A study of factors related to the integration of vocational and academic curricula in selected California counties

Yi-Chuan Wu

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A STUDY OF FACTORS RELATED TO THE INTEGRATION OF VOCATIONAL
AND
ACADEMIC CURRICULA IN SELECTED CALIFORNIA COUNTIES

A Project
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 Option

by
Yi-Chuan Wu
June 1994
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Approved by:

Dr. Joseph English, First Reader 4-7-94

Dr. Ronald K. Pendelton, Second Reader 4-7-94
ABSTRACT

The study was limited to the San Bernardino and Riverside school districts located in Southern California. Superintendents, principals, and other administrators responded to a questionnaire designed to determine the degree of vocational and academic integration in their school districts; what models were being utilized; and other factors related to curriculum integration. Moreover, it was found that an integrated vocational and academic curricula were not actually being implemented. In fact, 42.3% of respondents indicated that they supported the dual system of separate vocational education. However, it was very interesting to find that 83.3% of reported that all students are best served by making an artificial distinction between vocational and academic education.

In summary, the following recommendations were suggested: integrating vocational and academic curricula must become a goal for the total educational plan, polytechnic high schools are needed in order to achieve integration, and there must be support for integration from administrators.
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CHAPTER ONE
INTRODUCTION

Background

Everyone understands that teachers play an important role in the American educational systems. However, today in many high schools, education is like an egg with two yolks, one academic and the other vocational. Often, vocational and academic teachers compete with each other. For students, the typical curriculum presents an endless array of facts and skills which are fragmented and disjointed. Consequently, a rift exists between vocational and academic education, which serves only to harm the students (Beck, Copa & Pease, 1991).

When society is confronted with a real life problem or confusing situation, human beings do not ask which part is mathematics, which part is science, and which part is history. Instead, they search for information from integrated databases that might be helpful in solving specific problems. Simply put, education's central challenge is to prepare students to contribute to a global economy by being productive and globally competitive (Pritz, 1991). Students cannot meet this challenge if knowledge lacks integration.

On the other hand, basic restructuring of the world's economic system indicated by shifts in the world market place will not leave the educational system untouched. Students must be taught transferable skills to deal with resources, people,
information systems, and technology. To do so, they must have foundations in basic skills, thinking skills, and personal qualities (Pritz, 1991). The fundamental philosophical pedagogy to improve students basic skills would rely on the integration of vocational and academic curriculum.

Nature Of The Problem

The year 2000 will mark the end of what has been called the American Century. Since 1900, the United States has become wealthy and powerful by exploiting the rapid changes taking place in technology, world trade, and the international political order (Johnston & Packer, 1987). However, U.S. labor productivity actually declined for the first time in 1989 and 1990. Furthermore, Mikulecky (1990) found that:

    Some seventy percent of the reading material in a cross section of jobs nationally is now between 9th and 12th grade difficulty (some 15 percent is even higher)--and it is likely that the job and social requirements for literacy will increase even more in the years ahead. The trouble is that massive numbers of present and future workers have only minimal or marginal proficiency in the basic skills. (p. 305)

    Students usually think they are ready for the real world, but this literacy data suggests they are not. Bottoms (1992) found in his study that only thirty percent of the students were actually prepared. Therefore, employers gave these new
employees low marks on work-place skills. For instance, students are unable to demonstrate the desire and capacity to learn, comprehend written materials and use math to solve complex problems.

Rapid technological change has been and continues to increase the complexity of the work-place. A fundamental shift in the nature of work requires a work force that is both highly skilled and highly adaptive. Workers need basic literacy skills and cognitive skills that will enable individuals to continue to learn and adjust to new work situations. However, "the occupational half-life," the span of time it takes for one half of workers' skills to become obsolete, has declined from 7-14 years to 3-5 years (Gerson-Edelman, 1980, p. 44). For example, when Mazda moved to Michigan more than 100,000 people applied for 3,500 jobs at its new state-of-the art assembly plant. After testing employees, Mazda found that many applicants did not qualify. The reason was that job-seekers were weak in writing, reading, and computing skills (Building a quality workforce, 1988). Unfortunately, the lack of skills affects the workers' earning capability. According to the 1988 Grant Commission report, "The Forgotten Half," workers who are 25 and under with only a high school diploma were making less money than ten years ago (Clinton, 1991). As the economies of developed nations move further into the post-industrial era, human capital plays an ever more important role in the society of progress. As the
society becomes more complex, the amount of education and knowledge needed to make a productive contribution to the economy becomes greater (Johnston & Packer, 1987). These reports show different truths operating within the society and schools. Today society and school are failing young people because the American educational curriculum does not have a viable school-to-work system. Also, students think that school curriculum does not relate to the real-world. American schools isolate youth from adults, the work place, and other community settings. Weak links between school and work influence young people's future, obscuring their perceptions of how their current behavior is likely to affect their future (California State Department of Education, 1992).

Strangely enough, the current mind-set of traditional faculties and principals is to expect very little from so-called lower-track students. However, the research essentially states that school leaders need to assist and encourage academic and vocational teachers to see vocational students as worthy and capable of achieving higher standards (Bottoms, 1992).

If the economy is to grow rapidly, educational standards that have been established in the nation's schools must be raised dramatically. In other words, students must go to school longer, study more, and pass more difficult tests covering more advanced subject matter. There is no excuse for vocational programs to warehouse students who perform poorly
in academic subjects or for issuing diplomas that register nothing more than years of school attendance (Johnston & Packer, 1987).

By addressing these issues now, the American educational system can identify skills students should be learning in school in order to become full participants in the work force. Also, schools can build successful programs which integrate vocational and academic education to help students succeed in getting high-paying, high-tech jobs after graduation.

Significance Of The Problem

Efforts to integrate vocational and academic education have all the signs of a new movement. Policy-makers trying to reform vocational education, business people decrying the skill deficiencies of vocational students, and vocational educators striving to find a new relevance for their programs have identified integration as a solution to the old problems affecting vocational education (Pritz, 1991).

The evidence is overwhelming. Scores of business publications and research documents concluded that America is losing its competitive edge in a global economy. David Kearns, Chairman of Xerox, supported the view that the American work force is running out of qualified people. If current demographic and economic trends continue, American businesses will have to hire a million workers a year who cannot read, write, or count (California State Department of Education,
If society does not change the vocational/academic curriculum, up to three-quarters of new employees through the year 2000 will be deficient in mathematics, writing skills, and social knowledge. The nation is facing a monumental mismatch between available jobs and the ability of American workers to efficiently function in the workplace. Because technology is changing the nature of work required in most jobs, growth areas will be mainly in high-tech and mid-tech skills. New machine tools are more complicated, each requiring more flexibility and knowledge. Society's systems have evolved and it is imperative that communication skills and social knowledge be part of the vocational education of all workers.

Statement Of The Problem

To address these skills, it is important to understand curriculum integration as a dynamic process in which schools start with simple changes and then move to more complex reforms. But at this point, in some states, state policy favoring job-specific skills training may collide with the intention in the Perkins Amendments to stimulate a broader reform of vocational education (Grubb, 1991).

With the advent of the 1990 Perkins Amendments, policymakers have joined with educators, business and industry by targeting integration as a major program improvement for vocational education that will be supported by federal
dollars. The various supporters of integrating vocational and academic education are policy-makers, business, representatives, reformers of vocational education, and critics of academic teaching. They all have different reasons for adopting integration.

Integration is an essential curriculum reform that requires changes in course content and pedagogy. Unfortunately, integration is either in the early stages of development or has not yet been attempted. Policy makers, administrators, and educators do not realize 1) how they can get the funding, 2) which integration models they can use, or 3) what the goals of the schools or districts should be. The first step in the integration process is for policy makers, administrators, and educators to understand what their needs and purposes are for the students in order to comply with the legislation, while at the same time meeting local needs and concerns.

Therefore, the problem shall be to 1) determine the current level of vocational and academic curricula integration, 2) perceive district teachers and administrators philosophically support the integration of vocational and academic curricula, 3) identify and define existing models, 4) to examine related factors affecting the integration process, and 5) to explore related barriers detracting from successful curricula integration.
Questions Guiding The Study

This study was designed to investigate and determine the factors affecting the integration of vocational and academic curricula. Factors and barriers influencing successful integration of vocational and academic curricula were identified. Two basic questions were addressed. The first was the degree to which integration models exist in the school districts under investigation. The second was the degree to which teachers and administrators philosophically support the integration of vocational and academic curricula.

Purpose Of The Study

The challenge is not to lose sight of the primary purpose of providing vocational and academic programs which is to allow students, at all levels, to become productive members of society. It will be necessary for students to have the capabilities to meet the needs of business and industry in the year 2000. Therefore, this study was designed to document the degree of integration of the vocational and academic education; to examine and identify existing integration models along with positive and negative factors related to program implementation in San Bernardino and Riverside Counties; and to assess the perception and philosophy of vocational and nonvocational administrators and teachers regarding vocational and academic curricula integration.
Definitions

The following definitions will help the readers understand how the terms are used in this thesis.

**Vocational Education** is organized educational program offering a sequence of courses which are directly related to the preparation of individuals in paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree. Such programs shall include competency-based, applied learning which contributes to an individual's academic knowledge, higher-order reasoning, problem-solving skills, work attitudes, general employability skills, and the occupational-specific skills necessary for economic independence as a productive and contributing member of society. Applied technology education is also a part of vocational education (American Vocational Association, 1990).

**A Polytechnic High School** is a modern progressive educational institution leading either to university or to practical life work. Also, it moves toward multiple learning alternatives which promise to more adequately serve the needs of increasingly diverse student bodies (Smith, 1979).

**A Vocational High School** is a public institution having vocational education as a major portion of its curriculum.
It may or may not be situated with a college preparatory and or Regional Occupational Programs (ROP) / Regional Occupational Centers (ROC) program.

**Basic Skills** are often defined as skills that were once referred to as the academic skills of reading, writing, and arithmetic. In addition to the previously used academic definition, basic skills are also now cited as those social competencies such as the ability to balance a checkbook or read safety instructions and carry out real-life functional skills (Gloeckner, Cobb, Love & Grant, 1992).

**An Academic Education** is used to refer to educational organizations built around generally accepted disciplines. Although these disciplines are defined in various ways, at the secondary school level they are usually limited to the knowledge areas of English, foreign languages, history, economics, mathematics, and science (Good, 1973).

**The Integration Of Vocational And Academic Curriculum** refers to the process of uniting parts or elements of a students' educational experience to form a more inclusive whole. Horizontal curriculum integration occurs when academic parts of a student's learning are integrated at one level to her or his vocational experience through a contextual approach. Vertical curriculum integration is the purposeful connecting
of parts of student's experience from one grade level to another (Phihal et al., 1992).

*Contextual Learning* as Lave (1988) observes, extracting knowledge from the particulars of experience was thought to make that knowledge available for general application in all situations. Also, Resnick (1987) puts the Deweys' point in more formal language, contrasting school learning with thinking, problem solving, learning, and knowledge-using outside of school.

**Agricultural Vocational Education** is organized instruction which prepares individuals for employment in agriculture and may also prepare them for advanced training leading to agricultural careers requiring education at a post-secondary level. Employment in agriculture usually occurs in the areas of animal science, plant science, agricultural mechanics, agribusiness management and marketing, natural resources/rural recreation, ornamental horticulture, and forestry, including related services (American Vocational Association, 1991).

**Health Careers Education** is designed to provide educational experiences and training opportunities that prepare students for immediate employment, community college or university enrollment. Students prepare for careers in health care in either preventive, therapeutic, diagnostic, or supportive
services. Concurrent community-based interning experience occurs in a variety of settings including acute care hospitals, community and emergency clinics, skilled and intermediate care facilities, medical and dental offices, health maintenance organizations, home care, and child and adult day-care agencies (American Vocational Association, 1991).

**Business And Marketing Education** are programs which prepare students for careers in business administration and management, marketing, accounting, financial services, business information services, enterprise, and computer science occupations. Each program emphasizes the teaching and reinforcement of academic skills and their application to work-related functions (American Vocational Association, 1991).

**Home Economics Education** is a program which assists individuals in developing competencies for entry-level employment, enterprise, advanced training, and advanced education at post-secondary institutions (American Vocational Association, 1991, p.5-31).

**Work Experience Education** refers to programs which are designed to link academic and vocational training with the
world of work. The school assists young people to choose a career wisely, prepare for full-time employment or further education, and learn to work with others in successful and rewarding ways (American Vocational Association, 1991).

Disadvantaged are individuals (i.e., other than individuals with handicaps) who have economic or academic disadvantages and who require special services and assistance in order to enable such individuals to succeed in vocational education programs. This term includes individuals who are members of economically disadvantaged families, migrants, individuals of limited English proficiency and individuals who are dropouts from, or who are identified as potential dropouts from, secondary school.

Regional Occupational Centers (ROC) And Regional Occupational Programs (ROP) refer to vocational education programs for youth and adults in California. In 1970, some 28,000 youth and adults in California were enrolled in specific vocational education programs at training sites nonexistent in 1967. They were participating in training opportunities made available by Regional Occupational Centers or programs. The first Regional Occupational Center was created in 1967. By 1970, 24 centers were operational. In the interim, the statutes were further amended in 1968 to permit adults to be served and to recognize the concept of Regional Occupational Programs (ROP) through
the use of multiple sites for training in lieu of one centralized facility (Smith, 1979).

Limitations

There are some limitations to this study. First, all the sample may not be representative of a larger population. The sample contains only data from the school districts in San Bernardino and Riverside Counties. Secondly, generalizing may be restricted, but data are stable for counties with a similar population dispersion or economic base.
CHAPTER TWO
REVIEW OF LITERATURE

Introduction

As society approaches the twenty-first century, more students than ever before need to receive higher levels of education so that they can compete successfully in the increasing technological job market. Moreover, schools must prepare students who know how to think and to learn to gather, organize, and analyze information and then apply it to solving a problem, as well as to work collaboratively with others.

Historical Aspect Of Vocational Education

Early Development

Vocational education began early for humankind. In the effort to conquer the physical environment, including the dangers and rigors of the external world, manual skills and knowledge pertinent to specific tasks were, in one way or another, transmitted from person to person and from generation to generation (Wright, Prosser & Hawkins, 1951).

Vocational Education In The U.S.A.

Vocational education is to specify the types of skills, attitudes, and understandings that prepares students for work
and family roles (Copa et al., 1985).

Around 1905, proponents of vocational education argued that a broader curriculum was needed to prepare people for the new industrial age. They wanted youth and adults to have a chance for better careers. They were unhappy that only eight percent of youth graduated from high school, and that almost all male graduates went to college and most female graduates went into white-collar work (American Vocational Association, 1992).

For vocational educators this need was followed by a series of five government acts which served to provide funds for vocational education development:

**The Smith-Lever Act Of 1914.** This act provided for a program of cooperative extension work in agriculture and home economics. It stipulated that:

> cooperative agricultural work shall consist of the giving of instruction and practical demonstration in agriculture and home economics to persons not attending or resident in the colleges in the several communities, and imparting to such persons information on such subjects through field demonstrations, publications, and other-wise. (Wright, Prosser & Hawkins, 1951. p. 76)

National grants were necessary since the problem was too large to be worked out on a local basis and the states varied widely in their ability to pay the full cost of
vocational education. Therefore, on December 7, 1915, Smith introduced Senate Bill 703, which read:

To provide for the promotion of vocational education; to provide for cooperation with the States in the promotion of such education in agriculture and the grades and industries; to provide for cooperation with the states in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure. (American Vocational Association, 1992, p. 30)

**Smith-Lever Act Of 1917.** On February 10, 1916, Rep. Dudley M. Hughes of Georgia, also a member of the commission, introduced similar legislation in House Bill 11250. The House Committee on Education field report stated:

It is especially designed to prepare workers for the most common occupations in which the great mass of our people find useful employment...to give training of a secondary grade to persons over 14 years of age for...employment in the trades and industries, in agriculture, in commerce and commercial pursuits, and in callings based upon...home economics. (American Vocational Association, 1992, p. 31)

President Woodrow Wilson urged passage of the bill. He said vocational and industrial education were of vital importance to the whole country "for the critical years of economic
development immediately ahead of us" (American Vocational Association, 1992, p. 31).

Following Wilson's call for action, legislation moved along. The House passed the bill, differences in House and Senate versions were resolved in conference and final legislative action was completed on February 17, 1917. President Wilson signed the Smith-Hughes Vocational Education Act into law on February 23, 1917 (American Vocational Association, 1992).

The Smith-Hughes Act provided an appropriation of $1.7 million for the year 1917-1918, with funding increasing at intervals to $7.2 million for 1925-1926. The act created a Federal Board for Vocational Education to administer the new law's provision. The members included the Secretaries of Commerce, Agriculture and Labor, the Commissioner of Education and three appointed citizens (American Vocational Association, 1992).

**Vocational Education Act 1963.** The next significant of legislation was the 1963 Act. From the late 1950s through the 1960s a good deal of criticism was leveled at vocational education. But the field withstood this test, and Congressional action in the '60s vastly expanded vocational education's role and scope. This period saw the advent of area vocational schools and special training programs for displaced and unemployed persons.
In 1963, vocational education bills based on recommendations of a presidential study commission were introduced to replace the expiring federal legislation. Vocational educators objected to many provisions in those bills and promoted substitute legislation. The new bill, HR 4955, was introduced in the House by Rep. Carl D. Perkins of Kentucky, who was to become one of the best friends vocational education has ever had in Congress. President Lyndon B. Johnson signed the Vocational Education Act of 1963 (Public Law 88-210) in December, 1963 (American Vocational Association, 1992).

Rep. Perkins (1976) wrote to The Journal of Teacher Education:

In my view, the industrial might and the agricultural prowess which our nation has shown in the 20th century are both undergirded, to a large extent, by the training which has been provided to our citizenry through Vocational Education...Vocational educators must...take advantage of the shift in public attitude towards providing job training in the schools and to move to a full partnership with academic education. (p. 296)

The Carl D. Perkins Vocational Education Act Of 1984. In the 1980s, legislation continued to address pressing social issues through vocational education programs. The Carl D. Perkins Vocational Education Act of 1984, which
established funding authorization for a five-year period, focused on improving vocational programs and serving special populations.

Re-authorized in 1990 as the Carl D. Perkins Vocational and Applied Technology Education Act. The new Perkins Act brought the largest ever federal funding authorization for vocational education—up to 1.6 billion a year through 1995—with a major portion of funds earmarked for technology preparation programs and greater opportunities for disadvantaged people.

California State Constitution and Vocational Education

The California State Constitution, Article IX, Section 1, states, "knowledge and intelligence being essential to the preservation of the rights and liberties of the people, the Legislature shall encourage by all suitable means the promotion of intellectual, scientific, moral, and agricultural improvement" (California state constitution, 1988, p. 121).

As California entered the twentieth century, it had legally prescribed the general bounds of its common or public school system. Its previously migratory population was changing rapidly to a predominantly resident population. The state was characterized by an intensive search for self-sufficiency, political stability, a diversified operating economy, and a concern for the general welfare of all citizens (Smith, 1979).
Consequently, California's public school enterprise, though still in the stage of creative development, was in a strong position to progress through unprecedented growth and substantial support. For example, one of the most discernible moves toward publicly supported vocational education occurred in 1901 when the California Legislature authorized the establishment of a "polytechnic school," to be located near San Luis Obispo, and appropriated $50,000 to purchase 320 acres for the school. (Smith, 1979, p. 6)

Keppel (1905) was the Los Angeles County Superintendent of Schools who set the tone for potential improvement and extension of high school offerings by favoring vocational education. In his policy statement Keppel observed:

The high schools of our county are doing a great work, but they are not doing the work they could do and ought to do. Their work is shaped to meet the requirements of the state university, not withstanding the fact that less than one-fourth of those who attend the high schools can ever reach the university. The high school ought to fit people for life. This ought to be the aim of the high school, and fitting for the university ought to be the result of this and not the beginning and the end of it. If the high schools are to do their duty to the children, they must give an increasingly large share of their time to commercial, industrial, and technical training. (p. 6)
After California's public school developed this strong position to progress through unprecedented growth, there were eight stages of development:

**The Foundation Decade 1910-1920.** During this time vocational education emerged as a discernible component of California's public school system. The philosophic foundation for vocational education was established and ratified—a foundation of purpose that was to persevere (Smith, 1979).

**The Smith-Hughes Act (Public Law 64-347).** This was the first legislation authorizing federal financial aid to the public schools. As a baseline indicating the status of vocational education at the initiation of the Smith-Hughes Act, in 1917, California high schools enrolled approximately 125,000 students, and of that number, nearly 8,000, or 6 percent of all students, were enrolled in vocational education subjects. Total state support funds were less than $1 million, and school district and county taxation supported in excess of 90 percent of high school costs (Smith, 1979).

**The Challenge Of Adversity 1920-1940.** An unavoidable, fundamental characteristic of vocational education is its susceptibility to external influences exerted by social change, economic conditions, and political exigencies. The unstable economy of the 1930s, together with international political disturbances, served both to thwart and to benefit the progress of vocational education (Smith, 1979).
For example, in California a proposal was made for a 25 percent cut in educational expenditures. Nationally, the Director of the U.S. Budget Bureau asked that all federal aid to the states be discontinued. On the other hand, pressures to meet the needs of laid-off workers for new employable skills and of youths who encountered extreme difficulty in securing employment were applied (see footnote 1).

The Transition Years 1940-1950. During the 1940s vocational education in California achieved preeminence in the nation. Its enrollments in regular classes and in war training classes were the highest in the nation, and it offered a more comprehensive array of options than did any other state (Smith, 1979).

Confusion, indecision, and frustration reigned as the nation endeavored to return to normal from 1945 to 1949. As in previous periods of economic and social difficulty, vocational education was at the center of activity. Added to the state's continuing problems of rapid population growth and shortages of housing and public services were difficulties with price controls, inflated land values, and major disruptions in the work force. Vocational education was called on to phase out the remnants of war training programs and establish retraining

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1 A commentary is appropriate. An increase in vocational education enrollments invariably occurs during periods of declining employment. One explanation is that entering or re-entering training is an improvised substitute for idleness. Evidence exists, however, that (1) skilled workers remain on the job longer in a deteriorating labor market than do those with lesser skills and (2) those with better or more diverse skills are the first to be employed (Smith, 1979).
programs for thousands of veterans and men and women who required new skills for peacetime jobs (Smith, 1979).

The Movement Slows And Is Reviewed Between 1950-1960. The 1950s were characterized by a lull in the unbroken growth of vocational education in California and elsewhere in the nation. Unlike the situation in the previous decade, which witnessed a phenomenal doubling of enrollments, vocational education had to struggle in the 1950s to maintain enrollments. Vocational education began with a record enrollment of 415,388 youths and adults in 1950-51, dropped to 259,726 in 1952-53, and slowly rose to 410,050 in 1959-60 (Smith, 1979).

California became the first state to recognize work experience formally as a universal, constituent, and appropriate part of public education. Through the leadership of the State Department of Education a representative task force, headed by the State Director of Vocational Education, identified the fundamental rationale of the merits of work experience attuned to educational goals (Smith, 1979).

The Green Years 1960-1970. The 1960s were the most eventful years in the history of vocational education in California. Future decades may never match the excitement, profound change, material progress, vigorous growth, and external support that characterized the program during this ten-year span (Smith, 1979).
The Carl D. Perkins Vocational And Applied Technology Education Act Of 1990. This new legislation greatly expanded the federal government's job-related education efforts. It emphasized service to special populations including the poor, the handicapped, the economically disadvantaged, disabled, single parents, foster children, those not properly served because of sex bias and those with limited English proficiency. (American Vocational Association, 1990, p. 11)

The purpose of the new act read as follows:

It is the purpose of this Act to make the United States more competitive in the world economy by developing more fully the academic and occupational skill of all segments of the population. This purpose will principally be achieved through concentrating resources on improving educational programs leading to academic, occupational training and re-training skill competencies needed to work in a technologically advanced society. (American Vocational Association, 1990, p. 19)

Higher-Tech And Higher-Pay In 2000. As the U.S. education system approaches the twenty-first century, more students than ever before need to be educated to higher levels so that they can (1) compete successfully in the increasingly technological job markets; (2) participate in the democratic system; and (3) develop strong moral and ethical values and the ability to reach their individual potential (California State Department of Education, 1992).
It is important to ask who will be working in the year 2000? Everyone who will be working in the year 2000 has already been born, and two-thirds of them are at work today. However, the workers who will join the labor force between now and the year 2000 are not well-matched to the jobs that the economy is creating. There is a gap between the relatively low education level and skills of new workers and the advancing skill requirements of the new economy that is emerging (Johnston & Packer, 1987).

The California Educational system must ensure that all students' courses of study match their aspirations and that each student has an effective, challenging educational program. According to a California Department of Education 1990 report, "The courses students are taking too often do not relate to their aspirations; 48 percent of tenth grades were enrolled in general education courses, but their career goals required a college degree" (California State Department of Education, 1992, p. 6).

Education levels, of course, are only a rough program for the skills required for employment. Nevertheless, more detailed analysis of the language, math, and reasoning skills required for various jobs reinforces the conclusion that the skill mix of the U.S. economy will rise substantially between now and the end of the century (Johnston & Packer, 1987).

For individuals, the good jobs of the future will belong to those who have skills that enable them to be productive in
a high-skill, service economy. For the nation, the success with which the workforce is prepared for high-skilled jobs will be an essential ingredient in maintaining a highly productive, high-wage economy (Johnston & Packer, 1987).

**Restructuring Schools For Vocational Education**

One way to address quality the education of the future workforce is through integration. Integration is an important consideration in the current restructuring climate. The school's organization has changed. Schools build their capacity to solve problems improve quality; make students feel connected academically, socially, and emotionally to other students and adults. In support, David (1991) stated:

The nation's public school system faces the challenge of revamping and reorganizing itself to prepare students to function productively in today's society. Creating more demanding goals for all students and providing curriculum and instruction that stimulate thinking and problem solving will require a total restructuring of the education system from top to bottom. All parts of the system must change so that all students, teachers, and administrators can take on and accomplish these more complex tasks. (p. 37)

In other words, major changes in the organizational structure are needed, particularly to bond students and faculty. These changes would reconsider the way people interact, the
relationship of a high school to the outside world, and how resources, including people, time, and money, are used.

While specific approaches vary among schools, elements are restructured together necessarily, including changes in the master schedule and flexible uses of time, such as variable teaming of teachers for curricular units, students clustered in small learning teams that support personalized learning, and Saturday classes.

Therefore, if society has learned anything about educational reform during the decade of the 1980s, it has been that single initiatives cannot simply operate in isolation. The components of comprehensive reform must be integrated, every component, not just one or two, and link them in an integrated fashion if our high schools are to successfully raise students' performance levels.

Federal Mandates And State Directions (1987-1990)

The Federal Mandates and the State Directions funds through the Carl Perkins Vocational Act include seven percent of all funds for administration; vocational student organization allocations of $450 per VSO chapter; federal funds given to recipients who must comply with federal and state laws, regulations, and policies. There is funding allocated for non-English proficient or limited-English proficient (i.e., disadvantaged allocation) and handicapped to receive vocational education (American Vocational Association,
Federal Mandates and State Directions provided: New, expanded, or improved vocational education programs with federal funds based on placement in adult training and retraining, with 15 percent to be used for new, innovative job training programs, five percent for special purpose for redistribution, and the remaining 10 percent will provide for statewide activities. Single parent homemakers are eligible for services through the federal mandates and state directions because of divorce, separation, death, or disability of a spouse. The services include an assessment of existing services for the recipient (Contact and Social Services), develop a plan, assist the recipient in entering career-vocational education, and provide child care and transportation. (American Vocational Association, 1990, p. 25)

Approximately, $1,600,000,000 was appropriated for the fiscal year 1991 and such sums as may be necessary for each of the fiscal years 1992, 1993, 1994, and 1995 to carry out the provisions of titles I, II, III, and IV of this Act.
Purpose and goal of the Carl Perkins Act follows:
(a) The purpose of the Vocational and Applied Technology Education Programs is to make the United States more competitive in the world economy by
developing more fully the academic and occupational skills of all segments of the population.

(b) The purpose will be achieved principally through concentrating resources on improving educational programs leading to academic and occupational skill competencies needed to work in a technically advanced society. (American Vocational Association, 1991, p. 7)


According to the Act, each State board shall develop the portion of each State plan relating to the amount and uses of any funds proposed to be reserved for adult education, post-secondary education, tech-prep education, and secondary education after consultation with the State agency responsible for supervision of community colleges, technical institutes, or other 2-year post-secondary institutions primarily engaged in providing post-secondary vocational education. The state board shall, in developing such a plan, take into consideration the relative training and retraining needs of secondary, adult, and post-secondary students. Also, the state board receiving funds under this Act shall develop and implement a statewide system of core standards and measures of performance for secondary and post-secondary vocational education programs (American Vocational Association, 1991).
Successful Leadership For Vocational Education: A Categorical Analysis

There needs to be a successful and strong leadership for vocational education so that everyone can implement and utilize the Carl Perkins Act. Although leaders and leadership have existed for several thousand years, the systematic search for answers to what leadership is and how leaders may be identified has been a relatively recent phenomenon. Growing from the scientific management movement of the 1900s were explorations of ways organizational needs could be met through improved management.

Leadership may be thought of as both a process and a property. It is "the process of perceiving when change is needed and influencing the group by non-coercive means of persuasion and example in its efforts toward goal setting and goal achievement" (Moss & Liang, 1990, p. 5). The property of leadership is "ascribed to an individual by members of the group when they perceive the individual to possess certain qualities or characteristics" (Moss & Liang, 1990, p. 5). So, when viewed as a property, leadership is in the eye of the beholder and only persons who are so perceived are leaders.

It is well known that coaches of great athletic teams rarely have the experience of having played every position required in competition; yet through leadership, their teams are synchronized to demonstrate a combination of skills that distinguishes them in the sports arenas. By the same token,
"most managers of a school system probably have not actively participated in every operational aspect of the educational structure, but their effective leadership enables them to build units that competently deliver services to students" (California State Department of Education, 1992, p. 50).

When a school implements a new program, or changes an existing one, the principal and other administrators are often the key to the success or failure of that effort. As instructional leaders, the job of a principal is to help teachers and students in a school make educational programs work. There is no program that everyone can buy or create that will increase basic skill achievement in a school unless everyone who works there wants to make the program work. Thus, it is essential that the leadership model must have the following six characteristics:

**Adaptable, Open, Flexible.** Strong leadership is open to suggestion, criticism, and change. This individual is very open when dealing with others. One way of initiating openness is by having an open-door policy (Finch et al., 1991). For example, one of the administrators saying, "Since that time, I have always had an open-door policy. The only time the door is closed is when something personal is going on. Individuals know they can come in any time they want to" (Finch et al., 1991, p. 34).
Creative, Original, Visionary. The leader must demonstrate creativity and vision. This leadership maintains a futuristic outlook and pro-active stance. Sometimes, creativity seems to be generated through adversity. As one administrator stated:

The state's economy made me think that our school needed to be pro-active rather than reactive. Since the job market had tightened, I thought that our school should increase its emphasis on the jobs of tomorrow instead of jobs that presently existed. Thus, my goal was to train students for jobs that did not yet exist. I knew this would be a tremendous challenge and that our school would need help to accomplish it. I believed that the companies that were oriented toward the future would welcome our goal. (Finch et al., 1991, p. 35)

Commitment To The Common Good. The leader must committed to activities that benefit a broad range of groups and clients. leaders believe that they must work for the betterment of the entire student body, the staff, the institution, the community, and the vocational education enterprise. One leader communicated this feeling when discussing changes made in the institution, I think the bottom line is to produce a graduate who is better prepared to get out in the world of work
and be part of the community. (Finch et al., 1992, p. 57)

**Networking.** Networking is a process that is tied to one or more outcomes. Although leaders seem to maintain a number of networks, their reasons for networking are related to areas such as improving institutional visibility, obtaining equipment, getting funding, updating and improving the curriculum and building constituencies. For instance, several leaders provided indications of their reasons for engaging networking:

We knew that if we were to get any money, we would have to get somebody in the legislature to push it for us. In addition, we had to gain the confidence of the Commissioner of Education. I think we received this money because we got the community behind us from the star. (Finch et al., 1991, p. 67)

**Planning, Organizing, And Implementing.** The successful administrators are actively involved in planning, organizing, and implementing to pull together the forces already on campus and coordinating them into a real marketing effort. Also, administrators described themselves as planning, organizing, and implementing effective school measure programs, quality process programs, and institutional visibility and image enhancement. (Finch et al., 1991, p. 73)
Group Process And Team Building. While administrators commented on group process and team building behaviors as they related to school decisions and building support, instructors talked about them in relation to funding for programs, committee assignments, school decisions, and building support. Other group process and team building behaviors that instructors recalled related to formulation of policy, selection of equipment, budgeting, school renovations, and institutional goal development. But, how to build and process a great team? One of the vocational leaders say,

One of the first things this administrator did was to hold a retreat for the school board members. During this retreat, the administrator explained how the vocational center was financed and got to know the board members better. The administrator in effect provided a training session for the board members on federal, state, and local funding. (Finch et al., 1991, p. 76)

California's Leadership Dilemma

In California, vocational and applied technology education programs are administrated by two state agencies—the California Department of Education (CDE) for the secondary level and the Chancellor's office at the California Community Colleges (COCCC) for the post-secondary level (American Vocational Association, 1991). These programs focus on two
aspects:

**Professional Development.** The Department of Education will allocate at least $41,500,000 to fund professional development programs for teachers, counselors, and administrators. Programs will be designed to support teachers' efforts to integrate vocational and academic content. Opportunities will be provided for vocational and academic teachers who work with vocational education teachers to collaborate in order to integrate vocational and academic methodologies and provide a coherent sequence of courses and experiences to prepare students to successfully transition from school to work. (p. 3-7)

**Curriculum Development.** The Department of Education will allocate up to $47,500,000 for the development, dissemination, and field testing of model curriculum standards, and coherent sequences of technical preparation courses in the vocational program areas—agricultural education, health careers education, business and marketing education, home economics education, industrial and technology education, and work experience education. The model curricula will integrate vocational and academic content and methodologies. (p. 3-9)
Labor Force Projections: Jobs Of The Future

Elizabeth Dole, former United States Department of Labor Secretary, stated in the *Occupational outlook handbook* (1990):

Work place competency will be the keystone supporting future increases in our standard of living and our global competitiveness. Preparation for tomorrow's jobs and the challenges posed by demographic trends, changing technology, and increased international competition will require an efficient match between work place requirements and worker skills. (p. iii)

Every other year, the Bureau of Labor Statistics develops projections of the labor force, economic growth, industry employment, and occupational employment under alternative assumptions. In the current edition of *Occupational outlook handbook*, which usually covers a 10-to-15 year period, there are approximately 2500 statements identifying the principal factors affecting job prospects and indicating how these factors are expected to affect occupations in the future. These projections provide a framework for the individual job search for a selected career or job opportunities in the United States. (1992, p. 8)

Specifically, according to the *Occupational outlook handbook* (1990)

In California, 70 to 80 percent of the work-force for the year 2000 is currently on the job. To meet the demands of
rapidly changing technology and to provide entry for immigrant workers with limited-English proficiency, and to provide adults with technician level skills, the traditional focus of vocational education at the community college level needs to drastically changed. (p. 104)

Also, according to the Occupational outlook handbook (1992, p. 9) opportunities for high school dropouts will be increasingly limited, and workers who cannot read and follow directions may not even be considered for most jobs.

National Employment Outlook 1990 To 2005

In addition to the job opportunities, the Occupational outlook handbook (1992) noted that civilian job growth continued to improve in 1990, although at a slower rate, as total civilian employment expanded.

Total employment is expected to increase from 122.6 million in 1990 to 147.2 million in 2005, or by 20 percent. Reflecting a slowdown in labor force growth, this is only slightly more than half the rate of increase recorded during the previous 15-year period. The 24.6 million jobs that will be added to the U.S. economy by 2005 will not be evenly distributed across major industrial and occupational groups—causing some restructuring of employment, continued faster than average employment which would required relatively high
levels of education or training. (p. 10)

Therefore, America's labor force will be expected to grow by 2.1 million jobs (19%) between 1986 and the year 2000; from 111.6 million to 133 million persons (Silvestri & Lukasiewicz, 1987). Both figures—21 million and 19%—become key in drawing conclusions regarding the changing face of the work force.

Women will continue to join the labor force in growing numbers, according to *Occupation outlook handbook* (1992) forecasted:

The numbers of women in the labor force will increase faster than the total labor force. Women were only 40 percent of the labor force in 1975; by 2005, they are expected to continue 47 percent. Meanwhile, almost five of the 21 million new labor markets entrants will increase from minorities and immigrants in 2005 than they do today. There will be substantial expansion in the number of Hispanics, Asians, and Blacks are anticipated, reflecting net immigration, and higher birth rates among Blacks and Hispanics. (p. 8)

The *Occupational outlook handbook* (1992) reported America's workers will be an increasingly diverse group as we approach the year 2005:

White non-Hispanic men will make up a smaller share of the labor force, while women and minority group members
will comprise a larger share than in 1990. White non-Hispanics have historically been the largest component of the labor force, but their share has been dropping and is expected to fall from 79 percent in 1990, to 73 percent by 2005, increasing by 75 percent. Blacks, Hispanics, and Asians and other racial groups will account for roughly 35 percent of all labor force entrants between 1990 and 2005. (p. 8)

Black, Hispanics and Asians account for, "a rising proportion of the school population; 23 of the 25 largest city school systems enroll more minority than non-minority pupils" (Hoyt, 1988, p. 32).

The changing age structure of the population will "directly affect tomorrow's labor force. As the proportion of young workers decline, the pool of experienced workers will increase" (Occupational outlook handbook, 1990, p. 9). The percentage of 16-24 years old in the total labor force will, "decline from 20% to 16% in 2000, while the percentage of 25-54 year old workers will increase from 67% to 73% in the year 2000" (Hoyt, 1988, p. 32).

When compared to current jobs, a higher percentage of the new jobs to be created during the 1986-2000 period will demand, "some form of post-secondary education while a sharp decline will occur in the percentage of new jobs requiring less than a high school education" (Hoyt, 1988, p. 32). Skill levels required for occupational success will, "increase with
both the content and complexity of jobs being modified by technology change" (Hoyt, 1988, p. 32).

Integration Of Vocational And Academic Education

Although the task of bridging vocational and academic education curricula is significant, natural connections exist. Common skills are needed in both sets of curricula (Dunn, 1988; Pritz, 1988). In other words, the teacher needs to emphasize global skills which can be applied throughout the vocational and academic curriculum. The students need to be able to realize contextually how to apply their skills in multiple areas of interest and to have some relevant knowledge that operates across different subjects. School administrative leadership needs to choose a model to integrate vocational and academic curricula into their school district. Bottoms and Korcheck (1989) provide an excellent argument for the need to integrate academic and vocational education:

The thinking and problem-solving skills of high school students will develop more readily if they understand the connection between what they are learning and how it can be used. One way students can achieve this insight is if meaningful applied learning activities are integrated into communication, mathematics, and science courses and if essential concepts and skills from these courses are coordinated with instruction in vocational courses. Once students understand the application of academic knowledge
they are far more likely to recall and apply information than if they rely on rote memorization. (p. 3)

Therefore, the challenge of bridging the two curricula can be met using an applied approach to teaching basic workplace skills (Carnevale, Gainer & Meltzer, 1988). Curricula with an integrated approach enhances learning by accommodating the basic tenets of skills instruction, and by allowing for both the systematic and sequential development of information (Burrows et al., 1989).

Models Of Integration

Many models may be followed in developing integrated approaches to the delivery of vocational and academic curricula and instructions. Grubb (1991) has defined the following eight successful models of integration:

Incorporating More Academic Content Into Vocational Courses. Schools can work to incorporate more academic material into existing vocational courses, either through exhortation, through the adoption of new curriculum materials, or through the development of model curricula. (p. iv)

Combining Vocational And Academic Teachers To Enhance Academic Competencies In Vocational Programs. Academic teachers can then teach applied
academic courses modified for particular occupational areas, teach individual lessons or modules for vocational students, and help vocational instructors to develop their own academic exercises. (p. iv)

Making The Academic Curriculum More Vocationally Relevant. A third approach modifies the academic curriculum (i.e., instead of vocational courses) by incorporating vocational applications and reconfiguring academic courses so that the topics are more relevant to vocational students. (p. iv)

Curricular "Alignment": Modifies Both Vocational And Academic Courses. Another model combines elements from the preceding approaches, using more occupationally relevant material in academic courses, and more academic education in the vocational courses and then linking the two. (p. v)

The Senior Project As A Form Of Integration. Such a project forces senior students to integrate their learning from different courses, including the abilities learned in the vocational oriented workshops. (p. v)

The Academic Model. Academies are schools-within-
schools that typically include academic teachers in English, math, and science with a vocational instructor in subjects such as health, electronics, business, or agriculture, which gives focus to the academy. (p. v)

**Occupational High Schools And Magnet Schools.** These institutions can provide an obvious focus for efforts to integrate vocational and academic education and a culture in which it is easier to emphasize the occupational content of coursework. (p. vi)

**Occupational Clusters, "Career Paths," And Occupational Majors.** Like the occupational focus of the academy, occupational clusters facilitate cooperation among teachers, facilitate both horizontal and vertical alignment, and provide academic teachers with obvious vocational emphasis to incorporate in their classes. Clusters can also match students from different backgrounds with very different occupational ambitions, reducing the usual segregation of college-bound and vocational students. (p. vi)

**Implementing And Strengthening Integrating Of Vocational And Academic Skills**

It is no longer possible to compartmentalize education
into academic and vocational education. Education is a crucial element in preparation for a successful working career at any level. With rising average educational attainment, better educated students are available so that the employer seldom needs to hire the less educated employee (*American education and vocationalism*, 1974).

If it represents nothing else, a high school diploma is evidence of consistency, persistence, and some degree of self-discipline. The relevance of education for employment arises from the need for a better educated labor force and a technology that requires it. The educational skills of spoken and written communication, computation, analytical techniques, knowledge of society and one's role in it, and skill in human relations are as vital as the skills of particular occupations (*American education and vocationalism*, 1974).

**Bridging The Gap Between School And Work Place**

Vocational education is not a separate discipline within education, but it is a basic objective of all education and must be a basic element of each student's education. As a selecting-out process for the professions, educators have fostered, stressed, and rewarded the verbal skills important to students. California educational system has given too little attention to development of attitudes, manipulative skills, and adaptability to new situations (*American education and vocationalism*, 1974).
Integrating vocational and academic education can reduce the barriers of ignorance and proper occupational preparation can lower the barriers of poverty (*American education and vocationalism*, 1974). Therefore, there are some operational principles which emerging from *American education and vocationalism* (1974):

1) Where complex instructions and sophisticated decisions mark the boundary between the realm of man and the role of the machine, there is no longer room for any dichotomy between intellectual competence and manipulative skills and, therefore, between academic and vocational education. (p. 67)

2) Vocational education should be based on a spiral curriculum which treats concepts at higher and higher levels of complexity as the student moves through the program. Vocational preparation should be used to make academic education concrete and understandable; academic education should point up the vocational implications of all education. Curriculum materials should be prepared for integrating vocational and academic education to emphasize these relationships. (p. 70)

3) Occupational preparation need not and should not be limited to the classroom, to the school shop, or to the laboratory. Familiarization with the environment and discipline of the work place is an important part of occupational preparation. It is, however, difficult to
simulate in a classroom. Supervisors and other employees can double as instructors. The trainee learns by earning. On the other hand, the employers and their supervisors may be more production than training oriented. The operations and equipment of a particular employer may cover only part of a needed range of skills, necessitating transfer among the opportunities of institutional and on-the-job training in formal cooperative work-study programs. (p. 72)

4) Effective occupational preparation is impossible if the school feels its obligation ends when the student graduates. The school, therefore, must work with employers to build a bridge between school and work. Placing the student on a job and following up his or her successes and failures provides the best possible information to the school on its own strengths and weaknesses. (p. 72)

5) No matter how good the system of initial preparation and the opportunity for upgrading on the job, there will always be need for remedial programs. Remedial programs will differ from the preventive in that many of the students will require financial assistance while in training; the courses must be closely oriented to the labor market to assure a quick return to employment; and the trainee will be intolerant to what may seem to be the frills of regular vocational programs. (p. 72)
Summary Of Literature Review

It is clear that vocational education must become part of a more general effort to reform secondary education. Also, vocational education can no longer operate in isolation from the rest of the education mainstream. Moreover, vocational education can play an important role in improving education and employment opportunities of all students. In addition, effectiveness will be evaluated in terms of program outcomes rather than compliance with legislative procedures. If every student who reaches the age of seventeen between now and the year 2000 could read sophisticated materials, write clearly, speak articulately, and solve complex problems requiring algebra and statistics, the American economy could easily approach the four percent growth of the bottom scenario (Johnston & Packer, 1987). These students will need the comprehensive skills necessary to compete in a work place driven by a global economy.
CHAPTER THREE
DESIGN OF THE STUDY

Introduction

Population

This study examined the current levels of emphasis that secondary schools use in integrating vocational and academic curricula for all students in the San Bernardino and Riverside school districts. The investigator selected a sample of administrators and teachers who responded to a questionnaire with attached cover letter designed to collect information on sample variables (see Appendix A & B). These data were compiled and statistically analyzed to produce a population distribution and/or demographic profiles.

Research Questions

Research questions were designed to measure the extent of vocational and academic curriculum integration at the secondary school level. The survey was mailed to superintendents, administrators, and principals in San Bernardino and Riverside Counties. Respondents were asked to fill out a questionnaire which asked their gender and specific job at the school. This information was used to determine overall demographic characteristics of the population.

Answers to the following specific research questions were
sought:

1 What is the current level of vocational and academic curricula integration in the San Bernardino and Riverside Counties?

2 To what extent do district teachers and administrators philosophically support the integration of vocational and academic curricula?

3 What existing models for integrating vocational and academic curricula are currently in use?

4 What factors affect successful integration of vocational and academic curricula?

5 What barriers detract from successful curricula integration?

**Instruments**

The vocational and academic integration survey (see Appendix B) was used to collect the data for the study. This survey was designed as a data gathering instrument to obtain information from persons involved in implementing, utilizing, managing, and optimizing the integration of vocational and academic curricula.

The survey consisted of two sections: Background information and factors affecting curricula integration (see Appendix B).
Methods And Procedures

The questionnaire was originally developed by Dr. Joseph L. English. The investigator discussed the questionnaire with Dr. Joseph English, coordinator of the graduate Vocational Education Programs. The researcher then obtained permission from Dr. Ronald Pendleton, a Vocational Education professor, and Dr. Ted Vick, professor of Educational Administration, to pilot the survey in their classes at California State University, San Bernardino. The survey was administered on April 27, 1993. Twenty questionnaires were sent to superintendents, administrators, and principals in San Bernardino and Riverside Counties.

Validity

Construct validity was established by two panels of experts consisting of the university faculty and vocational graduate students at California State University, San Bernardino. Comments from the panels were reviewed and revisions in the instrument were made.

Data Analysis

All completed questionnaires were coded and designed to obtain specific information tied to each major research question. Data were entered into a personal computer and analyzed using the Statistical Package for Social Sciences
(SPSS). Descriptive statistics included mean and standard deviation were computed to show the scale of relationships. Frequencies and percents were computed to describe differences among groups of administrators and teachers regarding perceptions of vocational and academic curricula integration. Data from open-ended responses were summarized and categorized.
CHAPTER FOUR
FINDINGS AND DISCUSSION

The Problem

Do school districts currently adopt an integrated vocational and academic curricula? According to a review of the literature, it is generally agreed that the integration of vocational and academic curricula is a lifelong process. This study has examined this subject and obtained results to answer the following specific research questions:

1 What is the current level of vocational and academic curricula integration in the San Bernardino and Riverside Counties?

2 To what extent do district teachers and administrators philosophically support the integration of vocational and academic curricula?

3 What existing models for integrating vocational and academic curricula are currently in use?

4 What factors affect successful integration of vocational and academic curricula?

5 What barriers detract from successful curricula integration?

Demographic Data

High schools in San Bernardino and Riverside Counties
were investigated. In addition, data were included from graduate students' educational administration at California State University, San Bernardino.

Demographics Characteristics

There were 100 questionnaire sent and seventy-eight questionnaires returned (N=78). Fifty-nine percent of the sample was male while 41% was female (see Table 1). Data were collected from school assistant superintendents, principals, vice-principals, administrators, vocational instructors, and non-vocational instructors. Population percentages are shown in Table 2.

Table 1 Demographic Characteristics By Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Value</th>
<th>Frequency</th>
<th>Valid Percent</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
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<td></td>
<td>59.0</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td></td>
<td>41.0</td>
</tr>
<tr>
<td>Total</td>
<td>N = 78</td>
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<td>100.0</td>
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</table>
Table 2  Sample Distribution By Job Title

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant Superintendent</td>
<td>3</td>
<td>3.8</td>
</tr>
<tr>
<td>Administrator</td>
<td>11</td>
<td>14.1</td>
</tr>
<tr>
<td>Principal</td>
<td>7</td>
<td>9.0</td>
</tr>
<tr>
<td>Vice Principal</td>
<td>14</td>
<td>17.9</td>
</tr>
<tr>
<td>Voc. Inst.</td>
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<td>39.7</td>
</tr>
<tr>
<td>Non-Voc. Ins.</td>
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<td>15.4</td>
</tr>
<tr>
<td>Total</td>
<td>N= 78</td>
<td>100.0</td>
</tr>
<tr>
<td>Mean = 1.410</td>
<td>Std. Dev. = 0.495</td>
<td></td>
</tr>
</tbody>
</table>

Findings Related To Research Questions

Research Question 1

What is the current level of vocational and academic curricula integration in the San Bernardino and Riverside Counties?

While 43.6 percent of respondents currently had an integrated vocational and academic curricula, 51.3% did not have an integrated vocational and academic curriculum (see Table 3).
Table 3  Current Level Of Vocational And Academic Curricula Integration

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
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<tr>
<td>Yes</td>
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<td>43.6</td>
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<tr>
<td>No</td>
<td>40</td>
<td>51.3</td>
</tr>
<tr>
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<td>5.1</td>
</tr>
<tr>
<td>Total</td>
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<td>100.0</td>
</tr>
<tr>
<td>Mean = 0.974</td>
<td>Std. Dev. = 1.941</td>
<td></td>
</tr>
</tbody>
</table>

(Section one, question 3, see Questionnaire in Appendix B)

Research Question 2
To what extent do district teachers and administrators philosophically support the integration of vocational and academic curricula?
A large number of administrators and teachers still believed that all students were best served by the existing dual system of vocational and academic education. Data indicated that 42.3% were in favor of a dual system of education while 55.5% did not agree with existing dual system (see Table 4).
Table 4 Response Distribution Regarding Dual System Of Vocational And Academic Curricula?

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33</td>
<td>42.3</td>
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<tr>
<td>No</td>
<td>43</td>
<td>55.5</td>
</tr>
<tr>
<td>No Answer</td>
<td>2</td>
<td>2.6</td>
</tr>
<tr>
<td>Total</td>
<td>N= 78</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(Section one, question 4, see Questionnaire in Appendix B)

In an effort teased out the extent which respondents philosophical support curriculum integration, i.e., vocational and academic, question five was asked as a validity checks on question four. Amazingly 65 respondents representing 83 percent of the sample agreed that students were not best served by schools that made an artificial distinction between vocational and academic curricula, especially in world driven by international economic competition (see Table 5).
Table 5  Response Distribution Regarding The Dual System And The Realities Of The Work Place

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>11</td>
<td>14.1</td>
</tr>
<tr>
<td>No</td>
<td>65</td>
<td>83.3</td>
</tr>
<tr>
<td>No Answer</td>
<td>2</td>
<td>2.6</td>
</tr>
<tr>
<td>Total</td>
<td>N= 78</td>
<td>100.0</td>
</tr>
<tr>
<td>Mean = 1.064</td>
<td>Std. Dev. = 1.342</td>
<td></td>
</tr>
</tbody>
</table>

(Section one, question 5, See Questionnaire in Appendix B)

Research Question 3

What existing models for integrating vocational and academic curricula are currently in use?

On the questionnaire, respondents were asked to select a model which described their school district's best approach to integrating vocational and academic curriculum. Eight models were based on a literature review and respondents were asked to select one of the eight models used in their district. The following models were provided:

1) **Incorporate** academic competencies into vocational courses.

2) **Combine** the effort of Vocational and Academic teachers to incorporate academic competencies into vocational courses.
3) Make academic curricula more vocational relevant (i.e., modify academic curricula, instead of vocational courses, by using vocational course examples and designing academic courses to be more relevant to vocational students).

4) Modify both vocational and academic curricula to be more compatible with one another.

5) "School-within-schools" that combine teachers of math, English, and science with vocational instructors to enhance vocational and academic curricula.

6) Develop occupational clusters that replace conventional academic and vocational departments as organizational units. Vocational and academic teachers work in each cluster under the elected cluster manager as using the quality circle as a management model.

7) Encourage single-occupation institutions to focus efforts on integrating vocational and academic education.

8) Maintain conventional vocational and academic departments, which organize students and teachers into career paths.

9) None are currently being used (see Table 6 & Figure 1).

Table 6 shows the frequency and percentage of respondents who indicated that they used one of the existing models for integrating vocational and academic curricula.
Table 6  Response Distribution Regarding Eight Models For Integrating Vocational And Academic Curricula (N=78)

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Incorporate</td>
<td>12</td>
<td>15.4</td>
</tr>
<tr>
<td>2) Combine</td>
<td>10</td>
<td>12.8</td>
</tr>
<tr>
<td>3) Relevant</td>
<td>5</td>
<td>6.4</td>
</tr>
<tr>
<td>4) Modify</td>
<td>6</td>
<td>7.7</td>
</tr>
<tr>
<td>5) Academic</td>
<td>8</td>
<td>10.3</td>
</tr>
<tr>
<td>6) Develop</td>
<td>2</td>
<td>2.6</td>
</tr>
<tr>
<td>7) Single Occupation</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>8) Maintain</td>
<td>14</td>
<td>17.9</td>
</tr>
<tr>
<td>9) None</td>
<td>21</td>
<td>26.9</td>
</tr>
<tr>
<td>Total</td>
<td>N= 78</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(Section one, question 6, see Questionnaire in Appendix B)
Research Question 4
What Factors Affect Successful Integration Of Vocational And Academic Curricula?

To answer this research question, the respondents were asked to give a written response. The following is a list of the responses received:

- Teachers do not understand nor do they have a mutual commitment to approach learning as an integrated activity.
- There are no in-service training programs for teachers and other staff.
- Academic teachers lack understanding about integration concept.
- Teachers are not interested in these programs.
- Administrators are not dedicated to integrating vocational and academic curricula.
- There is lack of collaborative relationship between the
discipline.

- Schools do not to enrich core vocational curriculum.
- There are shortage highly motivated and effective teachers.
- Deficiencies exist in the areas of staff and curriculum development.
- School systems must end the dichotomous relationship between vocational and academic education.
- Administration is ignorant of the purpose of vocational education.
- Integration of vocational and academic curricula is not accepted by instructors/professors.
- Administrators do not believe these programs can motivate students to make academic education an important part of vocational education.
- There is not teamwork between vocational and academic teachers.

Therefore, data validated the information from research question one which indicated that about one-half of respondents are doing nothing in term of integration. These data also explained finding related to table 6 which indicated that nearly one-half of the respondents were not using any of the integration models.
Research Question 5

What Barriers Detract From Successful Curricula Integration?

Again, to answer this research question, respondents were asked to give written responses. The following is a list of barriers provided by the respondents:

- Academic teachers are hesitant to get involved and accept the concept that vocational education is an important program.
- Tradition American education system does not serve students' needs or goals.
- Class distinctions that have existed between vocational and academic areas for years--academic in general will be a barrier.
- Schools need money for the repair of equipment.
- The integration of vocational and academic curricula--these concepts are not understood as the application of academic subjects to a skill oriented class--academic learning within context.
- Academic teachers have no ideas of how to integrate vocational and academic instruction.
- American educational systems need to reestablish traditions of separation of vocational and academic education.
- The teachers do not view vocational education as
true education.

. Academic teachers are difficult to persuade, but it only takes a few.
. Some administrators are fearful of facing new issues.
. Some academicians feel that vocational education is low-quality, inferior education.

It is apparent that the responses cited above reflect the following barriers:

. Academic teachers think that vocational education is a less important program.
. Academic teachers do not think that vocational education is a true form education.
. College educational programs are non-contextual and emphasize too much about the academic curriculum. Therefore, future and current teachers misunderstand the term of integrating vocational and academic curricula" and see no need for "learning in context."
. Some administrators like to keep the educational system traditional because they are not willing to face new issues related to the changing nature of the work place.
. Some academicians think that vocational education is an unimportant and low-class program only for low achieving students.
Discussion Of Findings

There were 100 questionnaires sent and seventy-eight questionnaires returned (N=78). Fifty-nine percent of the sample was male while 41% was female (see Table 1). Data were collected from school assistant superintendents, principals, vice-principals, administrators, vocational instructors, and non-vocational instructors (see Table 2).

Many respondents thought their school currently had an integrated vocational and academic curriculum (43.6%). Based on respondents to the eight models of vocational and academic integration, the results clearly showed that 2.6% of respondents actually indicated that they were using the most effective integrated vocational and academic model (see Table 6). Nearly 50% reported that existing dual programs were being maintained or that no models were currently used. In addition, clearly thirty-four representing 43.6% of respondents believed that all students are best served by the existing dual system of vocational and academic education (see Figure 2). It seems that approximately 50% of administrators and teachers philosophically did not support the integration of vocational and academic curricula. Nevertheless, sixty-five or 83.3% of respondents did indicate that in today's world of international economic competition, students are not best served by making an artificial distinction between vocational and academic curricula (see Figure 3).
Furthermore, respondents indicated that the following barriers affect successful integration of vocational and academic curricula:

- School systems must end the dichotomous relationship between vocational and academic education.
- The teachers do not view vocational education as true education.
- Four-year college educational programs emphasize too much about the academic curriculum so that future teachers misunderstand the term of integrating vocational and academic curricula.
Some academicians think that vocational education is an unimportant and low-class program only for low achieving students.

Consequently, the results of this study clearly indicated that most school districts in the two counties did not presently use an integrating vocational and academic model. Yet, they believed that they did use this type of curriculum. Also, forty-two percent of administrators and teachers reported that all students were best served by the existing dual system of vocational and academic education. Nevertheless, respondents seemed to confirm that students should rely on academic education more than vocational education in today's world of international economic competition. Yet, 83% of respondents did not think that students were best served by making an artificial distinction between vocational and academic education. This contradiction may be explained by the fact that some respondents may recognize their responsibilities, but feel powerless to modify the existing educational system.

Eight-three percent of respondents agreed that to provide academic education without integrating vocational and academic education is ignore the facts of modern technological life and cognitive psychology; to attempt one without the other is to be totally unrealistic in today's educational world.

Moreover, several barriers and attitudes affect the
implementation of such a curriculum. These are listed as below:

- School districts need funding;
- Teachers are not interested in these programs;
- Schools lack adequate in-service training programs;
- Vocational administrators are confused about who will teach these skills;
- School districts are not convinced that they can receive benefits from these programs;
- Some school districts are set in their ways and are not open to new ideas; and some academicians feel that vocational education is low-quality, inferior education.

Summary Of Discussion

In general, findings revealed that there was some emphasis given to integrating vocational and academic curricula at the secondary level. However, it was found that an integrated vocational and academic curricula was not actually being implemented. Although 43.6% of respondents indicated that their school districts currently had an integrated vocational and academic curricula. Yet, 26.9% of respondents indicated that their school districts do not currently use any one of the integrated models. In addition, 17.9% of respondents showed that their school districts still maintain conventional vocational and academic departments (see
Table 6 in page 61).

Even though 42.3% of administrators and teachers believed that all students are best served by the existing dual system of vocational and academic education. However, 83% of administrators and teachers did not think all students are best served by making an artificial distinction between vocational and academic education. On the other hand, school districts administrators and teachers did not philosophically support the integration of vocational and academic curricula.

Moreover, several barriers and attitudes affected the implementation of an integrated curriculum. Administrators and teachers did not think that integrating vocational and academic programs can motivate students. Districts were reluctant to make academic education an important part of vocational education. These concepts are not understood as the application of academic subjects to a skill oriented class—academic learning within context.

Consequently, the existing dual system, manifesting itself in decontextualized academics and academically debased vocational education, is part of the problem. On the other hand, in reality, the existing dual system blocks integration of vocational and academic curricula and continues to perpetuates a deep division that prevents the future preparation of all students for a secure economic future.
Conclusions

Vocational education for jobs related to technology is obviously not the only solution to the socioeconomic problems facing the nation. Vocational education, however, may be in the best position to break the tragic cycle of low economic growth, unemployment, effects automation, and inadequate education. As a result, there is some hope even in today's negative educational environment that vocational education can contribute to the development of world class workforce. The oft-quoted statement of Alfred North Whitehead (1949) seems doubly pertinent today:

In the conditions of modern life the rule is absolute, the race which does not value trained intelligence is doomed. Not all your heroism, not all your social charm, not all your wit, not all your victories on land or at sea, can move back the finger of fate. Today we maintain ourselves. Tomorrow science will have moved forward one more step, and there will be no appeal from the judgment which will then be pronounced on the uneducated. (p. 157)

From this study, certain basic findings have evolved which are fundamental in considering the role of vocational
education in social, economic, political, demographic, and technological change. The following conclusions have been derived from this research:

A **An integrated vocational and academic curricula was not actually being implemented.** Although 43.6% of respondents indicated that their school districts currently had an integrated vocational and academic curricula, 2.6% of respondents indicated that their school districts develop occupational clusters that replace conventional vocational and academic departments. Also, 17.9% of respondents indicated that their school districts still maintain conventional vocational and academic departments. Moreover, 26.9% of respondents showed that their school districts did not currently use any one of the integrated models. On the other hand, approximately 50% of respondents indicated that their school districts did not use an integrated vocational and academic curricula (see Table 3 & 6 in page 57 & 61). As a result, obviously, school districts were not using a model that research has shown to be most effective. However, data showed 43.6% of respondents indicated that their school districts were implementing an integrated vocational and academic curricula. Therefore, it is apparent that these districts need to have an effective delivery model e.g., polytechnic high schools which are designed to achieve integration. In addition, the integration of vocational and academic curricula must become a goal for the total
educational program.

School districts administrators and teachers did not philosophically support the integration of vocational and academic curricula. 42.3% of administrators and teachers believed that all students are best served by the existing dual system of vocational and academic education; however, 83.3% of administrators and teachers did not think all students are best served by making an artificial distinction between vocational and academic education. It is obvious that these results were in conflict and represented a philosophical dilemma. Hence, districts need to support integration not only from a philosophical perspective but also from the standpoint of implementation.

Several barriers and attitudes affect the implementation an integrated curriculum. For instance, administrators and teachers did not think that integrating vocational and academic programs can motivate students to make academic education an important part of vocational education. Also, college educational programs are non-contextual and emphasize too much about the academic curriculum content without concern for application. Therefore, future and current teachers misunderstand "the integration of vocational and academic curricula" and see no need for "learning in context." The problems of how to promote teachers' participation in both
pre-service and continuous in-service teacher education programs and to expand team work between vocational and academic teachers continue to go unresolved.

As a result, it is clear that, the existing dual system blocks the integration of vocational and academic curricula and continues to perpetuate a deep division that deters districts from meeting the needs and wants of all students who are interested in a secure economic future.

Recommendations

Specific recommendations of this study focused on the integration of vocational and academic education and the impact of contextual education on the integration process. These recommendations are addressed below:

. An integrated vocational and academic curricula must become a goal for the total educational program. The study has shown that some educators believed that students should rely on academic education more than vocational education. This bias stems from a known principle for organizational growth, that without careful control the growth of any social system will tend to become unbalanced. That is, a proper state of balance will be considerably more difficult to maintain in any system than unbalanced state. A substantial number of professionals inside and outside the educational system say that the worsening conditions of current society can be
credited to the imbalance in curriculum and educational opportunities that presently exists within the school system.

Polytechnic high schools are needed in order to achieve integration. Data suggested that respondents either do not have adequate philosophical framework or choose not to integrate vocational and academic program by maintaining existing dual system. It was obvious from the data that these schools lack the ability to create a total environment for educating students. The dichotomy is clear. A delivery model with appropriate leadership model for integration of vocational and academic in a contextual framework does not now exist.

On the other hand, contextualizing what is being learned in ways that reflect the nature or real-world tasks helps students understand the meaning and appropriate use of knowledge and skill in non-school situation. Thus, polytechnic high schools can function as the pedagogical model for integrating the best of vocational and academic education—a model for what to teach and how to teach it. In addition, these schools can deliver a contextual model of integrated knowledge that students need to obtain higher order skills and technical skills that lead to better paying jobs, and opportunities for higher education.
There must be support for integration from the administration. Vocational education, as with other enterprises, depends upon the adequacy and quality of administration. It seems obvious that complex educational endeavors cannot be operated without it. The existence of vocational and academic education over past years and its current position of growth and strength have been dependent upon adequate administration. The quality of vocational administration is crucial to the relevance of programs which have served the nation in its entirety, as well as large numbers of its youth and adults individually. The need for vocational education leadership has been posted.

Promote teachers participation in both pre-service and continuous in-service teacher education programs. Pre-service teacher education programs must provide future vocational teachers with the opportunity to obtain current experience in the occupational areas to be taught realizing the considerable body of skills and knowledge which vocational and academic teachers require. The vocational teachers' occupational experience must be real, not as an on-looker. This can be accomplished in pre-service programs that integrate professional teacher preparation courses and organized occupational activities. In many cases, teacher education institutions are deficient in such programs. To be viable in
the schools and to be in the vanguard of educational
innovation, vocational teacher education leaders must require
that pre-service teacher education preparation be redirected
to fulfill more adequately the need for experience and
relevancy (Barlow, 1974).

In-service programs should update teachers in
occupational changes and/or educational technology. All
teachers can use assistance in selecting pertinent
occupational change requirements necessary to their
instructional programs.

To be effective, in-service activities need to be related
to instruction based on participant involvement, and well-
organized around certain identified goals. Attending an in-
service program and returning with pedantic pronouncements
does not improve instruction but may instead become a waste of
valuable instructional time.

Emphasis and support must be increased for both pre-
service and in-service teacher education. These changes must
come about in the teacher education institutions so that
vocational education programs can maintain excellence.

. Expand team work between vocational and academic
teachers. Vocational and academic teachers also need
additional preparation in each other's fields. Academic
teachers can offer workshops to help vocational teachers
improve their knowledge of academic programs. Vocational
teachers can offer mini-courses covering occupational skills to help academic teachers relate their instruction to occupational reality. Academic teachers can be invited to vocational teachers conference to promote sharing of ideas and materials.

**Recommendations For Further Study**

Studies need to focus on determining the importance of academic education to the individual and his or her success in occupational preparation. Additionally, the need to preserve national values, cannot be overestimated. However, it is not enough for the great majority of students who work in today's society to provide them with academic education without integrating vocational and academic curricula. To do so is to ignore the facts of modern technological life; to attempt one without the other is to be totally unrealistic.

Additionally, studies need to be designed which enable California's educational system to give a new perspective on vocational education. One negative barrier detracting from efforts to integrate vocational and academic curricula, was found to be the lack of respect for vocational education. Therefore, San Bernardino and Riverside school district administrators and teachers must consentingly access the degree to espouse school philosophy supports the integration of vocational and academic curricula. It is obvious that students are not best served by making an artificial
distinction between vocational and academic education, especially in today's world of international economic competition in the work place.


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Appendix A
Cover Letter
April 24, 1993
Dear Colleague,

As part of our regular agenda in the Department of Vocational Education at California State University, San Bernardino, I am investigating the degree to which curricula integration is occurring in your district between secondary vocational and academic programs.

I would consider it a professional courtesy and if you would take a few minutes and complete the enclosed questionnaire. Your thoughtful cooperation and assistance shall be greatly appreciation.

Sincerely Yours,

Yi-Chuan Wu, Graduate Student
Vocational Education Graduate Program
Appendix B

Survey Instrument
VOCATIONAL & ACADEMIC INTEGRATION SURVEY *

* Definition integration: These two programs: Vocational & academic integration may be view as contextual in the sense that academic concepts are applied through work place application or a related context.
(Interview Dr. Joseph L. English)

SECTION ONE: Background information

(1). Gender   Male _____   Female _____

(2). Position _____________________________

(3). Does your school or district already have an integrated vocational and academic curricula? Yes _____ No _____

(4). Do you believe that all students are best served by the existing dual system of vocational and academic education? Yes _____ No _____

(5). In today's world of international economic competition, do you feel students are "best" served by making an artificial distinction between vocational and academic education? Yes _____ No _____

(6). There are eight models listed below. Please choose one of the models listed below that best describe your school's or district's approach integrating vocational and academic curricula:

Models

_____ 1). Incorporate academic competencies into vocational courses.

_____ 2). Combine the effort of academic & vocational teachers to incorporate academic competencies into vocational courses.

_____ 3). Make academic curricula more vocational relevant (modify academic curricula, instead of vocational courses, by using vocaitonally courses examples and designing academic courses to be more relevant to vocational students).
4). Modify both academic & vocational curricula to be more compatible with one another.

5). Use "academic" (school-within-schools) that combine teachers of math, English, and science with vocational instructors to enhance vocational and academic curricula.

6). Develop occupational clusters that replace conventional academic and vocational departments as organizational units. Vocational and academic teachers work in each cluster under the elected cluster manager as using the quality circle as a management model.

7). Encourage single-occupation institutions to focus efforts on integrating vocational and academic education.

8). Maintain conventional vocational and academic departments, which organize students and teachers into career paths.

9). None are currently being used.

SECTION TWO: Integrating vocational and academic curricula:
(Please answer the following questions)

What are the most essential factors affecting successful integration of vocational and academic curricula in your schools or district?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

List of the barriers to integrating vocational & academic curricula in your school or district.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________