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IMPACT OF MINIMUM HIRING REQUIREMENTS (AB 1725) ON THE
RECRUITMENT AND EMPLOYMENT OF COMMUNITY COLLEGE
VOCATIONAL AND TECHNICAL TEACHERS IN CALIFORNIA

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education: Vocational Education

by
Victor Corey Davis

June 1995

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Abstract

This study examined the hiring practices of community colleges regarding the preparation and continued professional development of vocational teachers in California. Data from community college vocational administrators, teachers, and employers who typically hire vocational students formulated the populations in the study. Each population responded to 22 independent variables regarding pre-service and in-service requirements for community college vocational teachers. Scheffé's post hoc comparison test determined the order of acquisition for the 22 variables and a one-way ANOVA determined if there was a significant difference between any two population means. Findings indicated several significant inconsistencies existed between current hiring practices and those practices perceived to be appropriate by study participants—the most salient differences being the exclusion of pedagogical and continued in-service development for vocational teachers. Consequently, it was recommended that the current legislation outlining minimum qualifications (AB 1725) be amended to include occupational testing and teacher-education for pre-service vocational teachers and continued professional development for in-service teachers.

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Chapter I

Introduction

Background

Occupational proficiency has become more than mastery of the skills related to work. High level technology changes in nearly all trade and industrial professions have opened the gateway to a *new economy* (Carnevale, 1991). For example, within the past four years, the technology of the automotive repair industry has doubled. Notable in that respect are: (a) semiconductors and sophisticated multiport computerized fuel delivery systems (replacing switches and fuel regulating carburetors), and (b) steel and cast iron construction materials have given way to high tech alloys and composites. These and other changes have created a demand for a higher skilled technician. Consequently, life-long learning fostered by *basic skills* have become essential. McGraw and Farrant (1992) discussed the results of the Machine Action Project (MAP, see Appendix A) and concluded: "technology advances have changed and will continue to alter entry level and long-term career skills requirements in most occupations" (p. 18).

It is obvious that an individual trained five or ten years ago must, at some time, seek technical education or retraining. A large percentage of beginning level students and professionals pursuing retraining seek the assistance of the community college. Consequently, to effectively serve the changing needs of industry, community college vocational faculty and staff must educate students consistent with current industry practices and related methodologies, as well as

incorporating basic skills into curricula. Therefore, it is important to examine competency levels of all vocational teachers.

The Secretary's Commission on Achieving Necessary Skills (SCANS, 1991), recommended the movement toward a *high-performance* workplace: one that emphasized problem-oriented work and flexible workers with broad skills. Incorporating curriculum changes consistent with the SCANS have placed great demands on community college faculty to develop *performance-based* curricula designed to ensure that students completing a specific course of study are proficient in all tasks established throughout the course work, prepared for the next level of training, and possess the necessary *transfer skills*.

The idea of preparing students for the next level of education, also referred to as *positive termination*, is the basis of most vocational programs. In this level-by-level learning structure, the success of a student is directly related to their successful completion of all prerequisite course work prior to perusing advanced course work. Divergence from this structure most certainly will result in a disappointing experience for the student or even failure to reach their career goals.

Rahn, Hoachlander, and Levesque (1992) pointed out that California has measured postsecondary vocational program accountability by the percentage of students who intend to complete a degree, certificate, or license curricula. Accordingly, successful student outcome equates to vocational accountability. However, the teacher is certainly the most important element in the level-by-level learning process and has the responsibility to *counsel out* students who are in need of remedial skill development, in addition to preparing qualified students for the next level of education. Failure to fulfill these level-by-level

prerequisites will conceivably impair the rate of learning and level of student competence. Therefore, vocational teachers must have the skills necessary to evaluate students basic skills as well as occupational development.

California's Community colleges have established minimum basic skills requirements for teachers prior to employment. In the case of *classical educators*, completion of a graduate degree fulfills the basic skills requirement. For vocational teachers in the same college setting, completion of an associate's degree fulfills the basic skills requirement.

The employment of community college vocational teachers, prior to 1990, required a candidate to meet certain occupational experience and pedagogical requirements preceding the issuance of a community college teaching credential. Enactment of AB 1725, the Community College Reform Bill, abandoned the credential system for minimum requirements. This legislation eliminated all pedagogical requirements for industry persons entering a community college for the purpose of instructing. A potential problem created by adopting the minimum qualification's policy is the possible negative effects on students being instructed by teachers who are without proven technical, trade, and pedagogical experience. Therefore, some fundamental questions surrounding the minimum qualifications arise, such as: (a) are teachers technically *qualified* in subject matters related to their assignment?; (b) are industry-to-college teachers competent in pedagogy?; and, (c) after employment, have teachers continued professional development and occupational coexistence? As a result, minimum qualifications have the potential to create inconsistencies and hiring practices leading to a dysfunctional vocational program.

Nature of the Problem

Scott (1988) described the historical recruitment, preparation, and retention of vocational teachers to be quite different from those of classical educators. Accordingly, the minimum hiring criteria for community college vocational teachers are uniquely different from the requirements for classical educators. The prerequisite for a vocational teacher is work experience. Olson (1991) sighted California as a leader in the two-year college movement, but “[California] recently dropped its state certification of community college faculty and moved to minimum qualifications” (Salle, sighted in Olson, 1991, p. 348). As a consequence, the state essentially substituted academic education for occupational and pedagogical competence. The document *Minimum Qualifications for Faculty and Administrators in California Community Colleges* has outlined these requirements (see Appendix B). A master’s degree has generally not been available in trade and industry subjects so community colleges have most commonly used an AA or BA degree to qualify vocational teachers for employment.

Review of the article clearly illustrates the perspective that a teacher holding the appropriate degree—in any academic or vocational discipline—and having fulfilled the work experience requirement qualifies as a community college vocational teacher. Furthermore, the interpretation of this article indicates that a four-year degree in a chosen discipline, not necessarily directly related to the faculty member’s assignment, is an appropriate substitution for technical, trade, or industry experience. Finch (1991) took issue on vocational teacher preparation and questioned non-specific hiring practices; particularly, the appropriateness of hiring a teacher holding a degree in arts or sciences and

ensuring that teacher's success in a particular vocational subject (or in subject matter that is most appropriate for vocational education).

To synthesize the implications, a four-year liberal arts major who performed basic service tasks such as oil and filter change on automobiles for two years qualifies as a community college automotive instructor. As Miller (1985) indicated, time on task is not a valid indication of an individual's competency. Without the inclusion of demonstrated occupational competency in the trade or industry skills directly related to the prospective faculty member's assignment, the possibility exists for technically inept teachers to instruct in community college classrooms. In addition to occupational competency, Finch (1991) advocated further academic development for vocational teachers and stated, "... vocational education teachers should attain the same level of education as their academic teacher counterparts" (p. 3).

Occupational proficiency has demonstrable qualities. In the professional sense, it is also quantitative. Time on task is usually a requirement for vocational educators, although the requirement does not ensure that a teacher has the necessary technical competencies. Miller (1985) indicated, "there is general agreement that twelve years of employment experience may have taught some people very little (both because some employment is routine, repetitious, or highly specialized, and because some people learn much more slowly than others)" (p. 87). Therefore, time on task should be only one of four determining factors in a collection of hiring requirements. The other three factors that need consideration are academic achievement, demonstrated competency in the subject matter directly related to the individual's assignment, and pedagogical proficiency.

The current minimum hiring requirements specify that an individual's professional experience used in determining hiring qualifications be "... directly related to the faculty member's assignment" (Chancellor's Office, California Community Colleges, 1994, p. 12). Several occupational trades have clearly defined specialty areas within a single trade that fall under a generic trade heading. One such discipline is automotive repair. Within this generic heading, the National Institute For Automotive Service Excellence (ASE) has identified eight specialized areas of automotive repair and has developed individual competency testing for each of these areas. This calls into question the definition of "directly related to the faculty member's assignment." Can, for example, an individual that has six years of experience working on automotive brakes and front ends be deemed *competent* to teach automotive transmissions in community colleges? The nature of the problem is directly related to the definition of minimum hiring qualifications for vocational educators; the lack of demonstrated occupational proficiency; the dichotomous standard of educational requirements for vocational and classical academic educators; and, the lack of any required pedagogical training for new vocational instructors.

As summarized by Huang and Gray (1992), The Carl D. Perkins' Vocational and Applied Technology Act of 1990, marked a significant change in federal education policy. A major intent of its design was to prepare high-school level students for the transition to a two-year sub-baccalaureate postsecondary technical education. The act provides funds for the promotion of programs of study that articulate high-school-level vocational education programs with two-year postsecondary vocational associate degree or certificate programs. The major premise was that "postsecondary vocational education provides students

with skills that help them get better jobs" (Goodwin, 1990, p. 1); consequently, earning a bigger pay check.

The emphasis given to raising the standard of excellence for vocational-bound students was noted in the Perkins' act and deserving of attention. At the same time, the professional development of vocational teachers deserves equal attention. Interestingly, California's State Plan for Vocational Education does not contain funding for vocational teacher-education.

Significance of the Problem

Steiger and Shoemaker (1989) argued that competency governs the size of the paycheck in certain trade and industrial professions, thus, determining the socioeconomic status of the worker. If community college vocational teachers lack occupational proficiency or effective pedagogical techniques, the target objectives they set for their students may not parallel those of industry. Consequently, students may leave a particular class inept to the relative practices of a particular occupation. In defense, according to Steiger and Shoemaker, certification is the best way for vocational teachers to ensure that their training programs really do prepare students for work.

Significance is found in the relationship between occupational competency and economic prosperity. A skill-deficient workforce not only endangers the creditability of the represented industry, but it also impedes the economic growth and development of the community and the state. From the standpoint of a high-performance workplace, the significance of student preparedness is that it directly relates to the socioeconomic prosperity of the individual that transcends into the economic development of the community and state.

In comparison to teachers of academic subjects, vocational subjects have required diminutive professional development standards. This fact alone implies a negative connotation about vocational education and, thereby, applies distinct lines of segregation between vocational and classical academic education. Such ideology has damaged all trade and industrial professions. Inadequate instructors allowed to teach students in high exposure positions, such as the community college, sacrifice the professional credibility of the industry they represent. Miller (1985) stated: "teachers of occupational education are members of the education profession. The fact that occupational teachers may have occupational backgrounds is not a basis for altering a professional relationship with education or viewing teachers as other than professionals" (p. 83). In addition, English (1993) assertively argued for eliminating what he identified as an artificial dichotomy between vocational and academic learning. He further stated "... [there is] the need to eliminate separation of vocational and academic, job training and production, and the traditional philosophy that separates learning from work" (p. 1).

Vocational education in California is in need of higher professional standards. Academic proficiency, as currently required, and professional qualification defined through a nationally accepted testing organization, such as the National Occupational Competency Testing Institute (NOCTI), will assist in elevating such a reputation in addition to helping eliminate the dichotomous relationship between academic and vocational education. According to Feldman (sighted in Miller, 1985) "it should be clear that in achieving our purposes [high quality vocational education] the highest priority should be given to the training and development of a new breed of educators who are vocationally competent

and academically accomplished” (p. 86).

Statement of the Problem

The current minimum employment requirements for community college vocational teachers overlook pre-service pedagogical development and reduced academic development standards for vocational teachers when compared to classical academic teachers in the same postsecondary setting. Assembly Bill 1725, as enacted by the California Legislature in 1990, changed the hiring requirements of community college teachers. Specifically, minimum qualifications replaced the prior credential system and many aspects of employment pre-qualifying criteria. Some were subtle while others were significant. Significant to the study were those changes that affected occupational competency, academic preparation, pedagogical development, and in-service development of teachers hired to instruct community college vocational courses. Consequently, the most relevant problem was to evaluate the adequacy of minimum hiring requirements for community college vocational teachers. Therefore, the problem shall be to define the perceptions of community college vocational administrators, teachers, and employers who typically hire vocational students regarding competency standards for vocational teachers.

Purpose of the Study

The purpose of the study was to identify occupational, academic, and pedagogical competencies expected of community college vocational teachers upon employment. Employers of community college students and community college vocational teachers and administrators provided the information that

constituted the minimum qualifications review.

Results from the study will accommodate recommendations to the Chancellor's Office of California Community Colleges for the next comprehensive review of the *Minimum Qualifications for Faculty and Administrators in California Community Colleges* document scheduled for 1996.

Overview of Research Questions

The substitution of academic development for occupational work experience, together with the exclusion of a state or national occupational competency standard for community college vocational teachers, can lead to non-defensible challenging of vocational teacher qualifications by opponents. Therefore, the study sought to determine if there are any perceptual differences among community college vocational administrators, teachers, and employers who typically hire vocational students on the following issues: What pre-service academic preparation and work experience are appropriate for community college vocational teachers? Is in-service vocational teacher development a significant attribute of effective vocational instruction? Should a state or national occupational testing measure be used when considering teachers for employment at California community colleges? And, is there a significant perceptual difference among the three surveyed populations on any of the above issues.

Limitations of the Study

The motivation prompting the study was personal background conversations and instructional observations of a small group of community

college teachers. The study was an attempt to determine if these personally observed behaviors were characteristic or anomalous to vocational instruction in California's community colleges.

Additionally, the employer sampling was proportionality smaller than the sampling of community college administrators and teachers. Employers were randomly sampled within three counties, while community college administrators and teachers were systematically surveyed state wide.

Definitions

The term *new economy*, as defined by Carnevale (1991), referred to present postindustrial time whereby productivity, quality, variety, customization, convenience, and timeliness have determined national competitiveness. In terms of employee skills, Carnevale identified flexibility to adapt to change and dissimilar situations, the ability to learn and keep abreast of change, and the ability to cope with ambiguity pivotal attributes for success.

In the context of the study, the term *basic skills* referred to a cognitively proficient level of mathematics, reading, writing, conceptualization, and problem solving consistent with current workplace standards as well as future needs.

The Secretary's Commission on Achieving Necessary Skills (SCANS, 1991) described a workplace in which work is problem-oriented, flexible, and organized in teams. They referred to the qualities of the new environment as *high-performance*. Additionally, student evaluation that measures outcome aside from aptitude is referred to as *performance-based* evaluation.

Nolte (1993) argued that basic academic, communication, and adaptive skills were essential to the success of all workers. These non-occupational

specific skills, also referred to as *transfer skills*, are essential qualities of a worker participating in the high-performance workplace.

The term *positive termination* referred to an educational endeavor where by, upon completion, the student has the choice of either advancing to the next highest level of education or perusing occupational or employment opportunities. In either event, the student has successfully completed the prescribed course objectives.

Not every student can become accomplished in a particular trade, occupation, or industry (due to conceptual, manual dexterity, motor skill, physical, or mental limitations). Therefore, vocational teachers have a responsibility to inform such student if one or more of these limitations will prevent them from reaching a level of success in a particular discipline. For the purpose of this paper, *counsel out* referred this process.

The term *classical education* referred to non-vocational education subjects such as mathematics, reading, writing (the three R's), and basic conceptualization and problem solving skills.

Within the text of the study, the terms *qualified* and *competent* described teacher qualities. The term *qualified* referred to a teacher having fulfilled the requirements for hire as a community college vocational teacher as defined in the document *Minimum Qualifications for Faculty and Administrators in California Community Colleges*. The term *competent* referred to a teacher that fulfilled the minimum hiring requirements in addition to a level of demonstrated occupational and pedagogical development.

The term *occupational education*, as used in this paper, represented a generic term reflecting formalized experiences associated with exploring and preparing

one for the world of work. Terms that closely associate with it are vocational education, technical education, employment and training, career preparation, and occupational-technical education (Finch & McGough 1991).

As identified by Rice, Spetz, Hughes, Drewes, & Nerden (1982), *pedagogical* and *pedagogical competencies* referred to “the non-technical skills needed to teach apprentices, such as those involved with presenting information, developing instructional activities, planning instruction, and managing learning activity” (p. 7).

Chapter II

Review of Related Literature

Occupational Teacher Preparation and Qualifications

A primary issue of the study was to examine the minimum hiring requirements of vocational teachers in the state of California. To effectively address this issue, the preparation of vocational teachers in occupational skills as well as academic development became essential elements of the literature review. Determination of a perspective teacher's development in these areas is beneficial when making hiring decision based on teacher qualification, in addition to issues concerning accountability. Finch (1991), in similar research, listed several concerns and potential constraints with regard to studying vocational teacher preparation and qualifications:

- Teacher mobility which is to some degree a reflection of the range of opportunities available to vocational teachers (e.g., secondary, post-secondary, adult, business, industry, government).
- Variation in state teacher certification requirements.
- Range in teacher qualifications (e.g., degree verses non-degreed teachers, different technical content associated with various vocational teaching areas).
- Range of teaching settings (e.g., comprehensive high school verses separate vocational school or center verses community or technical college).
- Heterogeneous nature of vocational teachers (e.g., beginning teachers may be younger or older and may be in their first, second, or third careers). (p. 14)

Consequently, there is a scarcity of writing in this area of vocational education attributed to what Finch argued to be a relatively undeveloped area of vocational education that lacks comprehensive data and warrants further research.

Miller (1985) addressed concerns relating to vocational teacher preparation and qualifications. A deficient number of teachers often dictate the requirements for vocational teachers. The results of which question the professional nature of vocational education.

At times, vocational education has negated its position as a profession. Shortages of qualified teachers, for example, have stimulated a relaxing or waiving of certification requirements. ... the most common first step in meeting a teacher shortage is to waive requirements for preservice teacher education. If this is not sufficient, the requirements of a certain of years of successful employment experience is then reduced. The emphasis on maintaining occupational standards in performance to professional qualifications has detracted from the professional image of vocational education. (p. 84)

The importance of having a measurable and unalterable standard of minimum teacher requirements becomes essential to maintain (or obtain) a professional teaching standard. Allen (1974) reiterates this principle with a supporting position:

[Vocational] instruction should be given by teachers who have had occupational experience in the subject(s) that they are teaching. Teachers must be equipped with both practical experience and professional training to provide students with the skills, knowledge, attitudes, and appreciation's they will need to fulfill their occupational goals. (p. 122)

These professional attributes place a multitude of responsibility on vocational educators that far exceed those of classical educators. Vocational experience and preparation together with academic preparation yield itself to a minimal population of qualified vocational teachers. The argument, then, becomes reduced to serving a large population of students with minimally prepared teachers, or serving only a part of the population of students with qualified teachers.

Vocational teacher academic preparation.

The issue of vocational teacher academic preparation is one that, by evidence of research, has limited autonomy. A report entitled *The Unfinished Agenda* (National Commission on Secondary Vocational Education, 1985) recommended that vocational education teachers attain the same level of education as their academic teacher counterparts. In addition, Finch (1991) argued for including basic education standards for all students—including vocational-bound students; additionally, he argued that relevant basic skills be more readily available to each student. The focus of vocational teacher preparation shifted from its classical intent of skill-specific development to whole-life development. This change includes occupational development as well as basic skills achievement. The transfer ability of a person from one career into another often depends on their basic skills development. Education, according to Finch (1991), "... should focus on developing the whole student, not just basic life and work skills" (p. 2).

The implication is vocational teachers, in addition to teaching work specific skills, need to also develop student's basic skills. The revealing paradox is, "... that about 70 percent of the trade and industrial teachers do not have degrees" (Finch, 1991, p. 6). In addition to these findings, Osion (1993) reported that almost 21 percent of postsecondary occupational-technical instructors did not have a college degree.

Vocational teacher occupational preparation.

Many researchers have focused on pre-service and in-service minimum teacher standards. The attention given to vocational teacher occupational

competency suggests a concern for having the most qualified teachers in vocational teaching positions. Recognized changes in the workplace and employer expectations have changed dramatically the responsibilities placed on vocational teachers. In order for vocational schools across the nation to justify accountability, the occupational standards of their faculty and staff must equal or exceed that of the industry they represent.

Research by Kapes and Welch (1985) studied occupational competency factors such as writing, mathematics, and skill specific tasks of educators in Pennsylvania. The survey population represented 43 different occupations and trades. The testing model used in their research was developed by the National Occupational Competency Testing Institute (NOCTI). The results of their research concluded that NOCTI-type examinations were a significant indication of preparation and should be used to make pass or fail decisions for perspective vocational teachers. Their research also suggested that strict adherence to an occupational testing program may result in an insufficient supply of vocational teachers.

According to Miller (1985), there are two different routes for obtaining vocational teachers. The first emphasizes occupational experience, whereas the second gives priority to professional and academic development.

Although it is practiced, states seldom admit that, during periods of teacher shortages, teaching certificates are provided for individuals who would not be considered for certification at other times.

Unfortunately, in vocational and technical education, certification, once obtained, is difficult to revoke. These issues all suggest a need to rethink how vocational education obtains qualified personnel. (p. 87)

In the research of Kapes and Welch (1985), 521 individuals took a written examination specific to their occupational specialization. Of this population, 329 (63 percent of the population) individuals passed. Furthermore, 475 individuals

took a performance examination specific to their occupational specialization, and 370 (78 percent of the population) individuals passed. As indicated by this research, and complimentary work by Miller (1985), time on task does not equate to occupational competency, therefore, discretion is advised when making pre-service hiring decisions based on occupational experience.

NOCTI as a System of Occupational Competency Testing

A variety of factors influence both teacher qualifications and preparation. Because perspective teachers are influenced by a variety of experiences, such as quality and relevance of teacher education programs and backgrounds of persons entering the teaching field, there is a potential for a great deal of variability in teacher qualifications (Finch, 1991). The potential variability in qualifications clearly warrants examination with the significance being that vocational teachers exhibit uniform competency.

The uniqueness of occupational certification, according to Duenk (1989), is that, as a group, vocational teachers are preparing students to enter very different settings than are their academic counterparts. Additionally, the majority of vocational teachers are recruited from industry. Consequently, much of their training comes from on-the-job experience not formalized classroom settings. Noting this difference, it follows that vocational teacher certification must fit these unique needs.

Aptitude is not a measure of competency, therefore, the National Occupational Competency Testing Institute (NOCTI) developed a model for measuring technical-related knowledge and manipulative skills. Results of the assessment indicate occupational competency. Specific to the inquiry of

vocational teacher competency testing, NOCTI has developed over 50 Teacher Occupational Competency Tests (TOCTs), and continues to develop additional tests at the request of industry. Research by Kapes and Welch (1985) on occupational competency assessment programs in Pennsylvania, the biggest users of NOCTI tests, concluded national norm scores from NOCTI exams provide reliable information to make the pass or fail decisions for prospective vocational teachers.

Accountability in Vocational Education

The literature review, for the focus of this paper, addressed the method California adopted for measuring vocational competency gain and advanced academic skills achievement for community college students. As reported by Rahn, Hoachlander, and Levesque (1992), the Carl D. Perkins Vocational and Applied Technology Education Act of 1990, required states to implement systems of core measures and standards for assessing the performance of both secondary and postsecondary vocational programs.

Perkins II [presently in the final regulations § 403.202] requires the states' systems include at least two sets of measures. One set must be measures of learning and competency. The other set must include any one of the following four measures: (1) competency attainment; (2) job or work skill attainment; (3) retention or completion in school; or (4) placement in further education, the military, or employment. (p. 1).

Rahn et al. also expressed concern regarding the flexible interpretation of the Perkins legislation and the possibility for misinterpretation. The legislation is not specific concerning whether or not the gains measured are for individual students, programs, or institutions. Furthermore, the legislation is vague concerning the standard or base for measuring relative gains. This flexibility

allowed each state the autonomy to develop an outcome-based accountability system. Consequently, each states' system of performance measures and standards are different.

According to Olson (1993), California is recognized as a leader in the two-year college movement, furthermore, it has established a system of measuring vocational student attainment in compliance with the Perkins Act. As documented by Rahn et al. (1992), California developed a method based on course completion to measure advanced academic achievement for vocational students in community colleges.

Advanced academic skills will be evaluated by the completion rate of students enrolled in degree applicable vocational courses. Definition for academic achievement (successful completion)—a student who received a grade of A, B, C, or CR on his/her transcript for that course at the end of the term. (p. A-16)

Evaluation of vocational competency.

In addition to fulfilling the advanced academic skills measurement, California developed an accountability method for occupational competency, that once again, fulfilled the Perkins requirement.

For California Community Colleges, evaluation of vocational programs is according to the percentage of students who intend on completing a degree, certificate, or license and earned a degree, certificate, or license.

Vocational Teacher Qualifications Verses Teacher Preparation

Occupational experience has always been a criterion for vocational teachers. "Dating back to the Smith-Hughes Act of 1917, vocational instructors were to be competent in the trade they taught rather than be qualified as

professional teachers” (Olson, 1993, p. 36). Teacher qualification, as developed through the foregoing literature, is measurable by use of standardized testing for both basic skills and occupational competency (such as NOCTI). Gray and Wang (1989) argued, “proponents of such tests claim that mastery of these basic academic skills is fundamental to effective teaching at all grade levels” (p. 51). With the inclusion of occupational competency testing, work experience in a related field, and academic achievement, individuals meeting all three criterion, by all measurable means, is a qualified vocational teacher—but qualification does not equate to preparation.

According to Finch (1991), many non-degreed vocational teachers have entered the teaching field with little more than a high school diploma and rich employment experiences in an occupational field. There are, however, others that become vocational teachers by entering the field after receiving baccalaureate degrees in a variety of fields and working in areas such as business, marketing, and agriculture. In addition, Finch argued:

Even though persons may have completed teacher education programs, it does not mean they will be competent teachers. Entering the profession at a stage anywhere from advanced learners to seasoned professionals, many teachers must learn on the job what they did not learn in universities or while working in technical fields. Thus, due to a variety of factors such as quality and relevance of teacher education programs and backgrounds of persons entering the teaching field, there is potential for a great deal of variability in vocational teacher qualifications. (p. 7)

Vocational teachers may be recruited from business and industry with little more development than what they learned while on-the-job. The results of this recruitment process for vocational teachers have led to questioning their ability as a teacher, not their technical knowledge. According to Scott (1988), “All too often the induction process for new vocational teachers consists of being

assigned a group of students, being introduced to colleagues, and being given a sketchy curriculum—should one exist—and a key to the classroom” (p. 75). At no time during the induction process are matters distinctive to preparation assessed. The primary requisite for vocational teachers is, and have always been according to Olson (1991), occupational experience. Scott argued that this method of induction has several shortcomings and stated:

The basic assumption of local administrators is that the new teacher will assume full responsibility the first day on the job and will be able to teach because he or she is a technically competent person; after all, “teaching is a relatively commonplace, easy-to-learn task.” All too often the new vocational teacher must learn to teach in the way so many others were forced to teach—by trial and error. The underlying premise of this approach to induction is that teaching is based upon an abundance of common sense and intuition. (p. 75)

The implications of this review revealed distantly different vocational teacher maturity processes. The first being that of technical development, most closely related to occupational experience; and, the second being of teacher preparation.

Historically, according to Iverson, Trussell, and Walker (1988), teacher preparation programs have consisted of two main types: (1) college-based programs involving formal course work; and (2) nontraditional (college-operated) programs, wherein individuals with academic content preparation or work experience enter the classroom on a provisional basis prior to receiving intensive instruction in teaching. “Teacher preparation developed by either avenue,” according to Scott (1988), “can play a major role in reducing teacher burnout, improving the retention of teachers, and improving the quality of instruction offered to our vocational students at the secondary and postsecondary levels” (p. 83).

Economic Significance of Vocational Education

In reviewing literature that addressed the contribution of education to the further development of communities and the state found that such development started with the socioeconomic development of the individual. A large percentage of the workforce pursuing socioeconomic development has enrolled in California's postsecondary institutes. Employers apparently cannot—and expectedly do not—fill the basic skill gaps of their employees. Furthermore, Vaughan (1991) illustrated that, “basic skills and occupational skills are complementary: employers hire and train those employees with the best education, training and experience” (p. 448). Therefore, vocational teachers in postsecondary institutes must possess qualities that represent both basic skills as well as specific occupational skills.

The socioeconomic development of the student is dependent upon their earnings, and education is one avenue a student can choose to develop their socioeconomic status as well as bridge their skills' gaps. Vocational programs at the postsecondary level are expanding to include not only skill-specific training, but also development of transferable skills. Bissell, Borchers, Davis, Marquez, and Mead (1994) found that thirty-six percent of students sampled attending California State University, San Bernardino cited financial gains as their educational motivation. Vaughan (1991) further qualified the importance of education and its role in the economic development of both the community and the state when he argued, “the primary economic problem in most communities is no longer finding enough jobs for people—it is finding enough people who have the skills for the new jobs” (p. 447). He attributed the cause to a dwindling number of well-qualified people entering the work force, and the growing

demand for people with deeper and broader occupational skills.

Studies Specific to Economic Development

Economist Edward Denison (cited in Vaughan, 1991) estimates that two-thirds of the growth in real per-capita income each year are the result of the increasing knowledge and growing skills of the work force. Vaughan's (1991) study concluded that "postsecondary vocational programs are adapting to economic change. To strengthen students' grasp of *generic* occupational skills, vocational education programs are changing from job-specific programs to more broadly defined *cluster-related* programs" (p. 449). In their findings, Bissell, et al. (1994) also concluded that "[postsecondary] students are vocationally motivated, they seek employment, increased income, and [increased] socioeconomic status" (p. 7).

Recent studies have shown the importance of postsecondary education to both the workforce and the economic development of California. Hoachlander, Kaufman, and Wilen (1991) conceptually studied the benefits of a college education to the economic prosperity of an individual and argued, "... education's role in the economy is one of the primary institutions charged with helping people acquire the knowledge, skills, and abilities to perform productive work efficiently" (p. 16). Work by Denison (1974) estimated that education accounted for more than twelve percent of the annual economic growth in the United States. Moreover, his findings estimated the return on a college education to be between ten and thirteen percent. Vaughan (1991) stated, "the relative earnings of workers with some postsecondary education leapt to 180% by 1986" (p. 447). These economic advantages and their relationship with postsecondary

institutes account for the large number of continuing and returning students to California's colleges and universities.

Socioeconomic Motivating Factors

According to Duenk (1989), career development and the economic return associated with a diploma motivated returning postsecondary students. This *vocational* overtone has meant that postsecondary institutes had to develop students for success in the workplace. Wright and Kim (1987) pointed out that programs [in California's community colleges and universities] need improvement to help those individuals seeking occupational development reach their goals. According to Vaughan (1991), "we are creating an educational meritocracy in which education and training are the only paths to economic success" (p. 447).

A study conducted by Miller (1985) found that students are looking at attending four-year universities for job preparedness. "People beyond their twenties are entering postsecondary programs with the desire to enter new occupations, to receive additional training for advancement in present positions, or to enter the work force for the first time" (p. 62).

A local, more recent, study by Bissell, et al. (1994) conducted at California State University, San Bernardino concluded that sixty-six percent of the students surveyed attending the university were seeking career development.

Furthermore, their study argued:

... there is a growing awareness to redesign educational levels to include job-relevant skills training. Large numbers of students are returning to postsecondary institutions motivated by career advancement and economic gains. The role of the postsecondary institution is changing from one representing development in liberal arts to one of vocational development. (p. 5)

In addition, Grubb (1992) determined the associate degree as well as certificate programs offered by community colleges, provide substantial long-term increases in earnings for women. When considering other variations, the payoff for community college credentials can be even higher for individuals who find employment in jobs related to their educational programs. Hoachlander et al. (1991) concluded, "not only are better educated workers rewarded with higher salaries than lower educated workers, but workers with more education also are more likely to receive employer-sponsored training" (p. 26).

Education's Influence on the Workforce and World Economy

Vocational education has a profound impact on the nation's economy. Carnevale (1991) described a new economy based on productivity, quality, variety, customization, convenience, and timeliness. As these technical forces change, they affect organizational structures, skill requirements of workers, and jobs.

... human responsibilities and skill requirements are increasing and becoming less job specific, job assignments are becoming more flexible and overlapping, and employees are spending more time interacting with one another and with customers. (p. 3)

The increased demand for skilled workers with transferable skills is a manifestation of the new economy. According to Vaughan (1991), "economic success—internationally and in all of our communities—depends on investment in human capital. And vocational education investments play a major role" (p. 448). Carnevale (1991) stated, "learning leverages economic progress in the new economy" (p. 230). He concluded the focus of public education needed redirection toward high-quality education flexibly tailored to the learning styles of individual students. This flexibility will increase the transferability of workers

better preparing them for the competitive nature of the new economy.

Hoachlander et al. (1991) studied the economy and the relative share of the GNP attributed to the labor force and concluded those service industries clearly dominate the economy with nearly three-quarters of the labor force employed in the service sector. They also illustrated the import implications for education in continued economic development, but alluded to deficiencies in educational practices:

Elementary and secondary schools generally do not communicate well the nature of contemporary manufacturing or the kinds of career opportunities that are available Furthermore, opportunities are missed to ground many of the abstract principles of math and science in concrete manufacturing applications. (p. 8)

Therefore, as addressed by Vaughan (1991), the re-development of educational deficiencies is being sought by many at the postsecondary level. On the bases of the competitive standards dictated by the new economy, a continued growth in the GNP depends largely on a skilled workforce. The relationship between the new workplace standard and the socioeconomic development of the worker largely depends on the worker's transferability. The new economy favors an educated workforce; therefore, employers tend to favor workers with development in both basic skills and occupational proficiency. These individuals provide the greatest transferability and human capital investment as well as the greatest socioeconomic development.

Vocational Teacher Evaluation

There is a paucity of published research in the area of vocational teacher evaluation. Furthermore, the search reveals nothing conclusive regarding the relationship between quality teaching and the evaluation process. Dambrosio

(1994) raised two insightful questions regarding peer evaluation among community college faculty members: "Would peer review significantly alter the way teachers teach?", and "Were faculty really prepared to lift *the academic veil of secrecy* that had heretofore shrouded our classroom activities?" (p. 4). Duenk (1989) argued that the type of abilities required of vocational teachers to function effectively not only in the classroom, but also in a laboratory environment differ markedly from teachers of other disciplines. "They differed from academic teachers in that (1) the major *field* is primarily learned on-the-job and (2) the requirements of good laboratory and live work management differ markedly from other teaching environments" (p. 6).

In support of the need for vocational teacher in-service evaluation is the reciprocal nature of vocational education. Duenk (1989) indicated that the cognitive and psychomotor skills taught by vocational teachers change constantly as technology changes, thereby, justifying the need for a continual evaluation system to determine program deficiencies or needed upgrades.

In practice, pre-service evaluation (evaluation prior to hire) of community college faculty is the surrogate responsibility of the existing department faculty. An argument in the publication *Hiring Effective Faculty: An Introduction* (1991) stated, "[the] community college faculty now assume significant responsibility for evaluation the qualifications of individuals who seek employment as faculty in community colleges" (p. 1).

According to Smith (1994), as a method of determining pedagogical development as well as technical knowledge, the commonplace in hiring new vocational teachers is to assign them a topic related to their specific assignment. At some point in the interview process, the applicant prepares and delivers a

mock lesson before a panel of faculty members. This very effective method of pre-service evaluation has spread throughout community colleges as an acceptable pre-service evaluation tool, evaluation often ends after hire.

Vocational In-service Evaluation

As Dambrosio (1994) illustrated, "since the passage of AB 1725 in 1990, it is law that faculty 'evaluations shall include, but not be limited to, a peer evaluation process'" (p. 4). The term evaluation and its historical usage imply a negative activity for those being evaluated. Poor teacher evaluations have typically exposed deficiencies attributed to the specific individual. An evaluation that represents professional development identifies remedial subject areas, and, at the same time, supports the development of these areas.

In terms of vocational teacher evaluation, special circumstances relate to the evaluation method. Duenk (1989) argued, "... vocational teachers, as a group were preparing students to enter very different settings than are their academic counterparts" (p. 7). Therefore, vocational teachers need to perform vocational teacher evaluations. Administrators and faculty members from academic backgrounds have neither the occupational background nor the technical expertise to qualify the performance of vocational teachers, with the exception of communication and pedagogical effectiveness. Consequently, institutions are left with the proverbial *closed door* evaluation method, whereby individual departments evaluate their own teachers.

Typically, then, it is the departmental faculty members who conduct in-service evaluations. To effectively evaluate, cited in *Hiring Effective Faculty: An Introduction* (1991), "faculty members must possess extensive knowledge of their

discipline ..., as well as global contributions to their discipline" (p. 2). This implies that evaluation members maintain a relevant level of knowledge in the subject matter being evaluated. For vocational faculty, the significantly limited number of qualified evaluators, here again, create the closed door effect—ultimately limiting the number of qualified evaluation members to only departmental colleagues. In a study of California community college occupational education programs by Wright and Kim (1987) entitled *Strengths and Needs for Improvement in Occupational Education Programs in California Community Colleges*, they evaluated both program and faculty effectiveness, but never addressed the topic of vocational teacher evaluation.

Dambrosio (1994) questioned the peer evaluation clause in AB 1725 and pointed out, "... if we are doing a good job with peer review, it should be affecting the quality of teaching and learning" (p. 4). The limited research in this area has drawn inconclusive findings into the effectiveness of faculty evaluations.

A survey by Duenk (1989) found the majority of vocational teachers lack the baccalaureate degree, limiting their academic development. Furthermore, by not specifying academic achievement or pedagogical development in minimum hiring document for community college vocational teachers, it then follows that vocational evaluation cannot reflect academic standards or teaching quality leaving only evaluation of laboratory activities.

An additional concern argued by Dambrosio (1994) relating to discrepancies termed, "Procedural differences in evaluation probationary, tenured, and adjunct faculty: Should there be one peer review model for all faculty or multiple models?" (p. 4). Dambrosio cited in subsequent work the

evaluation process as outlined in Section 4 of Assembly Bill 1725 (1988):

The evaluation process should promote professionalism, enhance performance, and be closely linked with staff development efforts ... the faculty should, in the usual case, play a central role in the evaluation process. ... the faculty's inherent professional responsibility to ensure the quality of their faculty peers requires faculty review to be at the heart of the evaluation process leading to tenure decisions. (Emphasis in original, p. 4)

Faculty evaluation is one of the few methods of identifying deficiencies and needed upgrades in both teacher pedagogy and subject matter. The elimination of pre-service instructor development and the lack of explicit legislature on evaluation have detracted from the original intent of staff development.

Summary of the Literature Review

The literature identified various methods used to determine minimum requirements for vocational teachers. Mentioned through several studies was the need for occupational competency testing, whether or not a system was currently in place. Under examination, without a system of accountability, the credibility of vocational education becomes compromised. This compromise is further perpetuated by the dichotomous relationship between academic and vocational educators and the methods used to qualify teachers with various background experiences.

Vocational teacher preparation consists of three elements: occupational preparation, academic preparation, and teacher-education or pedagogy. While it is axiomatic that occupational experience in no way prepares one for teaching, it is also true that time-on-task is not a valid indicator of occupational competency. Therefore, discernment exists for measuring each competency of perspective teachers.

Additionally, international competitiveness may soon influence the socioeconomic status of workers. The literature indicated a need to supplement skill-specific training with basic skills development. The rationale provided being employers invest in human capital with the greatest potential and flexibility. This indication implies the more educated a worker the greater opportunity for advancement.

The nature and scope of information brought forth through the foregoing literature provided insight into the development of an appropriate research design. The methodology, theoretical model, and procedures guiding the study are discussed in chapter III.

Chapter III

Research Design and Procedures

Theoretical Model Guiding the Study

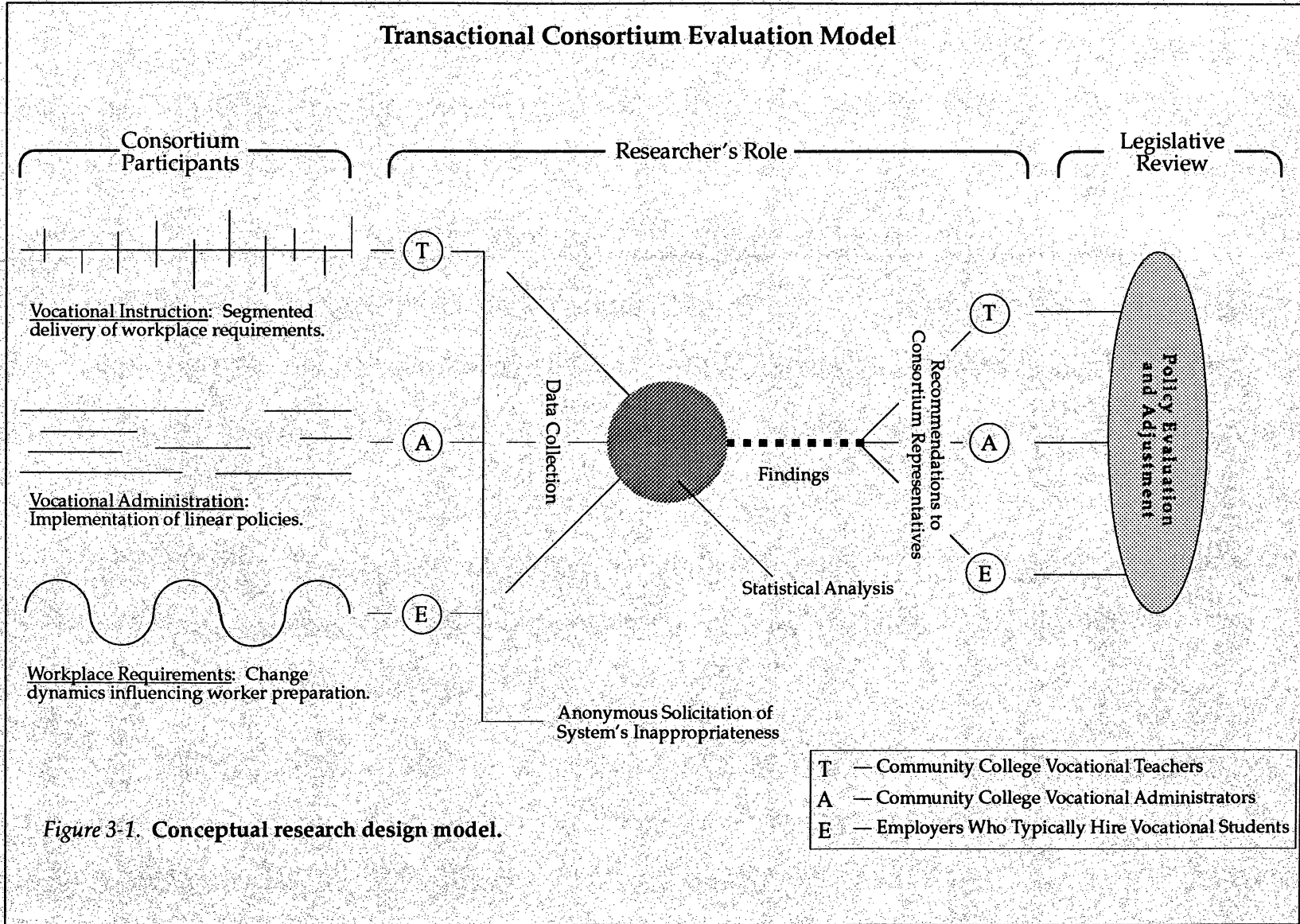
Theoretically, the occupational and pedagogical qualifications of community college vocational teachers should be consistent among the three-party consortium participating in worker development. Considered among the consortium is community college vocational administrators, teachers, and employers who typically hire vocational students. The study solicited each population's perception on variables relating to community college vocational teacher preparation and hiring practices. Scott (1988) indicated the historical recruitment, preparation, and retention of vocational teachers to be quite different from those of classical educators. Accordingly, the minimum hiring criteria for community college vocational teachers are uniquely different from the requirements for classical educators. The rationale, then, was to identify similarities and points of departure among the consortium on each variable.

The availability of new ideas or acknowledgment of an existing dysfunctional system indicates the need for change (Rippey, 1976, p. 450). Since the goal of the study was to evaluate teacher preparation and hiring requirements, possible inappropriate criteria were identified through a review of related literature. Anonymous information was solicited from consortium participants to validate concerns identified through the literature review, additionally, to eliminate the possible exclusion of further concerns. Information was then used to prepare a questionnaire of scaled agreement responses

representing these concerns. The questionnaire was distributed throughout the system, statistically analyzed, and recommendations returned to system representatives. Figure 3-1 illustrates the conceptual model that guided the study.

Research Questions

The research questions guiding the study were designed to compare the perceptions of vocational administrators, teachers, employers. The three populations were administered a questionnaire containing identical questions to solicit their responses to the following research questions. First, is there a significant difference in the perceptions of community college vocational teachers, employers, and community college vocational administrators regarding the following five variables: (a) What amount of work experience appropriately qualifies a teacher for a community college vocational teaching position; (b) What nature and scope of work experience appropriately qualifies a teacher for a specific community college vocational instructional position; (c) What level of academic preparation appropriately qualifies a teacher to effectively provide community college vocational instruction; (d) What amount of pre-service pedagogical preparation appropriately qualifies a teacher to effectively provide community college vocational instruction; and (e) What amount of in-service pedagogical and technical preparation appropriately qualifies a teacher to effectively provide community college vocational instruction? Second, is there a significant difference among any of the variables and, if so, what is the source of that variation?



Content Validation of the Questionnaire

Consistent with the theoretical framework, a list of dysfunctional criteria was identified through the literature review relating to the current minimum hiring requirements. Telephone interviews with various educational and employment system participants were conducted asking for contributions and evaluation of the criteria list. Additionally, participants evaluated the criteria for appropriate and comprehensive content. The steering group that participated in the review consisted of the following representatives: (a) two employers representing different industries, (b) three vocational instructors, each representing a different county and discipline, (c) one representative from the California Community Colleges Chancellor's Office, Human Resources Division; (d) one community college department chairperson; and (e) one activist from the California Community College Association of Occupational Educators (CCCAOE). Information obtained from the steering group constituted the formation of the final variables used in the study.

Treatment of the Data

The survey instruments used to facilitate data collection consisted of a scaled agreement response questionnaire containing 22 variables related to community college vocational teacher hiring requirements. All subjects responded to a standardized set of statements intended to measure a respondent's perception on each variable. Additionally, respondents completed a demographic profile specifically designed to match each population's unique educational and occupational background.

Procedures

A value label ranging from 1 to 5 was assigned to each Likert scale response addressed in the study. These numbers statistically computed individual sample mean scores, a group mean score, and standard deviation. A one-way analysis of variance (1 X 3 ANOVA) determined the degrees of freedom and if any statistical significance existed among the three groups on any variable. Scheffé's multiple comparison test determined the order of acquisition for each variable. Additionally, the group mean (gM) score determined the level of agreement on each variable. The formula for calculating the group mean is

$$gM = \frac{\sum_{i=1}^N \bar{X}_i}{N},$$

where

gM is the group mean score,

i is the specific variable under examination—i.e., V_1 through V_{22} , and

$\sum \bar{X}$ is the sum of the X s—i.e., $X_{(administrators)} + X_{(employers)} + X_{(teachers)}$, going from the first to the last value of the subscript i (McMillan & Schumacher, 1993; Thorndike, 1982).

Description of the Survey Populations

Participants of the study included three populations: current community college vocational administrators, teachers, and employers typically served by community college students. Population selection was inclusive of all parties participating in the education and employment consortium.

Research Subject Selection and Data Collection

The following methods of subject selection and data collection guided the process for each sample represented in the study. The Human Resources Division of California's Community Colleges provided a complete listing of community college vocational/occupational administrators in the state of California. The mailing list contained a total of 130 mailing labels that included the administrator's name, school, position or title, and address. Review of the mailing list revealed two duplicate names. Consequently, the number of community college vocational/occupational administrators in California totaled 128. The mailing included the entire population of administrators.

Included in the mailing with each administrator survey were a vocational teacher survey, a letter of purpose and instructions, and a pre-addressed return envelope. The directions requested that each vocational administrator select one vocational teacher from any department to complete the vocational/occupational teacher survey and return it along with the administrator survey in the envelope provided (see Appendix C).

The sampling of employers was drawn from a population within a 30-mile proximity of Chaffey Community College, in San Bernardino, California. They were randomly selected and surveyed by hand-delivered questionnaires. The counties represented by the study included San Bernardino, Los Angeles, and Orange. Employers were asked to complete the questionnaire while the survey facilitator was present. This was to expedite the rate of response and eliminate the need for follow-up. The employer data collector was a contract facilitator free of bias and instructed only to answer questions relating to the introductory cover letter and directions for completion (see Appendix D).

Data Collection Instruments

Because of the wide variation of background experiences among community college vocational administrators, teachers, and employers, three data collection instruments were used: one specific to community college vocational administrators, one specific to community college vocational teachers, and one specific to employers.

The quantitative instruments used to collect data incorporated Likert scales to measure the value or direction the respondents indicated in agreement or disagreement to each variable. According to McMillan and Schumacher (1993), Likert scale questionnaires allow a reasonably accurate assessment of beliefs or opinions, primarily because many beliefs and opinions are thought of in terms of graduations.

Each instrument collected demographic information specific to each population. This information described the background experiences of each population. The surveys also contained 22 identical response statements numbered for statistical purposes V₁ through V₂₂. These statements constituted the variables in the final statistical analysis of variance. The vocational administrator survey contained 7 unique demographic questions, numbered for statistical purposes A₁ through A₇, and 9 comparison profile questions, numbered for statistical purposes A₈ through A₁₆; the vocational teacher survey contained 8 unique demographic questions, numbered for statistical purposes T₁ through T₈; and lastly, the employer survey contained 7 unique demographic questions, numbered for statistical purposes E₁ through E₇.

Response statements V₁ through V₂₂ determined each population's perception on variables concerning requirements for community college

vocational teachers in California. The areas of teacher qualifications included academic, occupational, and pedagogical preparation; occupational contributions to their specific vocational discipline; and pre-service and in-service contributions to vocational education within their specific vocational discipline.

Vocational/occupational administrator survey.

The community college vocational administrator survey (see Appendix E) contained 7 unique demographic questions (A₁-A₇), 9 comparison profile questions (A₈-A₁₆), and 22 response statements common to all three populations (V₁-V₂₂). Demographic question A₁ through A₉ and rationale for each question are as follows:

Question A₁—**What county is your school located?** This question intended to illustrate the range of counties represented in the study.

Question A₂—**Please indicate your highest level of education....** This data measured the range of education represented by the administrator population.

Question A₃—**Years of occupational experience prior to becoming a teacher....** Data from this question established the range of occupational experience for the administrative population.

Question A₄—**Years of administrative experience....** This question established the range of administrative experience among the population. Additionally, this illustrated the percentage of administrators involved in the change from the former community college credential system to current minimum qualifications.

Question A₅—**Was your undergraduate degree in a vocational area?**

Data collected from this question established the percentage of vocational administrator respondents that have undergraduate educational experience directly related to their administrative assignment. Additionally, this data determined the relationship between vocational administrators and their background experiences with vocational elements.

Question A₆—**Was your graduate degree in a vocational area?** Data collected from this question established the percentage of vocational administrator respondents having graduate educational experience directly related to their administrative assignment. Similar in design to question A₅, data from this question determined the relationship between vocational administrators and their background experiences with vocational elements.

Question A₇—**What is the title of your present position?** This data qualified the administrative capacity of the respondent and defined their specific job title.

Administrator profile questions A₈ through A₁₁ asked administrator respondents to compare the previous method used to qualify vocational teachers for hire (credentialing) with the current minimum qualifications by responding *increased significantly, increased slightly, remained the same, decreased slightly, or decreased significantly* to four Likert scaled questions based on the following condition: **In comparing the past credential system to the present minimum qualifications for hiring vocational teachers, has the...**

Statement A₈—**quality of vocational education programs....** The rationale of this question attempted to determine if vocational administrators recognized any change in vocational programming related to changes in the criteria that qualify vocational teachers for employment.

Statement A₉—**quality of teachers applying for positions...** This question determined if vocational administrators recognized a quality change in vocational teachers applying for instructional positions resulting from changes in hiring requirements. Additionally, data from this question drew inferences specific to the elimination of pre-service pedagogical development from the hiring requirements.

Statement A₁₀—**pool of available teachers that qualify to instruct vocational subjects....** This question determined if changes in the hiring requirements influenced the number of teachers that qualify for community college assignments.

Statement A₁₁—**limitations on the development of new or better vocational programs....** Data from this question determined if changes in the hiring practices of vocational teachers effected the continuum of vocational programs, and drew inferences specific to the appropriateness of hiring changes.

Administrator profile questions A₁₂ through A₁₆ asked participants to respond *strongly agree, agree, no opinion, disagree, or strongly disagree* to the following five Likert scaled:

Statement A₁₂—**Academic preparation is an appropriate substitute for occupational work experience.** This question specifically addressed Article 2, §53410, items 1 and 2 of the *Minimum Qualifications for Faculty and Administrators in California Community Colleges* (see Appendix B).

Statement A₁₃—**Academic preparation has proven to be an asset to vocational teaching.** This question served as a validity indicator for question A₁₂ and provided rationale for Article 2, §53410, items 1 and 2 of the *Minimum Qualifications for Faculty and Administrators in California Community Colleges* (see Appendix B).

Statement A₁₄—Requiring increased academic development (higher college degree completion) will improve upon the present quality of vocational education. Data collected through this question indicated if administrators sought higher degree levels of vocational teachers with the notion that vocational needs can better be served by academically accomplished vocational teachers.

Statement A₁₅—Equivalencies to a college degree should be a consideration to qualify vocational teachers that do have not completed a college degree (e.g., military experience, private corporate trainer, etc.). This question indicated if administrators sought flexibility in teacher hiring practices.

Statement A₁₆—Vocational teachers that do not meet the minimum requirements for academic preparation should remain eligible for employment provided they fulfill the requirement within a reasonable time limitation. Similar in design to question A₁₅, this question indicated if administrators sought flexibility in teacher hiring practices.

Vocational/occupational teacher survey.

The community college vocational teacher survey (see Appendix F) contained 8 unique demographic questions (T₁-T₈) and 22 response statements common to all three populations (V₁-V₂₂). Demographic questions T₁ through T₈ and rationale for each question are as follows:

Question T₁—In what county is your school located? This question documented the range of counties represented in the study.

Question T₂—What best classifies your vocational subject? This question documented the range of vocational disciplines represented in the survey.

Question T₃—Please indicate your highest level of education.... This data measured the range of education represented by the teacher population.

Question T₄—Was your undergraduate degree in a vocational area? Data collected from this question established the percentage of vocational teacher respondents that have undergraduate educational experience directly related to their teaching assignment.

Question T₅—Was your graduate degree in a vocational area? Data collected from this question established the percentage of vocational teacher respondents that have graduate educational experience directly related to their teaching assignment.

Question T₆—Years of occupational experience prior to becoming a teacher.... Data from this question measured the occupational experience range represented by the teacher population.

Question T₇—Years of vocational teaching experience.... This question established the range of instructional experience represented by the teacher population.

Question T₈—Are you currently certified or licensed by a professional organization, state board, union, or any other nationally recognized organization related to your profession? Data from this question indicated the range of teachers currently certified in their vocational subject.

Employer survey.

The employer survey (see Appendix G) contained 7 unique demographic questions (E₁-E₇) and 22 response statements common to all three populations (V₁-V₂₂). Demographic questions E₁ through E₇ and rational for each question

are as follows:

Question E₁—**What county is your business located?** This question documented the range of counties represented in the study.

Question E₂—**What best classifies your business or occupation?** This question documented the range of vocational disciplines represented in the survey.

Question E₃—**Do you conduct or participate in the hiring of employees at your business?** This question documented the employer's hiring capacity.

Question E₄—**Has your business hired employees or considered applicants for employment having community college vocational education?** This question validated the respondent as a consortium participant, and determined the range of employers participating in the study that have considered vocational students for employment.

Question E₅—**Please indicate your highest level of education....** This data measured the range of education represented by the employer population.

Question E₆—**Years of experience in your present occupation....** This data measured the range of occupational experience represented by the employer population.

Question E₇—**Are you currently certified or licensed by a professional organization, state board, union, or any other nationally recognized organization related to your profession?** Data from this question indicated the range of employers currently certified in their occupation.

Response statements formulating the analysis of variance.

In addition to demographic inquiries, the three surveys contained 22

identical statements numbered for statistical purposes V₁ through V₂₂. These questions constituted the variables in the final statistical analysis of variance. Statements V₁ through V₄ were Likert scale questions whereby participants responded *strongly agree, agree, no opinion, disagree, or strongly disagree* to variables specific to pre-service vocational teacher requirements. Statements V₅ through V₇ were closed ended criteria questions addressing pre-service academic and occupational development for perspective vocational teachers. Statements V₈ through V₁₆ were Likert scale questions whereby participants responded *strongly agree, agree, no opinion, disagree, or strongly disagree* to variables specific to in-service vocational requirements. Statements V₁₇ through V₂₂ were Likert scale questions whereby participants responded *strongly agree, agree, no opinion, disagree, or strongly disagree* to variables specific to vocational teacher pedagogical development.

Lastly, all three survey forms thanked respondents for participating and extended the opportunity to comment on the survey. Additionally, results of the study were offered to all participants as a measure of reciprocity.

Pilot Study

A pilot study was conducted to evaluate each questionnaire's content, clarity, vocabulary, statistical merit, and ease of completion. Based on recommendations from the pilot group, adjustments were made in the vocabulary to provide uniform understanding across the three populations participating in the study. For example, the term *teacher preparation and teaching method* replaced the term pedagogy.

Participants of the pilot group included (a) an employer; (b) a former

vocational education graduate advisor; (c) a California State University, San Bernardino vocational education graduate student; (d) a community college vocational teacher; and (e) the statistician who numerically treated the raw data. Pilot group participants were not included in the study populations.

Assumptions Regarding the Population Sample

The study assumed the sample from the employer population possessed a reasonable level of education and sufficient information to provide reliable responses to the questions and statements contained in the survey. Additionally, the study assumed the limited number of employer samples obtained from three counties generalized the perceptions of employers not represented in the study.

Data analyzed using the foregoing procedures provided a framework for absolving the nature of the data. Sample statistics obtained from the raw data specific to each variable provided rational for the findings and discussions expressed in chapter IV.

Chapter IV

Findings and Discussions

Preface to the Findings

The statistical computer run expressed results to the fourth decimal place. For purposes of reporting, percentages expressed in the study have been rounded to the nearest one tenth. Consequently, throughout the findings, text, figures, and tables may not always total 100%. Expressions of mean, standard deviation, and *F* statistics have been rounded to the nearest one hundredth (see Appendix H).

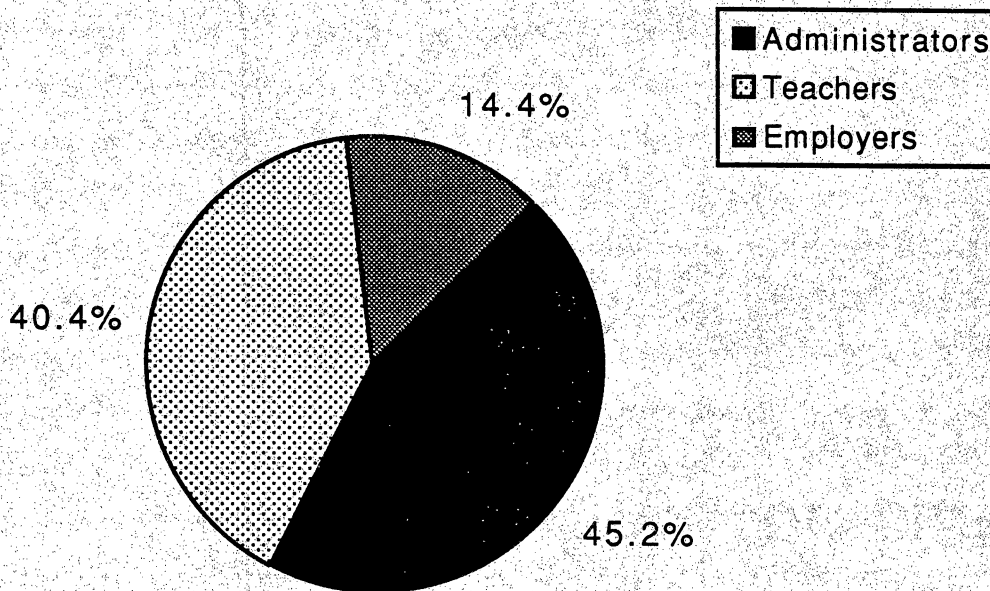
Demographic Findings

Data collected for the study yielded a total of 104 surveys (see Figure 4-1): 47 administrators (45.2%), 15 employers (14.4%), and 42 teachers (40.4%). The demographics of each population are quite different, therefore, each will be discussed separately in the following text.

Administrator sample demographic findings.

Administrators responding to the survey represented 20 valid counties within California with 2 not indicating. Administrative titles included Department Chairperson (2.1%), Associate Dean (12.8%), Assistant Dean (8.5%), Director (4.3%), Dean (66.0%), and Other (6.4%) that were not appropriately identified by title in the survey. The data indicated that a majority of administrators held a master's degree (51.1%), a doctorate was second (36.2%), and an associate's degree was third (12.8%).

Figure 4-1. Participants in the study.



The majority of administrators represented in the study (63.8%) indicated having 10 or more years administrative experience, 21.3% indicated having 6-9 years, 8.5% indicated having 3-5 years, and 6.4% indicated having 1-2 years administrative experience. Significant to the findings was the degree major held by the administrative sample. As illustrated in Table 4-1, 57.4% of administrators indicated having an undergraduate degree in a vocational subject and 38.3% indicated having a graduate degree in a vocational subject.

Table 4-1 — Administrators' Vocational Education Background Experiences.

	undergraduate degree		graduate degree	
	Frequency	Percent	Frequency	Percent
Vocational Subject	27	57.4	18	38.3
Non-vocational Subject	20	42.6	29	61.7

Administrator profile.

Unique to the administrator survey were 9 profile questions (A8-A16). Variables A8 through A11 asked administrator respondents to compare the previous method used to qualify vocational teachers for hire (credentialing) with the current minimum qualifications. Responding to variable A8 (see Table 4-2), 76.6% stated the qualifying method change did not alter the quality of vocational programs, 8.5% noticed an increase in quality resulting from the change, and 14.9% indicated the quality had decreased.

Table 4-2 — Vocational Program Quality Resulting from Minimum Qualifications.

THE QUALITY OF VOCATIONAL PROGRAMS HAS...			
	Value	Frequency	Percent
Decreased Significantly	1	0	0.0
Decreased Slightly	2	7	14.9
Remained the Same	3	36	76.6
Increased Slightly	4	3	6.4
Increased Significantly	5	1	2.1
<i>M = 2.96; SD = .55</i>			

Additionally, the sample was asked if the quality of new teachers had changed in relationship to the change in hiring requirements. Respondents to variable A9 concluded that 66.0% perceived the quality of teachers had remained the same, 17.1% perceived teacher quality to have increased, while 17.0% perceived the quality of teachers to have decreased after the change in hiring practices (see Table 4-3).

Table 4-3 — Vocational Teacher Quality Resulting from Minimum Qualifications.

QUALITY OF VOCATIONAL TEACHER APPLICANTS HAS...			
	Value	Frequency	Percent
Decreased Significantly	1	4	8.5
Decreased Slightly	2	4	8.5
Remained the Same	3	31	66.0
Increased Slightly	4	6	12.8
Increased Significantly	5	2	4.3
<i>M = 2.96; SD = .86</i>			

Variable A10 asked if the availability of teachers qualifying for employment after the change in hiring requirements was altered. Data indicated that administrators perceived a 55.3% decrease in the pool of available teachers that qualify under the minimum qualifications (see Table 4-4).

Table 4-4 — Vocational Teacher Availability Resulting from Minimum Qualifications.

	POOL OF AVAILABLE TEACHERS HAS...		
	Value	Frequency	Percent
Decreased Significantly	1	11	23.4
Decreased Slightly	2	15	31.9
Remained the Same	3	14	29.8
Increased Slightly	4	5	10.6
Increased Significantly	5	2	4.3
<i>M</i> = 2.40; <i>SD</i> = 1.10			

Additionally, variable A₁₁ asked if limitations have been placed on the development of new vocational programs as a result of hiring changes. Table 4-5 illustrates that 46 respondents (31.9%) indicated some degree of decreased program development, 19 respondents (40.4%) indicated no change, and 12 respondents (25.6%) indicated some degree of increased program development resulting from minimum qualifications.

Table 4-5 — Vocational Program Development Limitations Resulting from Minimum Qualifications.

LIMITATIONS ON THE DEVELOPMENT OF NEW PROGRAMS HAS...			
	Value	Frequency	Percent
Decreased Significantly	1	5	10.6
Decreased Slightly	2	10	21.3
Remained the Same	3	19	40.4
Increased Slightly	4	10	21.3
Increased Significantly	5	2	4.3
No Response	9	1	2.1
<i>M = 2.87; SD = 1.02</i>			

Variables A₁₂ through A₁₄ specifically addressed the issue of a vocational teacher's academic preparation. As illustrated in Table 4-6, variable A₁₂ revealed 83.0% of the sample agreed that academic preparation is not an appropriate substitution for work experience. Variable A₁₃ revealed 95.7% of the sample perceived academic preparation an asset to vocational teaching, yet, when asked in variable A₁₄ if increased academic development of teachers will improve the present quality of vocational education, sample responses split with 57.4% agreeing and 38.3% disagreeing.

The last two variables unique to the administrative sample asked specific questions pertaining to whether or not flexibility should be a consideration for teachers that do not meet the minimum requirements for hire. Results from variable A₁₅ indicated 80.9% agreed that equivalencies to a college degree should be a consideration to qualify vocational teachers that have not completed the

Table 4-6 — Perceptions on Vocational Teacher Academic Preparation.

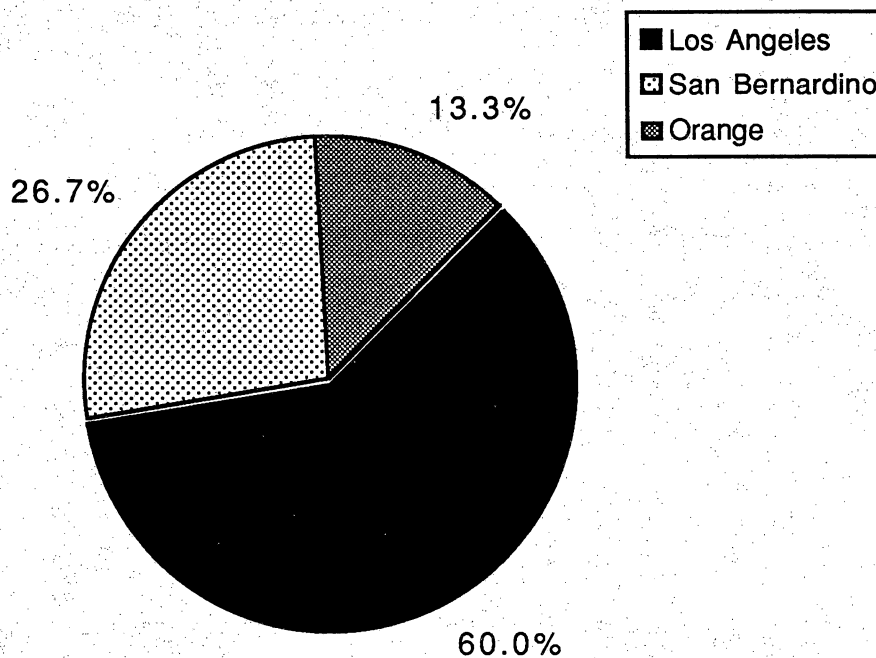
ACADEMIC PREPARATION IS AN APPROPRIATE SUBSTITUTE FOR WORK EXPERIENCE			
	Value	Frequency	Percent
Strongly Disagree	1	13	27.7
Disagree	2	26	55.3
No Opinion	3	1	2.1
Agree	4	5	10.6
Strongly Agree	5	1	2.1
No Response	9	1	2.1
<i>M = 2.02; SD = .98</i>			
ACADEMIC PREPARATION IS AN ASSET TO VOCATIONAL TEACHING			
	Value	Frequency	Percent
Strongly Disagree	1	1	2.1
Disagree	2	1	2.1
No Opinion	3	0	0.0
Agree	4	33	70.2
Strongly Agree	5	12	25.5
<i>M = 4.15; SD = .72</i>			
INCREASED ACADEMIC DEVELOPMENT WILL IMPROVE VOCATIONAL EDUCATION			
	Value	Frequency	Percent
Strongly Disagree	1	3	6.4
Disagree	2	15	31.9
No Opinion	3	2	4.3
Agree	4	23	48.9
Strongly Agree	5	4	8.5
<i>M = 3.21; SD = 1.78</i>			

minimum college degree requirements while 19.1% disagreed. Additionally, responding to variable A₁₆, 91.4% of the sample agreed that vocational teachers that do not meet the minimum requirements for academic preparation should remain eligible for employment provided they fulfill the requirements within a reasonable time limitation and only 8.6% disagreed.

Employer sample demographic findings.

The employer sample constituted 14.4% of the total respondents represented in the study ($n = 15$). Employers responding to the survey represented 3 counties: 9 from Los Angeles, 4 from San Bernardino, and 2 from Orange (see Figure 4-2).

Figure 4-2. Counties represented by employers.



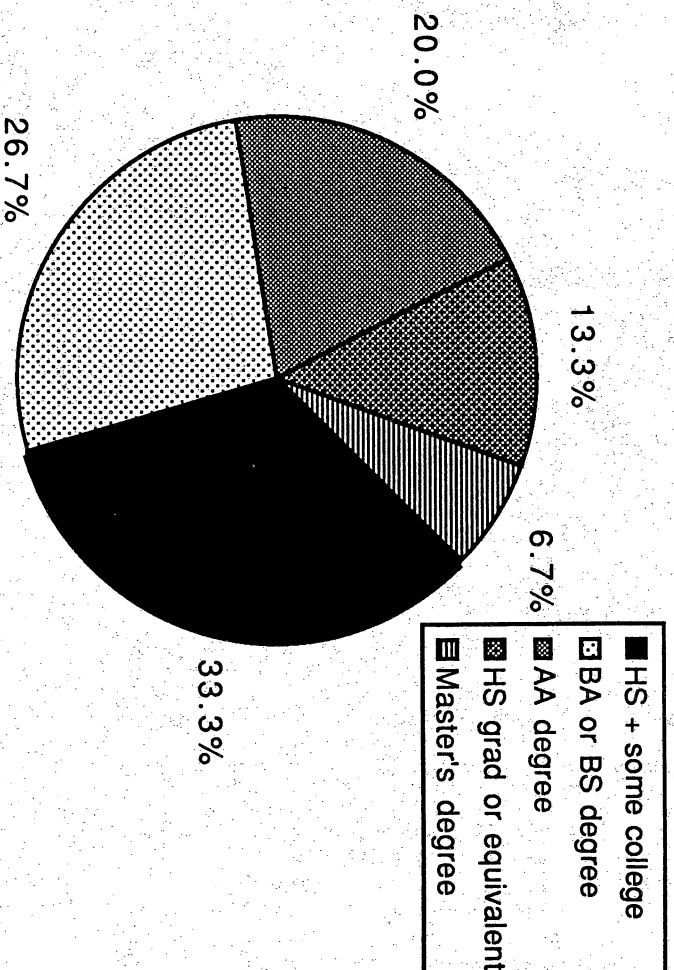
Occupational classifications included Distributive (26.7%), Trade or Industry (46.7%), and Other (26.7%) that were not appropriately identified by classification in the survey. All respondents indicated they conduct or participate in the hiring of employees at their business, 73.3% indicated they considered applicants for employment having community college vocational education while 26.7% were not certain. The level of education maintained by employer population ranged from high school graduate or equivalent to master's degree. The exact education range is represented in Figure 4-3.

The majority of employers (80.0%) represented in the study indicated having 10 or more years experience in their present occupation, 6.7% indicated having 6-9 years, 6.7% indicated having 3-5 years, and 6.7% indicated having 1-2 years experience in their present occupation. Additionally, 66.7% of the sample maintained a license or certification by a professional organization, state board, union, or other state or national organization related to their profession.

Teacher sample demographic findings.

Similar to the administrator sample, teachers responding to the survey represented 20 valid counties within California with 2 not indicating. Vocational teacher subject classifications included Business and Office Education (31.0%), Trade and Industry (21.4%), Technology Education (16.7%), Health Occupations Education (14.3%), Agriculture Education (2.4%), Home Economic and Consumer Education (2.4%), and Other (11.9%) that were not appropriately identified by subject in the survey.

Figure 4-3. Education range maintained by employer sample.



The majority of teachers (66.7%) represented in the study indicated having a master's degree, 14.3% indicated having a doctorate, 11.9% indicated having an AA degree, 4.8% indicated having a BA or BS degree, while 2.4% indicated having a high school diploma plus some college. As illustrated in Table 4-7, 66.7% of teachers indicated having an undergraduate degree in a vocational subject and 52.4% indicated having a graduate degree in a vocational subject.

Table 4-7 — Teachers' Vocational Education Background Experiences.

	undergraduate degree		graduate degree*	
	Frequency	Percent	Frequency	Percent
Vocational Subject	28	66.7	22	52.4
Non-vocational Subject	14	33.3	14	33.3

*Note: Six teachers surveyed (14.3%) did not have a graduate degree.

The majority of teachers (42.9%) represented in the study indicated having 10 or more years of occupational experience prior to becoming a teacher, 26.2% indicated having 6-9 years, 14.3% indicated having 3-5 years, and 7.1% indicated having 1-2 years of occupational experience prior to becoming a teacher. Experienced vocational teachers constituted the majority of respondents with 71.4% of the sample having 10 or more years teaching experience. Additionally, 66.7% of the sample maintained a license or certification by a professional organization, state board, union, or other state or national organization related to their profession.

Findings on the Study's 22 Independent Variables

Variables V₁ through V₂₂ determined each population's perception on pre-service, in-service, and pedagogical issues related to the hiring of community college vocational teachers in California. To determine the order of acquisition, Scheffé's multiple comparison test was performed on each variable. Of the 22 variables that constituted the study, only variable 1 revealed a statistically significant effect from the one-way analysis of variance. The group mean (*gM*)

determined the level of agreement for each variable where no two groups were significantly different at the 0.05 level. Results of the 22 variables are listed in Appendix H.

Pre-service findings.

Variables V₁ through V₇ of the study examined pre-service qualities of vocational teachers. With a value label assigned to each response, the group mean determined the level of agreement for each variable. The value labels assigned to variables V₁ through V₄ are as follows: 1 = Strongly Disagree, 2 = Disagree, 3 = No Opinion, 4 = Agree, and 5 = Strongly Disagree.

Table 4-8 — Employment Considerations Based on Academic Development.

ACADEMIC PREPARATION BASED STRICTLY ON COLLEGE DEGREE			
	Count	<i>M</i>	<i>SD</i>
Administrators	46	2.00	.82
Employers	13	2.92	1.26
Teachers	40	2.55	1.30
<i>F</i> (2, 96) = 4.64, <i>p</i> <.05			

Variable 1 indicated that vocational administrators and teachers were significantly different from each other, as were employers and teachers when asked if a teacher’s academic preparation used for employment consideration should be strictly based on completion of a specific college degree, $F(2, 96) = 4.64$, $p < .05$. Samples mean scores and standard deviations on variable 1 are presented in Table 4-8. The remaining 6 variables (V₂-V₇) failed to indicate a significant

variance on pre-service practices at the 0.05 level yielding consensus to the group's results on pre-service vocational teacher qualities as examined in the study.

According to the group, occupational experience is an asset to vocational teachers (variable V_2) with a $gM = 4.76$, $F(2, 101) = 2.45$. Work experience directly related to a teacher's assignment when considering a perspective teacher for employment was supported by the group (variable V_3) with a $gM = 4.67$, $F(2, 101) = 1.91$. The group ranked recency of occupational experience directly related to a teacher's assignment a priority when considering a perspective teacher for employment (variable V_4) with a $gM = 4.50$, $F(2, 101) = 2.15$.

The value labels for variables V_5 and V_6 are as follows: 1 = 1-2 years, 2 = 3-4 years, 3 = 5-6 years, 4 = 7 or more years, and 5 = should not be a consideration. Variable V_5 scored a $gM = 2.50$, $F(2, 100) = .31$, indicating that, on average, 3-4 years of occupational experience was perceived appropriate for a vocational teacher. Recency of occupational experience (variable V_6) scored a $gM = 2.20$, $F(2, 98) = .95$, indicating that, on average, work experience should be as recent as 3-4 years when considering a teacher for employment.

The value labels assigned to variable V_7 are as follows: 1 = High School Diploma, 2 = AA Degree, 3 = BA or BS Degree, 4 = Master's Degree, 5 = Doctorate, and 6 = varied. The degree level appropriate for a vocational teacher, as perceived by the group, scored a $gM = 2.74$, $F(2, 100) = 2.64$, indicating a college preparation at the two-year or associate degree level.

The results of variables V_2 through V_7 have indicated that work experience, and the relative recentness of that experience, are important factors when considering vocational teachers for employment by all group participants.

Additionally, the data determined college preparation at the two-year level to be appropriate preparation for community college vocational teachers.

In-service findings.

Variables V₈ through V₁₆ determined the group's perception on issues of in-service vocational teacher qualities. The value labels assigned to variables V₈ through V₁₆ are as follows: 1 = Strongly Disagree, 2 = Disagree, 3 = No Opinion, 4 = Agree, and 5 = Strongly Disagree.

An analysis of variance failed to indicate a significant variance on any variable related to in-service practices at the 0.05 level yielding consensus to the group's results on in-service vocational teacher qualities as examined in the study. Data from the study indicated, on 6 of the 9 in-service variables (V₈-V₁₃), the group agreed that vocational teachers should peruse in-service development as a condition of employment. The group mean failed to yield an opinion on variables V₁₄, V₁₅, and V₁₆ examining whether or not vocational teachers should submit progress reports to related agencies ($gM = 3.63$); submit articles to professional journals ($gM = 3.24$); and, participate in state or national conferences ($gM = 3.79$). Table 4-9 summarizes variables V₈ through V₁₆ and indicates the group mean score and standard deviation for each in-service condition examined in the study.

Pedagogical findings.

Variables V₁₇ through V₂₂ determined the group's perception on issues of vocational teacher pedagogical development. The value labels assigned to variables V₁₇ through V₂₂ are as follows: 1 = Strongly Disagree, 2 = Disagree, 3 = No Opinion, 4 = Agree, and 5 = Strongly Disagree.

Table 4-9 — Group Mean and Standard Deviation for Variables V8 through V16.

As a condition of employment, community college vocational teachers should...		
	<i>gM</i>	<i>SD</i>
V8—exchange information with business and industry	4.33	0.79
V9—remain certifier and/or licensed	4.08	1.07
V10—continue personal occupational development	4.31	0.74
V11—contribute classroom information to other teachers	4.28	0.73
V12—contribute occupational information to other teachers	4.31	0.75
V13—establish reciprocal exchange of knowledge with industry	4.44	0.74
V14—submit progress reports to related agencies	3.63	1.03
V15—submit articles to professional journals	3.24	1.07
V16—participate in state or national conferences	3.79	0.95

Again, an analysis of variance failed to indicate a significant variance on any variable related to pedagogical development at the 0.05 level yielding consensus to the group's results on in-service vocational teacher qualities as examined in the study. Data from the study indicated, relative to the group's perceptions, that vocational teachers should be pedagogically competent as described in variables V17 through V22. The group placed the least emphasis on evaluating students consistent with methods established for academic subjects ($gM = 4.10$) and emphasized competence in lecture, demonstration and hands on teaching methods ($gM = 4.73$). Table 4-10 summarizes variables V17 through V22 and indicates the group mean score and standard deviation for each pedagogical variable examined in the study.

Table 4-10 — Group Mean and Standard Deviation for Variables V17 through V22.

	Community college vocational teachers should...	
	<i>gM</i>	<i>SD</i>
V17—be able to evaluate student’s basic skills	4.31	0.82
V18—have knowledge of different student learning styles	4.60	0.55
V19—have competence in various teaching methods	4.73	0.47
V20—have resource knowledge related to occupational education	4.68	0.47
V21—have competence in vocational student evaluation methods	4.56	0.68
V22—evaluate students consistent with academic subjects	4.10	1.34

Findings that Addressed the Research Questions

Research question 1 sought to find the following: Is there a significant difference in the perceptions of community college vocational teachers, employers, and community college vocational administrators regarding the following five variables: (a) What amount of work experience appropriately qualifies a teacher for a community college vocational teaching position; (b) What nature and scope of work experience appropriately qualifies a teacher for a specific community college vocational instructional position; (c) What level of academic preparation appropriately qualifies a teacher to effectively provide community college vocational instruction; (d) What amount of pre-service pedagogical preparation appropriately qualifies a teacher to effectively provide community college vocational instruction; and (e) What amount of in-service pedagogical and technical preparation appropriately qualifies a teacher to effectively provide community college vocational instruction?

The study indicated no significant difference among the perceptions of community college vocational administrators, teachers, or employers regarding part one (a) of research question 1 — **What amount of work experience appropriately qualifies a teacher for a community college vocational teaching position?** The group mean yielded a score of 2.50 on variable V₅ perceiving 3-4 years of work experience an appropriate qualification for a vocational teacher. Additionally, through variable V₆, the group perceived the appropriate recency of occupational experience to be a 3-4 year time frame for qualifying a vocational teacher for employment.

The study indicated no significant difference among the perceptions of community college vocational administrators, teachers, or employers regarding part two (b) of research question 1 — **What nature and scope of work experience appropriately qualify a teacher for a specific community college vocational instructional position?** Variables V₂ through V₄ of the survey addressed part two (b) of research question 1. The group mean score on variable V₂ ($gM = 4.76$) perceived occupational experience to be an asset to vocational teachers. Occupational experience directly related to a perspective teacher's assignment (variable V₃) scored a group mean of 4.67, determining it to be a priority consideration. Addressed by variable V₄, the recency of a perspective teacher's occupational experience was determined to be a priority yielding a group mean score of 4.50.

The study indicated no significant difference among the perceptions of community college vocational administrators, teachers, or employers regarding part three (c) of research question 1— **What level of academic preparation appropriately qualifies a teacher to effectively provide community college**

vocational instruction? Variable V₇ of the survey addressed part three (c) of research question 1. The group mean of 2.74 perceived an AA degree level appropriate for vocational teachers.

The study indicated a significant difference at the 0.05 level when asked if employment considerations should be strictly based on academic preparation (variable V₁). This significant difference addressed research question 2 — **Is there a significant difference among any of the variables and, if so, what is the source of that variation?** Administrators had a stronger tendency to support academic preparation when making employment considerations than did teachers and employers.

Variables V₁₇ through V₂₂ addressed issues of vocational teacher pre-service pedagogical development. The study indicated no significant difference among the perceptions of community college vocational administrators, teachers, or employers regarding part four (d) of research question 1 — **What amount of pre-service pedagogical preparation appropriately qualifies a teacher to effectively provide community college vocational instruction?** All three groups agreed that vocational teachers should be pedagogically proficient (as represented in the 6 study variables), thereby providing rationale for reinstating pedagogical development as a requirement for vocational teachers.

The study indicated no significant difference among the perceptions of community college vocational administrators, teachers, or employers regarding part five (e) of research question 1 — **What amount of in-service pedagogical and technical preparation appropriately qualifies a teacher to effectively provide community college vocational instruction?** Conditions of in-service development were addressed in variables V₈ through V₁₆. The study indicated

the most salient in-service conditions for vocational teachers, as examined through the study, were: (variable V₈) to establish reciprocity with business and industry ($gM = 4.33$); (variable V₉) remain certified in their vocation ($gM = 4.09$); (variable V₁₀) continue their occupational development after employment ($gM = 4.31$); (variable V₁₁) contribute classroom-specific information to the teaching profession ($gM = 4.31$); and (variable V₁₂) contribute occupation-specific information to the teaching profession ($gM = 4.44$). The study yielded no opinion on vocational teachers submitting progress reports to various agencies (variable V₁₄; $gM = 3.63$), submitting articles to professional journals (variable V₁₅; $gM = 3.24$), and presenting information at conferences (variable V₁₆; $gM = 3.79$).

Results from the in-service findings have clearly indicated concern for continued vocational teacher development after hire, thereby providing rationale for including in-service development and continued teacher certification in the hiring requirements. Currently, the minimum qualifications do not address in-service issues restricting them to tenure considerations.

Discussion of the Findings

The demographic findings of the administrator population indicated that 57.4% of the sample had undergraduate vocational experience and only 38.3% had graduate experience in vocational subjects. Additionally, 66.7% of the teacher population had undergraduate vocational experience and only half (52.4%) had graduate experience in vocational subjects. The dilemma from this issue addressed Allen's (1974) position that vocational delivery systems should reflect academically prepared and vocationally competent teachers. Expanding on Allen's argument, vocational education should be conducted by vocationally

educated and accomplished administrators sensitive to vocational issues.

The uniqueness of vocational education extends beyond subject matter. The practical facilitation of vocational delivery methods landmark a point of departure from academic subjects. Formidable on this issue is the expectation that vocational education be reactive to the dynamics of business and industry.

Findings indicated the administrator population perceived academic preparation to be an asset to vocational education (variable A₁₃; $M = 4.15$) as well as work experience directly related their to teaching assignment (variable V₃; $M = 4.66$). Administrators equally perceived both qualities with mean scores above 4.10. These findings are consistent with research by Miller (1985) that concluded time on task does not equate to occupational competency suggesting discretion when making pre-service hiring decisions based strictly on occupational experience. Additionally, the group mean indicated that vocational teachers should be certified in their vocation ($gM = 4.08$).

The group unanimously supported all six survey variables (V₁₇-V₂₂) related to pedagogical development indicating support for pedagogically-competent teachers. The minimum qualifications prove exceptional on the issue of teacher preparation by not requiring pedagogical development for community college vocational teachers. Vocational teacher recruiting practices have drawn individuals from business and industry with little more development than what they learned while on-the-job. The results of this recruitment process have led beginning teachers to question their ability as a teacher, not their technical knowledge. Scott (1988) argued this method of induction has several shortcomings and denounced the trial and error method of teacher induction. The implications revealed distantly different vocational teacher maturity

processes. The first being that of technical development, most closely related to occupational experience, and the second being teacher preparation.

Data from the study indicated 55.1% of administrators perceived the pool of available teachers that qualify to instruct vocational subjects has decreased since enactment of the minimum qualifications (variable A₁₀). The most salient concern is that teacher recruitment practices will be compromised to fill the deficit. Miller (1985) indicated the results of such compromise have detracted from the professional image of vocational education. The importance of having a measurable and unalterable standard of minimum teacher requirements becomes essential to maintain (or obtain) a professional teaching standard.

Many researchers have focused on in-service minimum teacher standards. Attention given to vocational teacher competency suggests concern for having the most qualified teachers in vocational positions. In order for vocational programs to justify accountability, the occupational standards of teachers must equal or exceed that of the industry they represent. The study provided rationale for including in-service requirements in the minimum qualifications from variables V₈ through V₁₃ currently not addressed in the minimum qualifications.

Data indicated the following issues prominent to vocational teacher pre-service qualifications: academic preparation equivalent to a two-year degree level, occupational experience ranging from 3 to 4 years, recency of occupational experience ranging from 3 to 4 years, and work experience directly related to the prescribed assignment. The minimum qualifications currently do not place limitations on occupational recency rendering them inconsistent with currently identified concerns.

Vocational teacher certification, although classified by the study as an in-

service variable (V₉), addresses a prominent criterion of pre-service deliberation. Research by Kapes and Welch (1985) studied occupational competency factors such as writing, mathematics, and skill-specific tasks of teachers. The survey population represented 43 different occupations and trades. The testing model used in their research was developed by the National Occupational Competency Testing Institute (NOCTI). Results concluded that NOCTI-type examinations were a significant indication of preparation and should be used to make pass or fail decisions for perspective vocational teachers. Although more than 50 occupations are represented by NOCTI, the minimum qualifications do not acknowledge the existence of any occupational testing program. Such programs may offer assistance to the issue of hiring flexibility for vocational teachers that have not completed a college degree as described in the administrator survey (variable A₁₆). Kapes and Welch suggested that strict adherence to an occupational testing program may result in an insufficient supply of vocational teachers reducing the issue to compromise or quality.

Supplemental Findings

In addition to Scheffé's post hoc test, the one-way analysis of variance, and the group mean ranked order of agreement, a 2-tailed analysis of correlation was performed to identify correlation coefficients significant at the 0.05 level. The data yielded a total of 95 correlational values where $p < .05$. The significant correlation of these variables is strictly a random occurrence and not a design factor of the study.

Most salient among the correlational findings were variables V₂₁ and V₂₂. Variable V₂₁ indicated that vocational teachers should have competence in

student evaluation methods unique to vocational education, while variable V₂₂ indicated that vocational teachers should evaluate students consistent with the methods established for academic subjects ($p=.000$). This correlation substantiated the argument presented by Finch (1991) that basic education standards for vocational-bound students be more readily available.

The foregoing correlation reveals a dichotomy within the study, consistent with other studies, on vocational teacher preparation (see Chapter II, Occupational Teacher Preparation and Qualifications). Findings from these various studies have indicated concern for a more academically prepared vocational teacher yet, the compromise is a limited quantity of teachers that qualify for employment. As an example, findings in *The Unfinished Agenda* (National Commission on Secondary Vocational Education, 1985) recommended that vocational teachers attain the same level of education as their academic counterparts. Results, if applied to this study, indicate that only 66.7% of the current teacher population would academically qualify for employment based on this recommendation. This issue may also explain the insignificant correlation between variables V₇ and V₂₂ ($p=.193$) indicating a two-year or associate degree level sufficient for vocational teachers.

Findings indicated several significant points of departure between current hiring practices and those perceived by study participants. Information based on these findings provided rational for the recommendations discussed in chapter V.

Chapter V

Conclusion and Recommendations

Conclusion

The Secretary's Commission on Achieving Necessary Skills (SCANS, 1991), recommended the movement toward a high-performance workplace: one that emphasized problem-oriented work and flexible workers with broad skills. Changes identified by SCANS have a specific impact on present delivery methods used in education. Vocational teachers need to incorporate basic skills instruction into their curricula, and academic teachers need a broad understanding of workplace requirements. To raise the level of education consistent with SCANS, a collaborative effort is required between vocational and academic teachers. Never before in history has the division of academic and vocational education been more out-of-place and out-of-time than at present.

The movement toward a globally competitive workforce has a significant impact on the methods used to prepare students for gainful employment. Educational delivery systems need to be reactive to changes in the workplace and vocationally competent and academically prepared teachers have never been more important than at present. Therefore, the purpose of the study was to examine the current minimum qualifications document for hiring community college vocational teachers in California. Data gathered from vocational administrators, teachers, and employers identified several exclusions in current teacher hiring practices. The most salient concerns were pedagogical and continued in-service development requirements for vocational teachers.

Enactment of the minimum qualifications eliminated all pedagogical development requirements for perspective vocational teachers leaving many questioning their ability to effectively instruct. The uniqueness of vocational delivery systems has effectively been established through the literature review (see Chapter II, Vocational teacher academic preparation., and Vocational teacher occupational preparation.) disqualifying the notion a perspective vocational teacher will acquire the needed teaching skill by attending conventional college courses. Findings from the study conclusively indicated a consortium agreement for including pedagogical and in-service development as a requirement for employment.

Continuation of in-service development, as identified in the study, proved significant among all populations. Again, the minimum qualifications negate the issue of in-service development contrasting identified concerns for continued teacher development. One of the most notable issues among continued teacher development is teacher certification. Survey participants unanimously endorsed continued teacher occupational certification providing rationale for including teacher certification as a condition of employment.

California has a system of vocational teacher accountability with limited autonomy. The concern for accountability transcends into every occupation—including the teaching profession. The inclusion of in-service development can certainly relieve the burden of responsibility if issues of teacher qualification arise further reinforcing the need for in-service development.

The study identified occupational, academic, and pedagogical competencies expected of community college vocational teachers upon employment. Results from the study and accompanying recommendations will

be forwarded to the Chancellor's Office of California Community Colleges for the next comprehensive review of the *Minimum Qualifications for Faculty and Administrators in California Community Colleges* document scheduled for 1996.

Recommendations Based on the Findings

Several recommendations inferred from the findings can improve the quality of vocational education in California. The limited number of administrators (38.3%) and teachers (52.4%) having graduate education experience in vocational subjects are certainly influenced by the availability of programs offered in California. California State University, San Bernardino and California State University, Long Beach are the preeminent vocational education granting institutes in the state. Regional constraints of the two campuses leave many pursuers of graduate education to compromise their major. This issue is further complicated by the fact California lacks a doctoral granting institute in vocational education. Therefore, it is recommended the University of California system expand the number of vocational educational programs in the state and implement a doctorate program in vocational education.

Inclusion of occupational competency testing was documented through the findings. Under current confines of California's hiring practices, academic teacher preparation is measured by college degree completion, but occupational competency has no measurement system. Therefore, it is recommended that a model, such as the one provided by the National Occupational Competency Testing Institute (NOCTI), become an integral component of the minimum qualifications for making pass or fail decisions for perspective vocational teachers.

Exclusion of in-service development from the minimum qualifications entertains the potential for vocational teacher complacency. Therefore, as a condition of hire, it is recommended that vocational teachers pursue in-service development consistent with but not limited to the conditions identified through the study.

Lastly, the most prominent dysfunctional criterion identified through the literature review, telephone interviews during the content validation of the questionnaire (see Chapter III), and results of the findings were the exclusion of pedagogical development from the minimum qualifications document. According to Heath-Camp and Camp (1990), new vocational teachers encounter both positive and negative experiences when beginning their careers as teachers. Teachers who do not experience teacher-education prior to teaching are usually unfamiliar with what is meant by curriculum, lesson planning, vocational student organizations, and the misbehavior of students. Clearly, the support for andragogical and pedagogical development of vocational teachers cannot be ignored by policy makers. Therefore, it is recommended that pedagogical skills be a condition of hire for all perspective community college vocational teachers.

Recommendations for Further Research

The issue of granting flexibility to teachers that do not meet the minimum qualifications can lead to concerns addressed by Miller (1985) of compromising education in order to fill a teaching position. The results of which question the professional nature of vocational education. Therefore, further research is needed—prior to including equivalencies in the minimum qualifications—on what equivalencies are appropriate.

Findings in the study suggested a two-year or associate degree level appropriate for community college vocational teachers. Additionally, the study complimented the literature in expressing increased academic content and evaluation in vocational education. The concern identified by the researcher is whether or not a two-year degree provides an individual the needed competency to effectively evaluate student's basic skills. Therefore, further research is needed to qualify this issue.

Occupational competency testing, licensing, and certification is offered by NOCTI, various professional organizations, state boards, unions, and other state or nationally recognized organizations. Data from the study perceived certification as a positive in-service contingency. Therefore, further research is recommended to compile a listing of all licensing and certifying organizations, their areas of certification, and their effectiveness. Results from this further research can then be included as a condition of employment as minimum qualifications.

Appendix A

Machine Action Project (MAP) Results

The Machine Action Project (MAP) conducted in 1991-1992, surveyed seven-hundred thirty workers in three trades: automotive repair, printing, and machining. In the findings of this study, McGraw & Farrant (1992) reported:

The research shows that the increasing use of advanced technologies is effecting these trades. Workers are cognizant of the ways in which these changes have occurred and how they have altered many of the skill requirements of the workers' jobs. Contrary to popular myth, the workers surveyed were generally educated, skilled, and desired advanced training.

- 43.8% have taken at least one skills upgrading course since getting into the trade
- 65.7% would like more variety in their job assignments
- 70.2% use math skills frequently or all the time
- 73.5% use problem-solving skills either frequently or all the time
- 92.2% would like to further advance their skills. (p. 1)

In addition, McGraw & Farrant (ibid.), concluded that the United States lags behind other industrialized countries in several educational and skill areas, and concluded: "Educational and skill deficiencies are the results of a lack of employer planning, a lack of a national prioritization of industry, and weakness in the nation's education and training systems" (p. 1).

Appendix B

Minimum Qualifications for Faculty and Administrators in California

Community Colleges (1994)

Article 2. Qualifications and Equivalencies

§ 53410. Minimum Qualifications for Instructors of Credit Courses, Counselors, and Librarians.

The minimum qualifications for service as a community college faculty member teaching any credit course, or as a counselor or librarian, shall be satisfied by meeting any one of the following requirements:

(a) Possession of a master's degree, or equivalent foreign degree, in the discipline of the faculty member's assignment.

(b) Possession of a master's degree, or equivalent foreign degree, in a discipline reasonably related to the faculty member's assignment and possession of a bachelor's degree, or equivalent foreign degree, in the discipline of the faculty member's assignment.

(c) For faculty assigned to teach courses in disciplines where the master's degree is not generally expected or available, which are, generally disciplines in specialized technical, trade, or industrial fields, either of the following:

(1) Possession of a bachelor's degree, or equivalent foreign degree, plus two years of professional experience directly related to the faculty member's assignment; or

(2) Possession of an associate degree, or equivalent foreign degrees, plus six years of professional experience, directly related to the faculty member's assignment. (p. 12)

Appendix C

Vocational/Occupational Administrator Survey Cover Letter

Dear Vocational/Occupational Administrator:

I am a community college vocational teacher and graduate student at California State University, San Bernardino. Your school has been selected to participate in an educational evaluation study. The purpose of the study is to identify occupational, academic, and instructional competencies expected of **California Community College Vocational Teachers**. Please take a few minutes to distribute, complete, and return the enclosed questionnaires.

To ensure anonymity of your responses, your name and affiliation **are not** required on this questionnaire.

Enclosed you will find the following:

- letter of introduction and endorsement
- a self-addressed return envelope
- 1 - white questionnaire
- 1 - green questionnaire

The white questionnaire is specific to administrators. Please complete this questionnaire yourself.

The green questionnaire is specific to vocational teachers. Please select one vocational teacher from any department and ask that they complete and return the questionnaire to you.

After completing the questionnaires, place them in the envelope provided and deposit them for mail pickup.

There are no right or wrong answers to this survey. Simply, your opinion on matters pertaining to vocational education in California's Community Colleges is all that is requested. If you have any questions or comments, please contact Corey Davis at 909/945-2102. I wish to thank you for your assistance and prompt response to this survey.

This survey has the endorsement of California State University, San Bernardino's School of Vocational Education.

V. Corey Davis

Research Coordinator

Appendix D
Employer Survey Cover Letter

Dear Employer:

I am a community college vocational teacher and graduate student at California State University, San Bernardino. Your business has been selected to participate in an educational evaluation study. The purpose of the study is to identify occupational, academic, and instructional competencies expected of **California Community College Vocational Teachers**. Your help is needed in this study so vocational teachers can better prepare students for employment. Please take a few minutes to complete the enclosed questionnaire.

To ensure anonymity of your responses, your name and affiliation are **not** required on this questionnaire.

There are no right or wrong answers to this survey. Simply, your opinion on matters pertaining to vocational education in California's Community Colleges is all that is requested. If you have any questions or comments, please contact Corey Davis at 909/945-2102. I wish to thank you for your assistance and prompt response to this survey.

This survey has the endorsement of California State University, San Bernardino's School of Vocational Education.

V. Corey Davis
Research Coordinator

Appendix E
Vocational/Occupational Administrator Survey

Vocational/Occupational Administrator Survey



Instructions: Please accurately answer each of the following questions. Your name and affiliation are not required.

A₁. In what county is your school located?

A₂. Please indicate your highest level of education...

AA (two-year) College Degree Master's degree

BA or BS (four-year) College Degree Doctorate

A₃. Years of occupational experience prior to becoming a teacher...

1 - 2 6 - 9

3 - 5 10 or more

A₄. Years of administrative experience...

1 - 2 6 - 9

3 - 5 10 or more

A₅. Was your undergraduate degree in a vocational area?

Yes No

A₆. Was your graduate degree in a vocational area?

Yes No

A₇. What is the title of your present position?

Department Chairperson Director

Associate Dean Supervisor

Assistant Dean Coordinator

Other _____

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your experience with the following:

		Increased Significantly	Increased Slightly	Remained the Same	Decreased Slightly	Decreased Significantly
A ₈	quality of vocational education programs...					
A ₉	quality of teachers applying for positions...					
A ₁₀	pool of available teachers that qualify to instruct vocational subjects...					
A ₁₁	limitations on the development of new or better vocational programs...					

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
A ₁₂	Academic preparation is an appropriate substitute for occupational work experience.					
A ₁₃	Academic preparation has proven to be an asset to vocational teaching.					
A ₁₄	Requiring increased academic development (higher college degree completion) will improve upon the present quality of vocational education.					
A ₁₅	Equivalencies to a college degree should be a consideration to qualify vocational teachers that have not completed a college degree (e.g., military experience, private corporate trainer, etc.).					
A ₁₆	Vocational teachers that do not meet the minimum requirement for academic preparation should remain eligible for employment provided they fulfill the requirement within a reasonable time limitation.					

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₁ . A teacher's academic preparation used for employment consideration should be strictly based on completion of a specific college degree.		✓		✓	
V ₂ . Occupational experience is an asset to vocational teachers.		✓		✓	
V ₃ . Occupational preparation (work experience) of vocational teachers directly related to their teaching assignment should be a consideration for employment.		✓		✓	
V ₄ . Recent occupational preparation (work experience) of vocational teachers directly related to their teaching assignment should be a consideration for employment.		✓		✓	

V₅. Indicate the amount of occupational experience appropriate for a community college vocational teacher.

- _____ 1-2 years
- _____ 3-4 years
- _____ 5-6 years
- _____ 7-or more years
- _____ should not be a consideration

V₆. Indicate how recent the occupational experience should be when considering a vocational teacher for employment.

- _____ 1-2 years
- _____ 3-4 years
- _____ 5-6 years
- _____ 7-or more years
- _____ should not be a consideration

V₇. Indicate the degree level appropriate for a community college vocational teacher.

- _____ high school diploma or equivalent
- _____ AA degree (2-year degree)
- _____ BA degree (4-year degree)
- _____ master's degree
- _____ doctorate (Ph.D. or Ed.D.)

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

As a condition of employment, community college vocational teachers should...		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₈	establish a reciprocal exchange of information with business and industry.					
V ₉	remain certified and/or licensed by a professional organization, state board, union, or other state or nationally recognized organization related to their vocation.					
V ₁₀	continue their personal occupational development after employment.					
V ₁₁	contribute classroom-specific information to the teaching profession related to their vocational subject.					
V ₁₂	contribute occupation-specific information to the teaching profession related to their vocational subject.					
V ₁₃	establish a reciprocal exchange of knowledge and ideas with business and industry specific to their vocation.					
V ₁₄	submit brief progress reports of project activities to various agencies (e.g., Chamber of Commerce, business, industry, and labor) to maintain public, industry, and business awareness.					
V ₁₅	submit articles describing various projects to professional journals.					
V ₁₆	provide project information to educators from other schools at national and/or state conferences.					

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

Community college vocational teachers should...		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₁₇	be able to evaluate a student's basic skills (e.g., reading, writing, computation, etc.).					
V ₁₈	have knowledge of the different student learning styles.					
V ₁₉	have competence in the various teaching methods (i.e., lecture, demonstration, hands on, etc.).					
V ₂₀	have knowledge of the various resources related to education in their occupational speciality area.					
V ₂₁	have competence in student evaluation methods unique to vocational education.					
V ₂₂	evaluate students consistent with the methods established for academic subjects.					

Thank you for your contribution. Your comments or suggestions to topics mentioned throughout this questionnaire are welcomed in the space below. In addition, if you would like to receive the results of this survey, include a return address in the space provided below.

Appendix F
Vocational/Occupational Teacher Survey

Vocational/Occupational Teacher Survey



Instructions: Please accurately answer each of the following questions. Your name and affiliation are not required. Return the questionnaire to your vocational administrator upon completion for return mailing. Thank you for your participation.

T₁. In what county is your school located?

T₂. What best classifies your vocational subject?...

- | | |
|--|---|
| <input type="checkbox"/> Agriculture Education | <input type="checkbox"/> Trade & Industrial Education |
| <input type="checkbox"/> Business and Office Education | <input type="checkbox"/> Technology Education |
| <input type="checkbox"/> Distributive Education | <input type="checkbox"/> Home Economic & Consumer Ed |
| <input type="checkbox"/> Health Occupations Education | <input type="checkbox"/> Recreation/Entertainment |
| <input type="checkbox"/> Other (please specify) _____ | |

T₃. Please indicate your highest level of education...

- | | |
|---|--|
| <input type="checkbox"/> High School Graduate or Equivalent | <input type="checkbox"/> BA or BS (four-year) College Degree |
| <input type="checkbox"/> High School Plus Some College | <input type="checkbox"/> Masters degree |
| <input type="checkbox"/> AA (two-year) College Degree | <input type="checkbox"/> Doctorate |

T₄. Was your undergraduate degree in a vocational area? Yes No

T₅. Was your graduate degree in a vocational area? Yes No

T₆. Years of occupational experience prior to becoming a teacher...

- | | | |
|--------------------------------|-------------------------------------|--|
| <input type="checkbox"/> 1 - 2 | <input type="checkbox"/> 6 - 9 | <input type="checkbox"/> Concurrent experience |
| <input type="checkbox"/> 3 - 5 | <input type="checkbox"/> 10 or more | |

T₇. Years of vocational teaching experience...

- | | |
|--------------------------------|-------------------------------------|
| <input type="checkbox"/> 1 - 2 | <input type="checkbox"/> 6 - 9 |
| <input type="checkbox"/> 3 - 5 | <input type="checkbox"/> 10 or more |

T₈. Are you currently certified or licensed by a professional organization, state board, union, or any other state or nationally recognized organization related to your profession? Yes No

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₁ . A teacher's academic preparation used for employment consideration should be strictly based on completion of a specific college degree.					
V ₂ . Occupational experience is an asset to vocational teachers.					
V ₃ . Occupational preparation (work experience) of vocational teachers directly related to their teaching assignment should be a consideration for employment.					
V ₄ . Recent occupational preparation (work experience) of vocational teachers directly related to their teaching assignment should be a consideration for employment.					

V₅. Indicate the amount of occupational experience appropriate for a community college vocational teacher.

- _____ 1-2 years
- _____ 3-4 years
- _____ 5-6 years
- _____ 7-or more years
- _____ should not be a consideration

V₆. Indicate how recent the occupational experience should be when considering a vocational teacher for employment.

- _____ 1-2 years
- _____ 3-4 years
- _____ 5-6 years
- _____ 7-or more years
- _____ should not be a consideration

V₇. Indicate the degree level appropriate for a community college vocational teacher.

- _____ high school diploma or equivalent
- _____ AA degree (2-year degree)
- _____ BA degree (4-year degree)
- _____ master's degree
- _____ doctorate (Ph.D. or Ed.D.)

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

As a condition of employment, community college vocational teachers should...		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₈	establish a reciprocal exchange of information with business and industry.					
V ₉	remain certified and/or licensed by a professional organization, state board, union, or other state or nationally recognized organization related to their vocation.					
V ₁₀	continue their personal occupational development after employment.					
V ₁₁	contribute classroom-specific information to the teaching profession related to their vocational subject.					
V ₁₂	contribute occupation-specific information to the teaching profession related to their vocational subject.					
V ₁₃	establish a reciprocal exchange of knowledge and ideas with business and industry specific to their vocation.					
V ₁₄	submit brief progress reports of project activities to various agencies (e.g., Chamber of Commerce, business, industry, and labor) to maintain public, industry, and business awareness.					
V ₁₅	submit articles describing various projects to professional journals.					
V ₁₆	provide project information to educators from other schools at national and/or state conferences.					

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

Community college vocational teachers should...		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₁₇	be able to evaluate a student's basic skills (e.g., reading, writing, computation, etc.).					
V ₁₈	have knowledge of the different student learning styles.					
V ₁₉	have competence in the various teaching methods (i.e., lecture, demonstration, hands on, etc.).					
V ₂₀	have knowledge of the various resources related to education in their occupational speciality area.					
V ₂₁	have competence in student evaluation methods unique to vocational education.					
V ₂₂	evaluate students consistent with the methods established for academic subjects.					

Thank you for your contribution. Your comments or suggestions to topics mentioned throughout this questionnaire are welcomed in the space below. In addition, if you would like to receive the results of this survey, include a return address in the space provided below.

Appendix G
Employer Survey

California Employer Survey



Instructions: Please accurately answer each of the following questions. Your name and affiliation are not required.

E₁. What county is your business located?

E₂. What best classifies your business or occupation?

- | | |
|---|---|
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Trade or Industry |
| <input type="checkbox"/> Business or Office Technology | <input type="checkbox"/> Technology |
| <input type="checkbox"/> Distributive (warehouse, retail, etc.) | <input type="checkbox"/> Home Economic & Consumer |
| <input type="checkbox"/> Health Occupations | <input type="checkbox"/> Recreation/Entertainment |
| <input type="checkbox"/> Other (please specify) _____ | |

E₃. Do you conduct or participate in the hiring of employees at your business?

- Yes No

E₄. Has your business hired employees or considered applicants for employment having community college vocational education?

- Yes No Not certain

E₅. Please indicate your highest level of education...

- | | |
|---|--|
| <input type="checkbox"/> Some High School | <input type="checkbox"/> BA or BS (four-year) College Degree |
| <input type="checkbox"/> High School, Graduate, or Equivalent | <input type="checkbox"/> Master's degree |
| <input type="checkbox"/> High School Plus Some College | <input type="checkbox"/> Doctorate |
| <input type="checkbox"/> AA or AS (two-year) College Degree | |

E₆. Years of experience in your present occupation...

- | | |
|--------------------------------|-------------------------------------|
| <input type="checkbox"/> 1 - 2 | <input type="checkbox"/> 6 - 9 |
| <input type="checkbox"/> 3 - 5 | <input type="checkbox"/> 10 or more |

E₇. Are you currently certified or licensed by a professional organization, state board, union, or any other state or nationally recognized organization related to your profession? Yes No

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₁ . A teacher's academic preparation used for employment consideration should be strictly based on completion of a specific college degree.		✓		✓	
V ₂ . Occupational experience is an asset to vocational teachers.		✓			
V ₃ . Occupational preparation (work experience) of vocational teachers directly related to their teaching assignment should be a consideration for employment.		✓			
V ₄ . Recent occupational preparation (work experience) of vocational teachers directly related to their teaching assignment should be a consideration for employment.		✓			

V₅. Indicate the amount of occupational experience appropriate for a community college vocational teacher.

- _____ 1-2 years
- _____ 3-4 years
- _____ 5-6 years
- _____ 7-or more years
- _____ should not be a consideration

V₆. Indicate how recent the occupational experience should be when considering a vocational teacher for employment.

- _____ 1-2 years
- _____ 3-4 years
- _____ 5-6 years
- _____ 7-or more years
- _____ should not be a consideration

V₇. Indicate the degree level appropriate for a community college vocational teacher.

- _____ high school diploma or equivalent
- _____ AA degree (2-year degree)
- _____ BA degree (4-year degree)
- _____ master's degree
- _____ doctorate (Ph.D. or Ed.D.)

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

As a condition of employment, community college vocational teachers should...		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₈	establish a reciprocal exchange of information with business and industry.		✓		✓	
V ₉	remain certified and/or licensed by a professional organization, state board, union, or other state or nationally recognized organization related to their vocation.		✓		✓	
V ₁₀	continue their personal occupational development after employment.		✓		✓	
V ₁₁	contribute classroom-specific information to the teaching profession related to their vocational subject.		✓		✓	
V ₁₂	contribute occupation-specific information to the teaching profession related to their vocational subject.		✓		✓	
V ₁₃	establish a reciprocal exchange of knowledge and ideas with business and industry specific to their vocation.		✓		✓	
V ₁₄	submit brief progress reports of project activities to various agencies (e.g., Chamber of Commerce, business, industry, and labor) to maintain public, industry, and business awareness.		✓		✓	
V ₁₅	submit articles describing various projects to professional journals.		✓		✓	
V ₁₆	provide project information to educators from other schools at national and/or state conferences.		✓		✓	

Please respond by placing a "✓" in the appropriate column (directly following the statement) that best describes your perception of the following:

Community college vocational teachers should...		Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
V ₁₇	be able to evaluate a student's basic skills (e.g., reading, writing, computation, etc.).					
V ₁₈	have knowledge of the different student learning styles.					
V ₁₉	have competence in the various teaching methods (i.e., lecture, demonstration, hands on, etc.).					
V ₂₀	have knowledge of the various resources related to education in their occupational speciality area.					
V ₂₁	have competence in student evaluation methods unique to vocational education.					
V ₂₂	evaluate students consistent with the methods established for academic subjects.					

Thank you for your contribution. Your comments or suggestions to topics mentioned throughout this questionnaire are welcomed in the space below. In addition, if you would like to receive the results of this survey, include a return address in the space provided below.

Appendix H

1 x 3 Analysis of Variance on Variables V1 through V22

Results of the 22 Independant Variables Using a 1 X 3 Analysis of Variance

<i>i</i>	Administrators			Employers			Teachers			<i>df</i>	<i>F</i> Ratio
	Count	<i>M</i>	<i>SD</i>	Count	<i>M</i>	<i>SD</i>	Count	<i>M</i>	<i>SD</i>		
*V1	46	2.0000	.8165	13	2.9231	1.2558	40	2.5250	1.3006	<i>F</i> (2, 96)	4.6380
V2	47	4.7021	.5866	15	4.6000	.5071	42	4.8810	.3278	<i>F</i> (2, 101)	2.4490
V3	47	4.6596	.4790	15	4.4667	.6399	42	4.7619	.4844	<i>F</i> (2, 101)	1.9085
V4	47	4.6596	.4790	15	4.3333	.7237	42	4.3810	.9094	<i>F</i> (2, 101)	2.1536
V5	46	2.5870	1.0017	15	2.4000	1.0556	42	2.4524	.9160	<i>F</i> (2, 100)	.3103
V6	45	2.1778	1.1926	14	1.8571	1.0995	42	2.3333	1.0969	<i>F</i> (2, 98)	.9269
V7	47	2.7447	1.0928	14	2.2143	.6993	42	2.9048	.9055	<i>F</i> (2, 100)	2.6393
V8	47	4.3830	.7388	15	4.3333	.6172	42	4.2619	.9122	<i>F</i> (2, 101)	.2549
V9	46	4.2826	.9812	14	4.1429	.6630	42	3.8333	1.2281	<i>F</i> (2, 99)	2.0085
V10	47	4.3617	.7048	15	4.0000	.8452	41	4.3659	.7334	<i>F</i> (2, 100)	1.5590
V11	47	4.3830	.6098	15	4.2000	.6761	42	4.1905	.8622	<i>F</i> (2, 101)	.8708
V12	47	4.4681	.5843	15	4.2667	.5936	42	4.1429	.9258	<i>F</i> (2, 101)	2.1507
V13	46	4.5870	.5406	15	4.3333	.6172	42	4.3095	.9236	<i>F</i> (2, 100)	1.7565
V14	47	3.7660	1.0470	15	3.6667	.7237	42	3.4524	1.0866	<i>F</i> (2, 101)	1.0519
V15	47	3.3191	1.1249	15	3.4667	.8338	42	3.0714	1.0682	<i>F</i> (2, 101)	.9941
V16	47	3.8298	.9165	15	3.9333	.7988	42	3.6905	1.0474	<i>F</i> (2, 101)	.4356
V17	47	4.1915	.8505	15	4.6000	.6325	41	4.3415	.8249	<i>F</i> (2, 100)	1.4843
V18	47	4.5745	.5415	15	4.7333	.5936	41	4.5854	.5466	<i>F</i> (2, 100)	.5032
V19	47	4.7447	.4408	15	4.8667	.3519	40	4.6500	.5335	<i>F</i> (2, 99)	1.2375
V20	47	4.6383	.4857	15	4.8667	.3519	41	4.6585	.4801	<i>F</i> (2, 100)	1.4293
V21	47	4.5106	.8041	15	4.7333	.5936	41	4.5610	.5499	<i>F</i> (2, 100)	.6031
V22	45	4.2222	1.1055	15	3.8000	1.0142	41	4.0732	1.2122	<i>F</i> (2, 98)	.7918

$p < .05$

*significant at $p < .05$, critical value $F = 3.52$

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