it flows down and now they are the experts. It has opened the doors of communication among workers," shared the production manager. The human resources manager stated that since the training "one of their employees' job position requirements changed and he was able to advance the employee to a specialized machinist's position, likely due to the training and the company merge".

The survey results displayed in Table 29 show whether the training delivered had any impact on trainee/employees' feelings about the company after training: unintended benefits. It seems that, overall, trainee's evaluation of the unintended benefits of training is positive. Although there were only 6 respondents, at a 50% response rate, results show 80% agree that communication is better with supervisors, 100% agree that relations with coworkers are better, and 83.3% reported that they as workers are treated with more respect. Results also show that 33.3% strongly agree that they are more motivated and involved at work, more optimistic about their future with the company, and are more positive about the company.

Table 29

Consortium: Trainees' Evaluation of Unintended Benefits of Training

	% Strongly Disagree	% Disagree	% Agree	% Strongly Agree
Communication is better with supervisors	0	20	80	0
Less stress on job since what I learned	0	33.3	66.7	0
Workers are treated with more respect	0	16.7	83.3	0
Relations with coworkers are better	0		100	0
More motivated and involved at work	0		66.7	33.3
More optimistic about my future with the company	0	16.7	50	33.3
More positive about the company	0	16.7	50	33.3

Note. N = 6 respondents of 12 trainees

9. *What can CSCC do to improve the Delivery and Overall Process of the ETP Training Program?*

An important issue one site noted was that CSCC may not have enough people for a class, so availability to secure any particular training can be difficult. The company president shared that the previous college director had been out in the industrial park,

walking door to door in neighboring businesses to drum up a team who may be interested in a blueprint reading training session. He stated that "a large number of businesses in the area need these services, especially blueprint reading" and he added, "I was willing to let this classes be taught right here, in the industrial park, yet there still wasn't enough interest at the time. I often share with other business owners the importance and benefits of the ETP CSCC training program".

Trainee open-ended questionnaire survey response comments about the training experience were mostly positive, thankful, and "ready to take another class". One exception was "I feel the training could have been more effective with multiple work stations, having more blueprints and tools to work with to allow more hands on training" and "please tell people attending to stay off their cell phones".

Consortium Conclusion

Consortium training is provided at the campus site, yet, according to the program director and Carlos the instructor, there are training models that can provide a laboratory setting compatible to a trainees work space. In this consortium case study, trainees were encouraged to bring in items they use from work, such as blueprints and measuring calipers.

An important finding after speaking with the CSCC Program Director, James, regarding lack of available syllabi, core curriculum, PowerPoints and class assignment worksheets in this contract is that, primarily, the instructors are part-time and contracted for their specialty and subject matter experts. They are employees of the college, yet they retain the rights to their curriculum as are considered and have been hired as independent contractors, as hourly and seasonal employees. While instructors often supply their own

materials, the college can and do ask instructors to change materials or delivery. The college is ultimately responsible for the quality of the classroom or laboratory experience. The main way that the college can ensure quality is through the selection, vetting and monitoring of the instructors.

In addition, an issue often faced with consortiums and broad basic skills training programing is that the current knowledge of the class population is not consistent. Some participants may have moderate skill level in the entire spectrum and others may be quite skilled in one area and completely new in others. One of the objectives in putting a large group through a broad-based program is to bring them to a uniform standardized level of skill. Accordingly, some less than positive views of training are an expected consequence of this approach.

Summary of Findings

In terms of site-specific results, Table 30 provides an overview of the sites, number of employees, interview participants and the company basics.

Table 30

Research Sites Business Overview

Site	Years	# Employed	Trainee/ Respondents	Interview	Company
A	40	200	16/16	Production Manager	Family Business
B	115	350	12/6	Vice President of Production	Privately Owned
C	60	189	35/25	Human Resource Manager	Subsidiary of Large Corp.
D	40-50	50-80	12/6	Office Manager/HR Director/President	Various

Survey results show perception of the training was significantly different. At Site A, respondents very much liked the instructor but were dissatisfied with the length of

time spent on topics. Only one quarter of respondents rated time on topic as "excellent." At Site B, reaction to the training itself was also positive (50% rated it as "excellent,") but the instructor received a less favorable rating. In terms of motivating and increasing interest in the topics covered, respondents provided only a 16.7% "excellent" rating. At Site C, trainee satisfaction was evident in that 64% rated it as "good" and 8% rated it as "excellent." The respondents at Site C were also less inclined to rate the instructor highly, perhaps due to the fact that this site utilized four different instructors. When asked about the quality of the instructor, 40% of respondents viewed it as "good." Consortium trainees provided the highest rating of the training, as 66.7% rated it as excellent. In terms of instructor ratings, 83.3% provided a rating of "excellent" and 16.7% selected "fair." One of the aspects of consortium classes is that there is a higher level of "self-selection" among the participants. Many of these participants took the initiative to get permission to attend the program, which should result in both better performance and higher satisfaction.

Site A kept records on rejection and noncompliance reports on employee productivity. This was their first time using ETP-funded, on-site training. Historically, Site A had provided employees consortium training at CSCC. Site B did not have specific documented outcomes, yet leaders were confident that the training was effective. This was also Site B's first time affiliated with ETP on-site training. Site C administration was minimally involved in the training, and provided no real performance evidence. They had utilized ETP funding for on-site training from another community college in the past along with other commercial-type training programs. Six consortium

respondent interviews expressed that the training was substantial and important to the businesses involved.

Conclusion

This chapter provides the results from the document analysis, interviews with a vice president of production, site production and human resource manager and a company president, observations, and trainee surveys. The following chapter provides discussions and recommendations for employers and higher education practitioners.

CHAPTER V: DISCUSSION AND CONCLUSIONS

This chapter presents an interpretation and discussion of the findings in light of the study's research questions, literature review, and conceptual framework and a benchmarking of the results to previous research by Moore et al. (2003). The chapter concludes with recommendations for policy and practice. The purpose of this retrospective, mixed-methods case study was to examine the effectiveness of CSCC's ETP incumbent worker job training program. This chapter presents an overview of the study and summary of the major findings that address the research questions. This chapter also provides discussion on (a) integration of the findings with previous research, (b) implications for ETP policy, (c) implications for practice, (d) recommendations for future research, and (e) final conclusions.

Overview of the Study

Factors that influence CSCC's job training program are as diverse as the businesses they serve. The program is also influenced by the college's administration and its current and historical practices. This study intended to identify major strategies and characteristics of CSCC's ETP program, assess its relative strengths and challenges, identify factors that promote and enhance its effectiveness, and to identify administrative and other types of barriers to effectiveness. To accomplish this, four cases studies were conducted to address nine research questions:

Each case study sought to answer the following research questions:

1. What was the company's purpose for the training and the specific business issue training addressed?
2. How was the training designed and by whom?
3. What was the quality of the training delivered?
4. Did trainees achieve the established learning objectives?
5. Did trainees use what they learned in training while on the job?
6. Did the training make a difference on trainee performance in their work (i.e., improve productivity)?
7. Did the training achieve its intended business goals?
8. Were there secondary effects on the company in terms of improved motivation, better relations between managers and workers, and/or other organizational changes?
9. What can CSCC do to improve the delivery and overall process of the ETP training program?

Summary of Major Findings

The following tables summarize the findings according to the research questions. Overall, although only one site had data on improved productivity, the data gathered from trainees and management indicates training programs were mostly successful in allowing trainees to the gain the skills needed at their work sites. Most respondents felt positively about the quality of instruction, felt the learning objectives were met, and stated trainees emerged with more positive feelings about their employers.

The information in Table 31 shows varied answers to research question 1, "What was the company's purpose for training and the specific business issue training addressed?" Each site had a different purpose and specific business issue which the training addressed. Site A chose training during its rapid growth phase, which can be a difficult juncture to manage because it is the time when a company goes through the greatest amount of personnel, operational, and management changes. Providing introductory, generic training which could be modified to their business was essential. Site A appeared to bring the employees in line with the larger vision of the company and industry. The training was provided to fill the gaps in trainees' functional expertise and experience and to develop their capabilities so they, too, could grow with the company. Site B's purpose for training came from corporate management. It was an initiative to scale up operations necessary to support growth. Site C's training purpose was to train and manage many new people on the production floor. While doing so, they also strengthened areas like their customer service and lower management team's skills. The businesses within the consortium had assorted reasons for training and specific business issues which needed addressing. Previous research by Moore et al. (2003) presented varied and numerous purposes for training and specific business issues which training addressed, as presented in Table 31. A comparison is difficult, as the Moore et al. (2003) study captures a wide variation of projects dating to 1995 through 1996.

Table 31

Findings Research Question 1: Business Training Purpose

Site	Current Study	Moore et al. (2003)
A	Company went through a rapid growth period. There was a need to provide introductory training to a large influx of employees. Looking for generic training which could be partially customized.	Overall response was to establish high performance workplaces, some businesses trained in vocational English as a second language, statistical process control, manufacturing resource planning and management skills. Captured a wide variation of projects and purposes which trained incumbent workers; some for quality certification, to increase communication, make a visible improvement in the business processes, improve customer service, etc.
B	Out of state corporate offices wanted to implement new initiatives in Lean Manufacturing.	
C	Training for employees in entry level positions and refresher courses for customer service skills.	
Consortium	Varied responses: one sought state funded assistance to offset training costs; to allow employees to select their own training; too few employees for in-house training.	

Note. Moore et al. (2003), research cases were representative of projects that ended during the 1995-1996 fiscal year. A purposeful sample that was designed to capture the wide variation of ETP projects, consortiums, training agency and single company projects. A state wide study assembling both service and manufacturing sectors.
Source: Moore, R.W., Blake, D.R., Phillips, G.M., McConaughy, D. 2003. *Training That Works: Lessons from California's Employment Training Panel Program*

The information in Table 32 presents the answers to research question 2, "How was the training designed and by whom?" Site A's production controller collaborated with the college program director and the instructor to design training for mostly newer employees. Site B had a specific training requirement preset by the corporate offices for Lean Manufacturing courses, which were delivered through the college. The particular training was Value Stream Mapping and Lean Time Studies and Production Leveling with a focus on 5-S practices, as defined in Chapter 4. Site C did not get customized training but used the college's Manufacturing Fundamentals standard training outline and Basic Skills Outline for customer service and business writing training. The instructor of

the training was able to adapt the college outline toward a curriculum to fit the business. The consortium operated primarily by providing coursework in fundamentals of manufacturing skills.

Moore et al.'s (2003) findings in answer to how the training was designed present no specific design team component, yet express that in very successful projects, "management worked hard to design customize, high quality training" with a follow-up of carefully planned implementation" (p. 75). Equally, partnerships among employers, training providers and industry associations help the training design to be best effective.

Table 32

Findings Research Question 2: Training Design

Site	CSCC	Moore et al. (2003)
A	Business collaborate with college program director and contracted instructor	Successful projects management assisted in design. Partially successful projects hired consultants to design and deliver training. Unsuccessful projects combined in-house and contracted trainers.
B	Preliminary courses enhanced by contracted instructor's observation of site	
C	Existing college courses and or contracted instructor-designed courses in the fundamentals of manufacturing and customer service skills	
Consortium	Preliminary coursework in fundamentals of manufacturing skills	

Note. Moore et al. (2003), research cases were representative of projects that had training models different than current ETP criteria.
Source: Moore, R.W., Blake, D.R., Phillips, G.M., McConaughy, D. 2003. *Training That Works: Lessons from California's Employment Training Panel Program*

Results from the third research question, quality of training is shown in the information on Table 33. On a 4-point scale, it is evident that, overall, trainees' perceptions of the quality of training, was good or better in both the current study, with a mean of 3.18, and previous research with a mean of 3.14. Of interest is that, trainees

evaluate customized training as average, slightly more customized than the larger statewide sample. A combined average of all quality of training topics of the CCSC study compared to the combined average of the statewide study present a mean of 3.12 and 3.07 respectively.

As discussed earlier within ETP program guidelines, the on-the-job training model was previously called SOST. However, given issues identified through Moore et al. (2002) and intrinsic difficulties in administering SOST, ETP placed a freeze on SOST. The SOST model is included in Moore et al.'s (2003) findings in Table 33 on Effectiveness of On-Site Training which may account for the 2.89 average rating. Customization, which is a key component in ETP programs, for the current research presents a mean of 3.0 rating of good, slightly higher than the mean of 2.93, a fair to good rating in the Moore et al.'s (2003) study. Practices have changed in the ETP programing inclusive of training models, implementation and delivery modes.

Table 33

Findings Research Question 3: Quality of Training

Topic	CSCC M	Moore et al. (2003)[a] M
Clear Objectives	3.18	3.25
Usefulness of Topics	3.15	3.05
Length of Time on Topics	2.96	2.84
Quality of Instructional Materials	3.13	3.14
Degree Training was Customized to Company	3.01	2.93
Quality of Instructor	3.33	3.31
Effectiveness of On-Site Training	3.03	2.89[b]
Ability of Instructor to Interest and Motivate	3.13	3.14
Degree to which the Training was the Right Level	3.05	2.96
Quality of Training Overall	3.18	3.14
Combined Average	3.12	3.07

Note. Scale is 1-4. Average rating 1=Poor, 2=Fair, 3=Good, 4=Excellent
[a]*Note.* This table shows the overall mean across many types of training.
[b]*Note.* Onsite training defined differently in previous research.
Source: Moore, R.W., Blake, D.R., Phillips, G.M., McConaughy, D. 2003. *Training That Works: Lessons from California's Employment Training Panel Program*

The information in Table 34 shows the answer to research question 4, "Did the trainees learn the skills and knowledge?" The results vary substantially by site and topic. For example, trainees in Hydraulics reported mastering a larger proportion of what was taught as compared to trainees who took Inspection or Business Writing. Trainee respondents who took Inspection at Site A reported 68.8% they learned most (60%>) or everything was proportionally higher than Inspection at the Consortium with a 50% rating reporting they learned most (60%>) or everything. A factor here is that support from all levels of management at Site A was strong.

The previous research shows that the overall training was effective, with over two-thirds of the trainees reporting they were able to learn most (60%>) or everything taught. This is an overall rating as the training programs, as well as, the topics covered of the previous research differ. Findings pertaining to whether the trainees achieved the

established learning objectives benchmarked to the previous statewide research on California's Employment Training panel program by Moore et al. (2003), results show trainees in most courses at CSCC report learning more of the material than do trainees in the benchmark survey. A combined overall average of the skills or knowledge learned in CSCC training was 72% of trainees reporting they learned most or everything compared to the statewide study results reporting 68.5%. Interestingly, there was no clear evidence through documentation, interviews or surveys of established training objectives for CSCC programs, as well as, no pre- or post-skills testing for trainees enrolled in the training programs at CSCC or the previous research.

Table 34

Findings Research Question 4: Established Learning Objectives Achieved

Site	Topic	CSCC %	Moore et al. (2003)[a] %
A	Blue Print Reading	87.5%	68.5%
	Shop Math	87.5%	68.5%
	GD&T	81.3%	68.5%
	Inspection	68.8%	68.5%
B	Value Stream Mapping	66.7%	68.5%
	Time Studies and Production Leveling	83.3%	68.5%
C	Blue Print Reading	62.6	68.5%
	Hydraulics	88.9	68.5%
	Business Writing	42.9	68.5%
	Professional Development	71.4	68.5%
Consortium	GD&T	75%	68.5%
	Inspection	50%	68.5%
Overall Average		72%	68.5%

Note. % of trainees reporting they learned most (60%>) or everything
[a]*Note.* Training programs differ in previous research.
[b]*Note*. Benchmarked against statewide study Moore et al. (2003). This table shows the average percentage across many types of training.
Source: Moore, R.W., Blake, D.R., Phillips, G.M., McConaughy, D. 2003. *Training That Works: Lessons from California's Employment Training Panel Program*

Research question 5 examined if trainees used the skills they learned in training on the job. The information in Table 35 presents the percentage of trainees who said they used the skills learned at least once a week or daily benchmarked against Moore et al.'s (2004) statewide study results of overall training programs at 76.7%. In comparison, CSCC's overall average is slightly higher, at 81.2% of trainees reporting they used the skills or knowledge once a week or more. Of interest is the GD&T training at Site A, where trainees report a 62.5% use of skills and the Consortium GD&T trainees report 100% use of skills learned. Also, both of the training programs at Site B reported that 100% of the trainees use the skills or knowledge once a week or more as compared to the statewide study average of 76.7%.

As presented in Chapter 4, each site's management and trainees had different reactions to whether the trainees use what they learned in training on the job, yet their conclusions were positive. Management at Site A and Site B had participated in training provided by the college. The former, a production controller, had previously been in a manufacturing skills consortium, and he expressed that the training received had helped him move up the ranks within the company. The latter took part in the onsite training, and she reported increased efficiency in the production line, which saved time in the assembly kitting area. It appears that trainees who received higher levels of support from their managers transferred and used the skills learned to the workplace more readily. According to Moore et al.'s (2004) statewide study, "one reason skills are not used after training is lack of management action to ensure that reinforcing practices are in place when trainees return to the job" (p. 108). In the statewide study skills used more often,

including skills directly related to improving production fared better than skills which were more technical.

Managers who use the skills themselves set a good example, which encourages trainees to use the skills as well. Clearly, managers knowing the characteristics of the trainees and their work style, and being engaged in the training will assist in determining if the knowledge has been acquired and is likely to transfer. Management at Site C and at the consortium provided no hard evidence of use of skills learned and except for administrative purposes, neither was a contributor or participant in the training. Across all sites at CSCC trainees reported using the skills learned at least once a week or more. Similarly, Moore et al.'s (2004) statewide study states that "almost all the trainees, 95 percent, report using the skills they learned in training at least occasionally" (p. 107).

Table 35

Findings Research Question 5: Use of Skills Learned on the Job

Site	Topic	CSCC %	Moore et al. (2003)[ab] %
A	Blue Print Reading	93.8%	76.7%
	Shop Math	93.8%	76.7%
	GD&T	62.5%	76.7%
	Inspection	75%	76.7%
B	Value Stream Mapping	100%	76.7%
	Time Studies and Production Leveling	100%	76.7%
C	Blue Print Reading	81.3%	76.7%
	Hydraulics	88.9%	76.7%
	Business Writing	42.9%	76.7%
	Professional Development	85.8%	76.7%
Consortium	GD&T	100%	76.7%
	Inspection	50%	76.7%
Average		81.2%	76.7%

Note. % of trainees reporting they used the skills or knowledge once a week or more.
[a]*Note.* Training programs differ in previous research
[b]*Note*. Benchmarked against statewide study Moore et al. (2004). This table shows an average percentage across many types of training.
Source: Moore, R.W., Blake, D.R., Phillips, G.M., McConaughy, D. 2003. *Training That Works: Lessons from California's Employment Training Panel Program*

The information in Table 36 presents data pertaining to research question 6, "Did the Training Make a Difference on Trainee Performance in their Work (i.e., improve productivity)?" Moore et al.'s (2004) statewide study serves as a benchmark where 67.1% of trainees reported a substantial or major improvement in performance due to training, the current study reports higher results for most courses and lower for several. An overall average of CSCC's 12 training topics result in of the trainees reporting 71% of trainees reporting substantial or major improvement in productivity, slightly larger than the previous statewide study of 67.1%.

Each site's management and trainees as presented in Chapter 4, had different reactions to whether the training made a difference on trainee performance in their work (i.e., improved productivity), yet the conclusions from the viewpoint of management and

trainee were positive. Management at Site A, Site B and the consortium communicated encouraging, specific feedback of the training making a difference in the trainees' work, while Site C assumed the training made a difference. Comparable to the business manager's interview results from the CSCC study, the statewide study provides interview data as well, "when we asked the trainees and managers about the impact of training, they first talked about its qualitative impact, rather than scrape rates or productivity" (Moore et al., 2004, p. 110).

Table 36

Findings Research Question 6: Impact on Productivity

Site	Topic	CSCC %	Moore et al. (2003)[ab] %
A	Blue Print Reading	68.8%	67.1%
	Shop Math	75.5%	67.1%
	GD&T	65%	67.1%
	Inspection	72.2%	67.1%
B	Value Stream Mapping	66.7%	67.1%
	Time Studies and Production Leveling	85.7%	67.1%
C	Blue Print Reading	68.8%	67.1%
	Hydraulics	66.6%	67.1%
	Business Writing	71.4%	67.1%
	Professional Development	85.8%	67.1%
Consortium	GD&T	75%	67.1%
	Inspection	50%	67.1%
Overall Average		71%	67.1%

Note. % of trainees reporting substantial or major improvement in productivity
[a]*Note.* Onsite training defined differently in previous research. This table shows an overall average across many types of training.
[b]*Note*. Benchmarked against statewide study Moore et al. (2004)
Source: Moore, R.W., Blake, D.R., Phillips, G.M., McConaughy, D. 2003. *Training That Works: Lessons from California's Employment Training Panel Program*

The information in Table 37 relates to research question 7, "Did the training achieve its intended business goals?" Each site's management agreed that the ETP training achieved its intended business training goals. Of interest is the lack of

documented business training goals within the college's contract to the business. Subsequently, the companies had goals but did not take steps to measure if the training achieved these goals. Most sites could not offer any empirical evidence that productivity increased. Therefore, the goals of the training program should relate directly to the needs of the business, and businesses should have a clearly defined strategy and set of documented objectives that guide and drive all the training decisions made. Many managers prefer to keep information to themselves, but keeping strategic training information from the training providers, in this case the college and the instructor, can limit the success of training. Transparency of the practices and goals of the business and the training is crucial for all constituents in the training processes. Although prior research did not provide business management interview evidence of business goal achievement, Moore et al.'s (2004) statewide study states that "the type of contract affects the potential impact and effectiveness of ETP training" (p. 117).

Table 37

Findings Research Question 7: Business Goals Achieved

Site	Interview Response
A	The Production Manager stated, "I believe the training did accomplish its goals."
B	The Production Controller expressed immediately "yes absolutely"
C	Yes
Consortium	All interviewees stated production flow increased as the workers use their newfound knowledge more efficiently.

The information in Table 38 represents the findings in regard to research question 8 on secondary effects on the company from the perspective of the trainee and uses as a point of reference the previous research of Moore et al. (2004). Secondary effects may include better communication, less employee turnover or lower rates of absenteeism. The

overall average mean of the CSCC trainees reveals 3.09, slightly less in unintended benefits than do trainees in the statewide study, with the overall averaged mean of 3.51. This may be due to the fact that secondary effects are not usually measured by either the college or business. In this study, as provided in Chapter 4, each site's management and trainees had different reactions to whether there were secondary effects on the company in terms of improved motivation, better relations between managers and workers, and/or other organizational changes, yet the conclusions from the viewpoint of management interviews and trainee surveys were positive, encouraging and constructive. The statewide study reports secondary effects as "improvements in communication, motivation, or stress reduction" (Moore et al., 2004, p. 110).

Table 38

Findings Research Question 8: *Unintended Benefits*

Topic	Current M	Moore et al. (2003) [ab] M
Communication is better with supervisors	3.21	3.64
Less stress on job since what I learned	2.85	3.46
Workers are treated with more respect	2.85	3.17
Relations with coworkers are better	3.10	3.42
More motivated and involved at work	3.24	3.71
More optimistic about my future with the company	3.17	3.52
More positive about the company	3.19	3.69
Combined Averages	3.09	3.51

Note. Scale is 1-4. Average rating 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree
[a]*Note.* This table shows an overall mean across many types of training.
[b]*Note*. Onsite training defined differently in previous research as well as population
Source: Moore, R.W., Blake, D.R., Phillips, G.M., McConaughy, D. 2003. *Training That Works: Lessons from California's Employment Training Panel Program*

The information in Table 39 presents data relating to research question 9 "What can CSCC do to improve the delivery and overall process of the ETP training program?" Each site's management had different reactions to what CSCC can do to improve the delivery and overall process of the ETP training program, yet the conclusions from the

viewpoint of management and trainee were practical and constructive. Feedback from the business managers, human resource director and company president, reported the overall delivery and process of the training program would be improved with individual worker assessments, sharing evaluation summaries with company management, additional marketing development, providing more classroom training materials and creation of a training awards ceremony. Most trainee respondents stated that they would not change a thing and some had a provided other insight into how to improve the programs. For example trainees suggested, providing more materials, less classroom hours with more hands on training, and simply offering more training. The previous study by Moore et al. (2004), does not report feedback from managers or trainees on improvement of the ETP training yet identifies two critical components to training effectiveness: quality of training (design and delivery) and management reinforcement of training.

Table 39

Findings Research Question 9: Suggested Improvements

Site	Response
A	Production Manager suggested prescreening for level of knowledge, ongoing training, and separating trainees by learning pace. Trainee participant survey responses about the training experience were mostly positive
B	Production Controller suggested better publicity of the program, analyzing the needs of businesses, and providing more training materials.
C	HR Manager interview along with some trainee survey responses, suggested shortening the hours requirements.
Consortium	The company president suggested increased recruitment to other businesses for the training sessions. Trainees suggested multiple work stations and more hands-on training.

The collected evidence suggests, overall, that CSCC's program facilitated training that allows businesses and trainees flexibility in scheduling and access to training. Findings are comparable to the research results of Moore et al. (2004), where clearly defined objectives, instructor effectiveness, usefulness of topics, and instructors' keeping trainees interested and motivated are decidedly positive. Also, similar to Moore et al. (2004), there is meaningful positive feedback from managers for trainees on worker productivity, problem solving abilities along with improved communication and job satisfaction for ETP funded training.

This study provides evidence that trainees are using what they learned in training on the job. While each training program, including the consortium when possible, used actual company experiences and issues as learning points, which makes training familiar and relevant, the training was not customized. All CSCC training programs are highly interactive and utilize action learning in that trainees practice skills in a lab setting so that they are better equipped to transfer them to the job. Trainees are eager to learn and are appreciative of the experience. One of the key components in both the perception of the training and how effective it is back on the job is support from senior management. The present study provides further evidence that ETP is working; incumbent worker training is positively associated with staying employed. For example, for the business, there are fewer employee turnovers, as trainees in ETP training tend to stay employed.

Analysis of Sites

Analysis of the data revealed that, in terms of achieving the desired training goals, some sites were more successful than others. Site A was the most successful. Leadership was very interested, willing and forthcoming in taking part in the evaluation. This site

had CEO and management buy-in and the production manager's (direct report) involvement and prior program participation at the CSCC training proved beneficial as he was happy with the training he was provided, and had actually been promoted to his current position. Site A has some of the higher ratings for learning what was taught. Site A also tracked production errors and provided scrap rate data and non-compliance reports for trainees enrolled in the training along with rejection reports for employees not enrolled in the training, which showed that training was relevant. By taking all the training together, Site A's 16 participants trained as a cohort. At the time of this research, the 16 trainee participants were still employed at Site A, which makes for 100% retention rate after 2 years.

To achieve this success, management buy-in was key. Also important was the higher level of communication among direct reports, such as production managers, workers and management. The businesses connectedness with the college and its reputation, ease of accessibility to college administration, staff and instructors made for a smooth working relationship, along with the reliability of the college administering the ETP paperwork. These findings are in line with the research regarding training. Moore et al. (2004) found that success is a result of the employer's investment in training, the identification and definition of training needs, and management's commitment to the training. Site A had used the consortium training program at CSCC prior to this on site contract, had a requirement of specific training and sought particular instructor for their needs; one whom middle management was accustomed to.

Site B, with only six survey participants, was the second most successful in terms of retention. Evidence points to their out-of-state corporate office new initiatives,

wanting to comply with changing industry standards. While not as accessible to collect data as Site A, upper and mid-management buy-in was apparent. The production controller participated in training both in classroom and in lab hours on production floor. In addition, employees at Site B had been with the company the longest, at an average of 9 years and 4 months. At the time of this research 8 of the original 12 trainee were employed by Site B, representing a 66% retention rate over 2 years.

Site C had previously participated in ETP training through another community college Multiple Employer Contractor (MEC) with whom they were disappointed. They sought out CSCC as an alternative for their training needs. Although successful from the Human Resource Manager's perspective, there was no opportunity to contact the Operations or Engineering Directors. Interestingly, this site received some of the lower ratings from the trainees. A point which the HR Manager brought up was that measuring these types of classes for performance is not a matter of high importance, as the classes are provided to give the employees a broader sense of what they are doing versus being specific to their jobs. For that reason these training programs are not tied to specific measurable outcomes. At the time of the research, 27 of the original 35 trainees were still employed at the Site, presenting over 77% employee retention over 2 years. Site C trained employees who had been at the company on average of 3 years and 2 months.

Although the consortium did provide feedback from business management, which was positive, there were only 6 original participants from two consortiums. The greatest difficulty came in tracking from the wider pool of participants. Also, as trainees weren't always paid, and, in essence, volunteered for training, a higher rate of self-selection among the participants meant that many took initiative to seek and get permission to

attend training. Consequently, better performance and higher satisfactions rates are reported. Likewise, the company's willingness to invest in training was an important influence in training satisfaction. The consortium had a mixed number of workers who were on and off the clock, depending upon their work shift and the scheduled class.

Limitations and Delimitations

This retrospective study had various limitations. Information gathered from participants was limited to their memory, especially in cases where there were multiple training programs. Following the contract period, recollection of specific programs was difficult for the business administrators and trainees. Not everyone who began training completed it, and not all trainees participated in the study. Document analysis of websites found changes, updates, and modifications between the onset and end of the contract. ETP had modified terminology. The CSCC campus also underwent administrative changes when a new Dean was appointed after the start of the ETP contract.

In addition, generalization from "limited number of cases, in addition to review of historical and future analysis" on the business and college dynamics is problematic (Gummerson, 1991, p. 74). The researcher recognizes that the data is not a random sample.

A limitation of the study is the difficulty in comparing training programs, as most are industry- and business-specific and require different training programs. Subsequently, the study was delimited to four separate case studies, as results may not be applicable to all four sites as training objectives and business principles vary. The data collected through survey questionnaires was based on the population of trainees who remained

with the companies up until the research. While some of the companies in the consortium were cooperative and helpful in allowing a visit and participation, the employee trainees were either not still employed there or were hard to pin down for responses. Another aspect of consortium classes is that there is a higher level of "self-selection" among the participants. Many of these participants took the initiative to get permission to attend the program, which should result in both better performance and higher satisfaction.

For all sites, there was incomplete data from the business and the college, as most companies did not measure outcomes. The few program evaluations from the college, which were distributed by the instructors at the end of the training, were incomplete and all had perfect scores. In addition, the collected data point to inconsistencies in the outcomes of CSCC's training programs. In particular, a lack of control over curriculum and in-house instructors makes evaluation difficult. The college is ultimately responsible for the quality of the classroom or laboratory experience, and the main way that the college can ensure quality is through the selection, vetting and monitoring of the instructors. The project descriptions do not include pre-training, training, and post-training deliverables. These are key to designing evaluation methods to assess the effectiveness of the training provided.

Recommendations and Implications for Policy and Practice

From this research, several recommendations and implications concerning ETP, CSCC and employers are evident. They are presented below in two sections: policy recommendations for the California Employment Training Panel and recommendations

for practitioners, including the Creek Side Community College and participating area businesses

Employment Training Panel

Implementing ETP through the multiple employer contracts (MEC), such as at the community college, is an effective means for training employees. This research found businesses are happy with the training outcomes. In particular, the participants noted the convenience of the training location and the assistance provided by the CSCC staff. Also noteworthy was the partial state funding provided, which offset costs of job skills training. Based on the results of this research, I recommend three policies that ETP can adopt to improve their success. These can began as a pilot study at randomly selected community college, MEC's together or individually.

Recommendations

1. Three recommendations for ETP arise from the results. ETP should provide a standard evaluation protocol to measure the effectiveness of incumbent worker training. ETP currently provides an accountability measure to MECs to ensure ETP's goal of job creation and retention is met. Yet, this study found no objective method to measure the effectiveness of training for incumbent workers currently in place. Businesses have to demonstrate that trainees remained employed for ninety days post-training. While this demonstration supports ETP's underlying goal of job retention, this requirement does not accurately assess the effectiveness of the program on the businesses or the increase, if any, of employees' skills. At a minimum, an evaluation protocol should

include trainees' perceptions of effectiveness of training. The previous study by Moore et al. (2004) suggested an anonymous standard evaluation questionnaire, and this study used a modified version of the questionnaire from that study. I recommend ETP continue use of the current study's evaluation questionnaire. This questionnaire includes questions relating to Kirkpatrick's four levels of evaluation. A better evaluation of training programs would use the four levels to collect data meaningful to both measurement of program outcomes and business goals, such as changes in productivity or improvements in quality.

2. Applicants for ETP funding should conduct training needs assessment or an audit provision prior to training. This recommendation is consistent with that of Moore et al. (2004) in that clear learning objectives should be completely designed prior to training. In conducting a needs assessment, a clearer training objective should be laid out and followed through to achieve the desired training outcome. ETP could provide the MECs a template for needs assessment that can be modified for individual businesses and their employees. In addition, ETP should focus on industry needs and standards in general when creating these templates for the MEC's to help ensure the focus is on job creation and trainees' career mobility. In terms of individual trainees, ETP should include pre-assessment needs templates of the trainees' abilities, as some respondents in this study expressed a disparity in knowledge and ability levels among employees.

1. ETP should require businesses to release more information regarding training impact on employees, such as data on absenteeism, rejection or non-compliance

productivity reports and business financial reports. A contractual requirement require companies to track scrap rates, product non-compliance and productivity reports along with following employee turnover and absentee reports prior to, during and post training, to the degree they relate to the objectives of training. The information provided should be linked to the previously recommended training needs assessment questionnaire. Besides a questionnaire, ETP needs before-training and after-training data on employees, such as absenteeism, retention, quality and efficiency numbers to fully evaluate the impact of training on employee performance and career growth. If in fact, training is not improving employee performance or career growth ETP should direct business participants to investigate other resources available. While businesses may resist revealing data, it is very important for both parties in order to track the impact of training on targeted business metrics. In this study, only one site provided information on impact of training regarding productivity compliance reports. Missing from all the businesses in this study, except for Site A, was the indication that the business was measuring the value of training.

Creek Side Community College

Based on the results of this research, I recommend five policies that CSCC can adopt to improve their success in ETP funded training. These recommendations pertain to the areas of evaluation, a focus on business and industry needs, and curriculum ownership. Whether or not ETP changes its practices, CSCC would benefit from the from four specific practices: a systematic needs assessment prior to training; method to

measure the impact of training on the business, development of curriculum owned by the college, and develop alternative on-ne methods for developing curriculum.

Recommendations

1. Prior to contract negotiation, CSCC should provide a needs assessment protocol for the businesses in form of a questionnaire regarding its goals in terms of training and employee outcomes. At present, CSCC has little to no clear documentation on the objectives of the businesses to guide the design of the training. Therefore, effectiveness of training is problematic to measure.
2. Post-training, objective evidence as to CSCC's training effectiveness is essential. As part of the mission of community colleges is to advance economic growth in California, CSCC should demonstrate the effectiveness of the programs. CSCC's current evaluation method of a five question survey provided by the instructor at the end of training does not gather sufficient data to access the quality and impact of training. This study and previous research used Kirkpatrick's (2006) model to design an instrument to evaluate training programs, and CSCC would be well served to use this research's evaluation instruments as well. Utilizing the current study's questionnaires and surveys as a follow-up instrument which uses four of Kirkpatrick's levels of evaluation to collect data from trainees will better inform CSCC as to the impact of training. It is important to assess whether trainees like and value the training, learn from it, use it, and whether it leads to increased productivity. This assessment may involve surveying of trainees regarding the effectiveness of the training program. These surveys should be conducted after 90 days outside of the training environment and be in electronic format to ensure

instructor presence is not an influence on trainees' survey responses. In addition, management should also be surveyed as part of the process of collecting outcomes data. Although more costly, for the least amount of bias, data collection and analysis could also be conducted by an outside consultant.

3. The development of a curriculum which can be customized to individual businesses, to the extent possible, is highly advised. This recommendation is made in light of the fact that CSCC has no consistent description or design for customized training, and each training project is designed by a contractor, to fit the unique needs of the business customer. Customization as noted by Moore et al. (2003) occurs on three levels: planning as to the level at which a topic needs to be adjusted to the level of the trainees, customized to the processes used by the company, and training needs to be in tune with the company's culture. Toward this end, CSCC must develop their own curriculum to address current and emerging skills gaps. Given changes in industry needs, new technology, and the community college system's commitment to economic development initiatives, it is important that training delivery and content remains current and flexible. CSCC must create a database for curriculum and retain ownership of the same. They must also maintain a library for the materials they provide, including items such as PowerPoints and work/study documents. This is to ensure continuity, institutional memory, and further development of their training programs.
4. Currently, CSCC provides training through a network of casual employees who are not regular faculty. Often these hourly contract employees own the curriculum they use in training and hence that curriculum does not belong to the

college, If CSCC developed curriculum or paid contractors to develop curriculum they would develop a body of curricula which would be an asset and support future contracts. In keeping with curriculum design, CSCC should also expand training delivery options. For example, CSCC should use ETPs electronic training delivery system to expand training capability. Distance learning models in basic and advanced skills in manufacturing, customer service, and professional development programs should be investigated. ETP electronic delivery models should be realized and executed through a pilot program at CSCC.

Area Businesses

Based on the results of this research, there are two recommendations that businesses can adopt to improve their success of training their employees through CSCC's program. These recommendations pertain to the areas of management involvement and employee buy-in.

Recommendations

1. Managers and supervisors should actively participate in the training programs from the design process through implementation and evaluation. Whether for their own training or to support the employees, the involvement of management personnel is essential to positive training outcomes. For example, at Site B, workers were more satisfied with the training than were trainees at the other sites. The production controller at Site B actively participated in the design and training, both in the classroom and during lab time. In addition, at Site A, management frequently showed up at training and inquired as to progress. At Site A, trainees also rated the program more favorably. These results may be

attributable to the fact that management participated in the training program. In previous research, there was no evidence of management participation. Therefore, it is imperative to take a closer look at the possible connection between management participation and trainee outcomes.

2. Employees must be made aware of the importance of training and its connection to their daily work. As noted earlier, management engagement correlated with more positive employee evaluation of the training. It is also important to gain buy-in from employees by allowing them input, after needs assessment, into the type of training they need and want, as was the case with the consortium. Trainees within that program rated their training higher than did trainees who had no or little input regarding the training they received. In this same area of gaining buy-in, while employee recognition is exhibited through the hand-out of awards, from the CSCC instructor after training completion, distributing these awards at a ceremony of some type hosted by the business management would boost employee morale.

Future Research

Based on the results of this research, I recommend four directions for further investigation. ETP should consider a comparison study of similar community college ETP programs. CSCC should conduct a longitudinal study, and tracking if, in fact, employee/trainees do continue with additional courses, move into certification programs, or beyond. For continued success in the program, CSCC should conduct a labor market research study to determine the new businesses in the community, which may benefit

ETP funding, or other training programs the CSCC economic workforce division can provide.

Recommendations

1. Future research should compare similar type ETP training programs at other community colleges using both qualitative and quantitative measures. A comparison can help determine best practices and, when necessary, facilitate changes in current practices.
2. CSCC should conduct a longitudinal study of training effectiveness from the onset of a training program through to at least a year post-completion. Besides examining longer-term training effectiveness, this feedback would provide information about upcoming needs for further training. Additionally, the career, educational, and salary growth of employees can be tracked.
3. CSCC should track whether trainees go on to enroll in additional courses at the college and whether they earn a certificate, a two-year degree there or transfer to a 4-year institution. This will determine if training for incumbent workers creates stronger linkages with higher education programs and help to provide access, retention and successful outcomes for working adults pursuing additional skill-sets, credentials or degrees.
4. For growth strategy, CSCC should consider a labor market research study to determine the new businesses in the community, which may benefit from ETP funding, or other training programs CSCC can provide. For example, looking at economic indicators for industries and occupations within the county and employment projections would help target future training needs. Defining the

fastest growing occupations and those with the most job openings would highlight the short and long term trends. This will also build a database for marketing of the colleges training programs and targeting industry and individual businesses. More widespread outreach is also needed in terms of marketing strategies: email blasts and printed literature on the program. Recruitment should increasingly focus on industry conferences, local business symposiums, and chambers of commerce and be augmented by door-to-door industrial park visits and local media such as newspapers and periodicals.

Conclusion

Benchmarking this research to Moore et al.'s (2004) study is challenging, as the training models within the multiple employer contracts have changed since 2004. This study uses one MEC, a community college, and focuses on incumbent workers. The MEC is CSCC, considered the training agency, and provides both consortium and business site training. Moore et al.'s study incorporates many types of MECs, and includes training for incumbent workers (i.e., "retrainees") and new hires. While the instruments and data gathering activities were similar, the population of training program models and delivery of training are not. What is now considered classroom and laboratory training at the business site was previously called structured on-site training (SOST) with different criteria and protocols. This study sought to evaluate the effectiveness of the training provided through one community college. From a broader perspective, the results of this study may serve to inform the practices of the community college and of similar training programs.

Research shows that education efforts to train workers are a positive and a cost-effective public investment that both social scientists and economists agree helps to develop human capacities and stimulate economic growth (Altbach, Berdahl, & Gumport, 2005; Becker, 1993; O'Leary, Straits, & Wander, 2004; Rhoads & Torres, 2006; Slaughter & Rhoades, 2004). Against this background, the purpose of this mixed-methods case study was to examine the effectiveness of a community college ETP incumbent worker job training program, as community college workforce training programs play a central role in supporting economic development (Van Noy et al., 2008; Obama, 2014, January 30). Additionally, community colleges have played a role in ETP programs because today's economic environment requires leaders at these institutions to look beyond their campuses and create a variety of collaborative opportunities which affect the quality of life in their service areas, both currently and for the foreseeable future (Townsend & Shelly, 2008).

Results from this study indicate that business management participation alongside a well-developed curriculum presented by knowledgeable instructors may have long-term beneficial implications for ETP, community colleges, businesses and individual employees. Lastly, given the public investment in these programs, transparency in terms of training providers, businesses involved, curriculum, trainees, cost and effectiveness is of utmost importance. This study can be used as a resource for other job training programs in that the evaluation instruments can be adapted to their programs. Following the recommendations of this study would position CSCC to objectively evaluate and substantially improve their training programs to better serve local businesses and their employees.

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Appendix A

Interview Questions for Managers/Supervisors
Protocol for Community College Job Training Program

Introduction:

These questions are designed to gather feedback on the practices and policies that shape the job training programs offered through the community college for the company you work for. It is being administered to participants in the 2011/2012 California Employment Training Panel Contract for the local community college as part of a doctoral research study. The findings from the study should help to improve programs and policies to support the mission of the college training program and the training objectives of the company. A central way of collecting data for this study is through interviews with managers and supervisors like yourself whose primary professional responsibility is to oversee employee/trainees who have participated in the training.

The questionnaire is voluntary. You will be asked to identify the business and training programs your employees participated in so that the response data can be linked with the business site data solely for the purpose of analysis. Once that step in the analysis is completed, all identifying data will be securely stored separately from other data and findings. No names of individuals or businesses will be used in the dissertation or any subsequent reports, presentations, and publications.

Important: Before proceeding to the survey, please review the two attached documents: 1) the informed consent information, and 2) the Bill of Rights.

Thank you very much for your time and consideration; your participation will make a valuable contribution to the much-needed research on job training program evaluation. Once the interview analysis is completed, you will be provided a report summarizing the findings of the study.

1. How did you come to know about the COC ETP program? Did you seek it out or did COC seek you?
2. Why did your company offer this training program? What was it hoping to accomplish?
3. What has you company's past experience with training been? NOTE: I think this is important to set the context. Do they have in-house trainers? Is training a part of the strategy routinely? What is the CEO's attitude toward training etc.
4. Questions about the contracting and design experience. How did the contracting go? How long did it take? How helpful were COC staff? How many of your staff were involved? Etc.
5. Why did you choose this particular training program? Was it customized for your company needs? What specifically was changed to meet your needs? Was training done on your equipment? Did supervisors participate in training as instructors or trainees? Were there other training opportunities that you considered? Why or why not choose the other program?
6. What are strengths and weaknesses of the training program, from your perspective? Probes: Quality of instructors? Quality of Training Materials? The right topics? Opportunities to practice skills? The pace of training? To slow to fast? Not enough time on some topics?
7. Did the training achieve the goals you mentioned before? Did the training change anything else you were not expecting within company? Such as relations or communication between employees and supervisors, or company attitude towards

training? Did this experience change your companies' attitudes towards investing in training?

- In your judgment did the employee trainees learn the intended skills for each type of training?
- Are the employee trainees using the skills learned in training on the job? Examples?
- What has been done to reinforce the skills or ideas learned? By supervisors? Other ways? Mentoring?
- What obstacles, if any, have the employee trainees faced using their new skills?
- What do you think the employee trainees would say about their behaviors changing since completing training?
- Do you think the training improved employee performance? How so? Any examples for evidence?
- Were the employee trainees given an opportunity to formally evaluate the training after completion?
- How do you think the employee trainees rated the training?
- What do you wish that the employee trainees learned from this training?
- Did you attend any or all of the training? What did you observe?

8. Was this training a worthwhile investment for your company?
9. To what degree did the training achieve your business goals? Probe: What evidence did you measure? Indicators such as scrap/absenteeism/productivity? Could I see a copy of this information?

10. Based on your relationship with CSCC would you use the services again? Why? Why not?
11. What would you tell another company about CSCC, ETP Training?

Appendix B

Survey Protocol for Community College Job Training Program

Introduction:

This survey is designed to gather feedback on the practices and policies that shape the job training programs offered through the community college for the company you work for. It is being administered to participants in the 2011/2012 California Employment Training Panel Contract for the local community college as part of a doctoral research study. The findings from the study should help to improve programs and policies to support the mission of the college training program and the training objectives of the company. A central way of collecting data for this study is through surveys of trainees like yourself who have taken training courses and are contributors to the California workforce.

The survey is confidential. You will not identify yourself. There will be no signatures required. However, you will be asked to identify the training program you participated in so that the survey response data can be linked with the business site data solely for the purpose of statistical analysis. Once that step in the analysis is completed, all data identifying industries will be securely stored separately from other data and findings. No names of individuals or businesses will be used in the dissertation or any subsequent reports, presentations, and publications.

Important: Before proceeding to the survey, please review the two attached documents: 1) the informed consent information, and 2) the Bill of Rights.

Thank you very much for your time and consideration; your participation will make a valuable contribution to the much-needed research on job training program evaluation. Once the surveys are completed, you will be provided a report summarizing the findings of the study if requested.

Appendix C

Trainee Evaluation Survey

**This survey will help us to get your opinion about the training that you received. The information will be used by the community college to improve their program. Your answers are completely confidential, and will not be shown to your employer.*

1. What is your current job title:_____

2. How long have you worked for the company? _____years _____ months

How would you rate the training you received in the following areas?
(*check box that indicates your opinion)

3. Reaction Component	Rating			
	Poor	Fair	Good	Excellent
Clear Objectives				
Usefulness of topics covered for your job				
Length of time on each topic				
Quality of instructional materials				
Degree training was customized to your company				
Quality of classroom instructor				
Effectiveness of structured on-site training in allowing you to practice the skills you learned				
Ability of trainers to keep you interested and motivated				
Degree to which the training was at the right level for you, not to hard or to easy				
Quality of training overall				

4. What Skills or Knowledge I Learned	None	Some <40%	About Half	Most 60% +	Everything

5. How Often I Used the Skills or Knowledge	Never	Less than once a week	Once a week or more	Everyday

6. Impact Component	Productivity			
	No Increase	Small Increase	Substantial Increase	Major Increase

7. Impact Component	Feelings about company since training				No Opinion
	Strongly Disagree	Disagree	Agree	Strongly Agree	
Communication is better with supervisors					
Less stress on job since what I learned					
Workers are treated with more respect					
Relations with coworkers are better					
More motivated and involved at work					
More optimistic about my future with the company					
More positive about the company					

8. As you look back on the training what do you remember most?

9. As you look back on the training what information and skills do you wish had been covered that weren't?

10. Do you have any additional comments you would like to make about the training experience?

Thank you for taking the time to give constructive feedback on this course. Your responses will be used to improve future courses.