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Implementation of Apprenticeship Programs in the High School Curriculum

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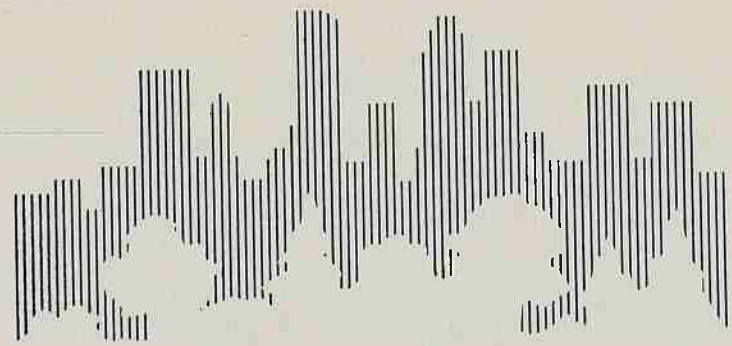

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MASTERS IN SOCIAL WORK THESIS

Marian A. Allen

Implementation of Apprenticeship Programs in the High School Curriculum

1994

IMPLEMENTATION OF APPRENTICESHIP PROGRAMS IN THE HIGH SCHOOL CURRICULUM

by

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This is to certify that the Master's thesis of Marian Arnita Allen has been approved by the Examining Committee for the thesis requirements for the Master of Social Work Degree.

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Your grace and mercy brought me through. I am living this moment because of you. I want to thank you and praise you too; your grace and mercy brought me through. Those words are given honor to God who is the head of my life. I would like to thank my parents, Mr. and Mrs. Tommie Lee Allen, Sr. for their love and support. A shout goes out to my siblings, Paula, Orlando, Tommie, Jr., Christopher, Timothy, and Terrance. I would like to acknowledge the guidance of the ancestral spirits of Grandpa Acie, Grandma Grace, and Aunt Hazel. Also, I would like to thank Grandma Mary and Grandpa Eddie "Buck" for their love.

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Special thanks to TypeQuik for their professional secretarial services. In closing, I would like to state that my life is a gift from God and what I make of my life is my gift to Him.

ABSTRACT OF THESIS

IMPLEMENTATION OF APPRENTICESHIP PROGRAMS
IN THE HIGH SCHOOL CURRICULUM

by

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April 18, 1994

Implementation of apprenticeship programs in the high school curriculum is a policy analysis of the efforts of the German apprenticeship system to help motivate and train non-traditional age students and apparently known non-college-bound youth. The study explains how the apprenticeship would utilize work places as learning environments, create opportunities for mentor relationships to provide important adult roles, and develop the flexibility, dependability and vocational skills that most employers agree will be necessary in the years to come.

The study will emphasize the necessity of helping young people to make the crucial connections between school learning, community participation, and a satisfying, constructive life's work.

The research will explore the existing German apprenticeship programs and analyze the policy. Also, the research will review existing documentation of programs in the United States. National experts will be consulted by phone for informational purposes.

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CHAPTER FIVE

CHAPTER ONE

Introduction

Today, approximately twenty million 16 to 24 year olds who skip college bounce from one dead end job to another until they reach their mid to late 20s. This is a big drain on both United States workers and the economy. The solution, many experts say, is an apprentice system like Germany's which fuses the last years of high school and the first years of work.

Apprenticeship is defined as a program that contains the following essential features:

1. Utilize work places and either community setting as learning environment;
2. Link work experience to academic learning
3. Give youth constructively ambiguous roles as, simultaneously, workers with real responsibilities and learners.
4. Foster close relationships between youth and adult mentors (Hamilton, 1990).

Roditi (1991) explains the concept of youth apprenticeship as: "apprenticeship because at the heart of these systems is the integration of school and work place learning-by-doing under the tutelage of experts; and refers to youths, because these systems address the personal and professional development of young people" (Stone, 1993).

Kazis (1992) summarized the major goals of the apprenticeship programs as follows:

1. to establish better links between employers and schools, between academic

and occupational instruction and between work-site and classroom learning;

2. to provide an opportunity for both academic and occupational advancement;

3. to provide entry to well-paying careers that offer both vertical and horizontal mobility;

4. to have substantial employer support and to respond to the existing and anticipated demand for skilled workers;

5. to be seen as an opportunity to restructure high school education; and

6. to be guided by a working coalition that includes all key participants and representatives of the state government (Stone, 1993).

Disagreement on whether youth apprenticeship represent an educational or a working experience occur throughout the existing literature.

There are three basic types of apprenticeships: exploratory, school-based, and work-based programs.

Exploratory apprenticeships: Community service work is especially appropriate for grades 7-9 youth who are not ready to make vocational choices. There is no presumption that the student will continue in this line of work, and unlike the usual teenage jobs, service programs may give young volunteers chances to plan projects themselves and take on more responsibility.

School-based apprenticeships: Some schools run their own enterprises, ranging from restaurants to day-care centers. School-based programs protect the young person's principle role as student and emphasize that lessons to be learned are primarily general

academic ones; job skills and occupational choice are critical.

Work-based apprenticeships: A particularly promising form of work-based apprenticeship combines schooling with an apprenticeship over two years of high school and two years of technical college. Upon completion of such a "2 + 2" program, an apprentice has earned a high school diploma, an associate's degree and qualifications for employment as a technician, a promising occupational category with career potential (Hamilton, 1991).

The National Youth Apprenticeship Act of 1992 aimed to establish programs for youth apprenticeship in order to help the youth make a smooth transition from school to the work place and to encourage academic achievement. There is a pressing need for the classroom to tailor its teaching to the demands of the modern high-technology work place, and as such, work-based learning models are effective approaches for preparing the youth at the secondary level. This program, which will be one to answer to youth unemployment and under employment, must be implemented if the United States is to gain a leadership role in the world economy scene.

The Research Question

Should apprenticeship programs be implemented in the high school curriculum?

Subsidiary Questions

1. In the United States, we are taught that after four years of college, comes good job opportunities. An apprenticeship is usually a technical position. Who will fill these positions?

2. If employers would buy into a youth apprenticeship system, what about the cost

(there is a need to free up the skilled employees and equipment for training, in addition to paying apprentice wages)?

3. Will positions be available to place students?

4. Where will the student be placed?

5. How is the relationship between apprenticeships and educational system described?

6. Should the United States educational system should include apprentice teaching in the curriculum?

The answers to these questions will be sought by telephone interviews with experts in the field of apprenticeship programs.

Hypothesis

Implementation of apprenticeship programs in the high school curriculum seems to be a way of offering underemployed youth work opportunities, whether the students choose college or move directly into the work place. An increasing stream of research on learning has provided support for the apprenticeship model. Since the mid-1980s, researchers have argued that there is a wide gap between the skills learned in the classroom and those used on the job. At best, students learn the skills they need to perform well in school, but those skills may not serve them well outside of school learning is not transferred. The emphasis on integrating academic and vocational education is one approach to bringing together the worlds of work and school (Bailey, 1993).

CHAPTER TWO

Historical Overview

The ancient practice of teaching crafts by means of practical activity in a one-to-one relationship has traditionally prepared boys to do men's work in many cultures. The most successful contemporary apprenticeship is the German dual system, which has been progressively modernized to prepare both boys and girls for twentieth-century business and industry (Hamilton, 1990).

Apprenticeship has always done more than teach a specific trade. Learning to work means learning to be an adult. When Freud was asked what a healthy person ought to be able to do well, he replied, "lieben and arbeitin" (to love and to work) (Erickson, 1968).

It seems that little research has investigated how well the secondary labor market prepares young people for adult work roles. However, according to evidence combined with what is known about the nature of work young people do, the literature suggests the following generalizations about the impact of informal youth work experience (Greenberger, 1986):

1. Young workers gain few technical skills.
2. Youth jobs do little to reinforce school learning.
3. Some youth develop worker virtues, especially social skills.

There are basic principles of youth apprenticeship programs:

1. They motivate youth to stay in school and become productive citizens.
2. They set high standards to promote high academic performance.

3. They link work and school through classroom curriculum, work place learning and work experience.

4. They prepare students for work by increasing participants' prospects for continued employment and education after graduation from high school and certification in programs that provide opportunity for continued education and career development.

5. They involve employers in the promotion of business involvement in the education of youth to help ensure development of a skilled, competent, entry level work force (Green, 1993).

According to Hamilton (1990) by the turn of the twenty-first century, the proportion of white male workers will be smaller than ever before; more workers will be women, African Americans, and Hispanics. A larger proportion of workers will have grown up in poor families. As a result of new technology and the continuing shift from manufacturing to service industries, many jobs will demand high levels of technical knowledge and skill, and most will require well-developed social skills. At the same time, others will be simplified to the point where unskilled workers will replace well-paid skilled workers (p. 1).

Current forms of education and training, which in the past have adequately prepared white males to fill available jobs, cannot survive unaltered the simultaneous transformation of work and the work force. During the 1980s, a school reform movement was motivated by the premise that making all schools as effective as the best traditional schools would meet the challenge. Improving schools is a necessary but not a sufficient response to new demographic and economic realities. Along with better

schools, a new institution is needed to connect schools to work places and to provide young people with clearer paths from school to work: apprenticeship (Hamilton, 1990).

American youth who do not graduate from college move gradually over a period of years from being full-time students who are not in the labor force to being full-time workers not enrolled in school. They enter career-level jobs even later. In previous decades, sufficient numbers of youth successfully made the transition and eventually assumed responsible work roles. That time has passed. To assure that the smaller, more diverse and more disadvantaged youth of the 1990s are prepared to do the work of the new decade and the new century, their transition must be made smoother and more efficient (Hamilton, 1990).

The American dream is to be able to rise from nothing to something on merit. However, 70 percent of Americans who finish their education without a college degree find it harder to attain that dream. By prevailing standards, they have failed (Hamilton, 1991).

Today, some politicians are looking to vocational training as an alternative bridge between school and career. The federal government now spends only $5.7 billion per year on employment and training programs; two-thirds of it is spent in the Training Partnership Act, which subsidizes on-the-job training by employers. America invests less in training than many of its economic competitors (Missing Bridge, 1991).

Apprenticeship Programs in Germany

The European experience with youth apprenticeship programs is especially instructive. Nearly 70 percent of all western Germans enter their nation's highly productive work force through apprenticeships that have their roots in the craft guilds of the Middle Ages. The typical apprentice ages are 16 and 19. The Germans traditionally spend three or four days a week working under a mentor and one or two days in a government funded vocational school learning the academic skills needed for their occupations (Toch, 1991).

In many European countries, apprenticeships are funded in part through mandatory employer payroll taxes. Board of labor employer and government representatives set standards in 300 to 400 occupations, and apprentices must pass examinations to qualify for entry into their fields (Toch, 1991).

In Wiesloch, Germany, the schools offer vocational subjects related to the employment needs of the community. Each has a curriculum of core academic subjects in addition to occupational courses. The German dual system of classroom and work site education and having working sites with local business (Perry, 1991).

For example, the enrollment of one school, which specializes in social work and domestic subjects, offers a two year curriculum. The first year devoted to class work at school, the second year including a weekly schedule of 13 hours of school and 27 hours with the employer.

At the second school which specialized in sales and business education, the course of study lasts two or three years and the curriculum is matched to the students'

apprenticeships. Students spend half a day in school and half a day at their employers. Students' schedules may be two days of school, two days of work or six weeks of school and six weeks of work.

At a third school, where a variety of trades are taught, students concentrate on one field but must also take some basic theoretical courses, such as religion, geography, economics, and computer science. Students spend a day and a half each week in school and the other three and a half days with their employer or in a school workshop offered for those who do not find an employer.

At an apprenticeship program at Heidelberger, Druck Maschinen, AG, an international company that produces printing press, many students study to become engineers, machinists, tool and die makers and electricians (Perry, 1991). Each year 400 students take the pre-apprenticeship exam, and only about 100 are accepted for this four year program that carries students from ninth grade through graduation.

The company spends about $92,000 per students over the four years of training. Students monthly stipends range from $450 to $650. They attend school on site one day a week and work four days. An apprentice works 37 hours a week and has the month of August off.

Each month, an apprentice class starts a new program of training, such as tool making, electrical work and drafting. Some courses, such as computer programming may run longer. Apprentices complete their schooling in three years and spend the fourth year in the shop. Data shows that 85% finish their apprenticeship while 10% leave to pursue further education.

Upon graduation from apprenticeship training, many students are offered full-time jobs with the company. Those who do not stay with the company go to work for other firms or may take more advanced vocational education (Perry, 1991).

The Danish school-to-work transition program is also widely admired by Americans. Danish eighth-graders "shadow" jobs for a certain period to decide what interests them then, like the Germans, make an apprenticeship-versus-university choice at age 16. Apprentices then alternate between periods on entry-level work and technical school. The Danish system emphasizes "metacognitive" skills - learning to work in teams, seeking new solutions to old problems.

Rogoff's (1990) "Apprenticeship in Thinking" is a major contribution to the study of cognitive development because it builds sociocultural factors into theory and method from the onset. Rogoff achieves this by starting with an analysis of the socially shared activities in which children participate, then proceed to an account of how this participation leads to the development of certain aspects of individual human cognition.

Rogoff's analysis has two levels of sociocultural phenomena. The first involves social interaction, especially as it is carried out by adult-child and child-child dyads in problem solving settings. It is by examining such social interaction that the concrete practices of "apprenticeship" can be described. Second, Rogoff studied the cultural contexts in which various forms of social interactional and individual psychological processes occur, but for the purpose of this research social interaction was examined.

Apprenticeship enables ordinary German teenagers to begin careers at the same age that United States counterparts are preparing youth for Wendy's.

Apprenticeship Programs in the United States

Stephen Hamilton, a professor of human development and family studies at Cornell University in Ithaca, New York, and an expert on the German apprenticeship model, notes that the success of a nationwide effort rests with securing the participation of employers. "Unlike school-based approaches to learning, youth apprenticeship absolutely requires the participation of employers" (Nation's Business, 1993).

The essential elements of apprenticeship are already in place in the United States. They are scattered throughout the country and enrolling small numbers of young people. These programs are seeds of a system that will enable every young person to move through a coherent sequence of apprenticeship experiences that are clearly connected to each other and to schooling (Hamilton, 1990).

An American system of apprenticeship should not be as narrowly focused on well-defined occupations as the West German system or channel young people at such an early age into rigid occupational tracks. Our labor market is too volatile for that, and we value school credentials too much. Certainly, we would not want a transitional institution for non-college youth to erect new barriers against upward mobility (Hamilton, 1991). However, we are looking toward a bridge between school and work for the non-college bound youth.

In 1992, President George Bush introduced legislation on Youth Apprenticeship. This legislation would establish a national framework for implementing comprehensive youth apprenticeship programs. These programs would have ben a high-quality learning alternative for preparing young people to be valuable and productive members of the

twenty-first century work force. Although this framework has been designed to be comprehensive and national in scope, it is also flexible enough to allow states to customize the model to economic, demographic, and other local conditions.

Bush was proposing this legislation in order to promote a comprehensive approach for helping youth make the transition from school to the work place and strive to reach high levels of academic achievement. The lack of such an approach is one very important reason that a significant proportion of American youth do not possess the necessary skills to meet employer requirements for entry-level positions.

There is widespread agreement that the time has come to strengthen the connection between the academic subjects taught in the schools and the demands of the modern, high-technology work place. Work-based learning models have proven to be effective approaches for preparing youth at the secondary school level.

The proposal suggests a student could enter a youth apprenticeship program in the eleventh or twelfth grade. Before reaching these grades, students would receive career and academic guidance to prepare them for entry into youth apprenticeship programs. Particular programs may end with graduation from high school or continue for up to an additional two years of post-secondary education. In addition to the high school diploma, all youth apprentices would earn a certificate of competency and qualify for a post-secondary program, a registered apprenticeship program, or employment.

A youth apprentice would receive academic instruction, job training and work experience. The program is intended to attract and develop high-quality, motivated students. Standards of academic achievement, consistent with voluntary, national

standards, will apply to all academic instruction, including the required instruction in the core subjects of english, mathematics, science, history, and geography. Students also would be expected to demonstrate mastery of job skills.

The proposal provides for involvement at the federal, state and local levels to ensure the success of the program. It also requires that employers, schools, students, and parents promise to work together to achieve the program goals. Enactment of the proposal would have resulted in national standards applicable to all youth apprenticeship programs. Upon completion of the program, the youth apprentice will have a portable credential that will be recognized wherever the individual may go to seek employment or pursue further education and training.

The bill would have established a formal process in which business, labor and education would form a partnership to motivate the Nation's young people to stay in school and become productive citizens. It would have provided American youth the opportunity to gain marketable and portable skills while establishing a relationship with a prospective employer (Bush, 1992).

This bill, National Youth Apprenticeship Act of 1992, was not passed. There is current legislation, School-to-Work 1993, which has passed the House and the Senate, and at this point, it is in conference committee.

While program supporters caution that the German system cannot simply be duplicated in the United States, aspects such as starting the program in high school and establishing skill certification can be incorporated into a program here.

A nationwide program is likely to win the support of Congress, eight

apprenticeship bills were introduced in the congressional session of 1992 (Nation's Business, 1993).

With the president's support, Congress is expected to pass youth apprenticeship legislation. It will offer training through its educational network, which makes use of distance learning. Bell South, in conjunction with the Communications Workers of America labor union, has devised training programs with the help of labor and management (Learning from Germany's Model, 1993). William Shaffer, Segment Manager for Bell South's training technologies states, "We think training and education, both on and off the job, is a real mainstay in our strategic position to be world class."

In addition to the Communications Workers, others among organized labor are keenly aware of the value of training. "Training in the construction industry which is all done through apprenticeships is probably one of the most important things we do," says Robert Georgina, President of the Building and Construction Trades Department. In his view, "the collective bargaining system represents the best way to negotiate training requirements" (Learning from Germany's Model, 1993).

The department believes that joint labor management action on work-related training is the best road to a high-skill, high-performance work place where employees are empowered to participate in decision making (Learning from Germany's Model, 1993).

The United States Chamber believes that delivery of federal job training and welfare services should be coordinated into one stop "skill centers" at the local level, says Joseph of the Center for Workforce Preparation and Quality Education (Learning

from Germany's Model, 1993).

In addition to streamlining current federal training programs, the administration has other ideas about improving the effectiveness of nationwide efforts. Labor Secretary Reich set four work place goals:

1. Providing a path to good jobs for the 75 percent who do not complete four years of college and whose real wages have been declining.

2. Helping workers who have been permanently displaced to get new jobs that pay at least as well.

3. Fostering business organizations that create career ladders toward high wage jobs, even for those individuals without university degrees.

4. Encouraging the creation of good jobs that are good not only because they pay well but because they provide a good work environment (Learning from Germany's Model, 1993).

(Nation's Business, 1993).

For those who will enter tomorrow's work force, the administration is expected to establish a nationwide youth apprenticeship program. When Bill Clinton was Governor of Arkansas, he set up a state youth apprentice program.

Governor Clinton, now President Bill Clinton, felt it was important that every community in every state of this nation develop a school-to-work program. An effective alternative is to draft an American version of European apprenticeships, not necessarily just like the German system, but one that blends vocational and academic education in high school, provides students meaningful work experience and continues their training

after graduation (Clinton, 1991).

Many young people are failing in school, and a lot of them will eventually drop out because school seems irrelevant to them; they are bored and see no future for themselves.

Clinton felt that if you put huge numbers of these young people into apprentice programs, you would be doing them an academic favor. A good comprehensive apprenticeship program would:

1. expand America's supply of well-trained workers;
2. narrow the work force earning gap that exists now; and
3. create an incentive for young people to stay in school and live a life free of crime, drugs, and teen pregnancy

(Clinton, 1991).

A number of other states, including Oregon, Pennsylvania, and Maine also have apprenticeship programs.

It was the clear threat of economic obsolescence that first stimulated Pennsylvania Youth Apprenticeship Program (PYAP). In the mid-1980s, Pennsylvania's steel mills and related manufacturing plants were closing down, driven into oblivion by cheaper production overseas. A census of the state's industrial base, however, showed that while heavy industry was in trouble, small precision shops were thriving, particularly those tied to high-tech industries like aircraft and electronics. However, especially in the metal working trades, continued prosperity depended on skilled labor, and the average age of a Pennsylvania metal worker was about 57. Half were expected to retire within a

decade, and few replacements were in the pipeline. Trade schools were overrun with applicants for auto mechanics programs but slots in the more exacting metalwork programs went begging (Kiester, 1993).

Like high schools all over the United States, Pennsylvania schools were not doing much to prepare students for the industrial work place. Fewer than 20 percent of young adults completed college degrees, yet the schools were concentrating on that 20 percent, says the University of Pittsburgh's Martin Nahemow, one of the planners of PYAP. Graduates emerged from school with a diploma and very little else. Moreover, an artificial barrier had been erected between the worlds of school and work. Although more than half of high school juniors and seniors held part-time jobs, most were in fast-food restaurants or other low-level, dead-end employment. "Germany is preparing kids for good-paying jobs in industry," Nahemow says. "We were preparing ours for Wendy's" (Kiester, 1993).

Under the direction of Robert Coy, Jr., Director of the Office of Technology Development in the Pennsylvania Department of Commerce, and with the assistance of Jobs for the Future, a statewide plan for school-to-work transition was agreed upon. Youth apprenticeship, initially focusing on the metal trades, would be the centerpiece. The program would be launched where precision industries were clustered and the need for trained workers was a problem, specifically, in Pittsburgh, Philadelphia and York-Lancester. Financial support came from the state, the United States Department of Labor, the Sloan Foundation and the Heinz Endowment (Kiester, 1993).

In Lycoming County of Pennsylvania, for years the county's eight high schools

had funneled vocationally-minded students to a vocational training school, Pennsylvania College of Technology, "Penn College." But Penn College was absorbed into the Penn State system and was becoming a four-year campus. There would be no further room for high school students (Kiester, 1993).

Van Dine, Ex-Vice President of Bethlehem Steel, had a strong connection in the business community; therefore within weeks, he got six employers to accept apprentices. Textron Lycoming took six; Grymman, two; smaller shops, one each. Six high schools also agreed to participate. A fully accredited academic program was set up under retired Superintendent of Schools, Tom Paternostro, in which students would remain technically registered at their home school. For their report cards, evaluation forms completed by the apprenticeship project would be translated into numerical grades (Kiester, 1993).

In Maine, high school students have a fourth option besides dropping out, trying to enter the work force with only a high school degree, or going on to college: an apprenticeship. More than 50 students entered a pilot program that will offer 20 weeks of school classes followed by 30 weeks of on-the-job training. Employers will pay the students the minimum wage of $4.25 per hour for the work they do; the money will be spread over the whole year (Job Training by Apprenticeship, 1992).

Companies that have signed on to the idea include Blue Cross/Blue Shield and Parker Hannifin's Nichols Portland Division. The program's big proponent, Governor John McKernan, hopes that by 1997 a third of the 12,000 who graduate in Maine each year will become apprentices (Job Training by Apprenticeship, 1992).

Another example is in Oklahoma, the Metropolitan Tulsa Chambers of

Commerce. "Craftsmanship 2000" is a four-year apprenticeship program in metalworking. The program is sponsored by local industry, Tulsa Public Schools, Tulsa County Area Vo-Tech training schools, and Tulsa Junior College (Szabo, 1992).

In the Detroit area, a cooperative education program is preparing young people for the work force and providing a transition from school to work. Detroit's program, a variation of an apprenticeship program, is generally offered in high schools, and two-year and four-year colleges. The program combines classroom instruction with on-the-job training related to a student's career goals (Szabo, 1992).

Created in September, 1991, Project ProTech in Boston is a work-based learning program that provides high school students part-time working and learning opportunities in six area hospitals. Eighty-two students from four high schools participate in the specially designed academic classes, after-school jobs, and hospital training experiences.

Four days per week, ProTech students attend classes at their local schools and go to after-school jobs at one of the participating hospitals. On the fifth day, students spend three to five hours at their host hospitals in classes and laboratory sessions taught by hospital staff members.

Emanual Berger, Vice President of Human Resources for the New England Medical Center, employing ten apprentices, says, "We think the program is really the answer to how we are going to prepare kids from the public-school systems for real jobs" (Szabo, 1992).

The United States Department of Labor and other organizations have provided more than $10 million in two year grants to six school-to-work transition programs. "In

most of these projects, the Labor Department only funds about 10 to 20 percent of the total cost," says James Erden, Administrator of the Office of Work-Based Learning in the Labor Department's Employment and Training Administration. "We require the communities and businesses to offer resources because we don't want to fund the program and then have it disappear when the funding stops" (Szabo, 1992).

An example of an apprenticeship and education-to-employment transition program exists currently at Honeywell, Inc. in Minneapolis, Minnesota, under the direction of Dr. Richard Green, Director of Corporate Human Resources. The Honeywell Youth Apprenticeship Program is a partnership of educators, business, labor, community members, students and parents. It is a combination of school-based and work-based learning for transition from school to work. Furthermore, the program is designed for mutual benefits of students and the employers (Green, 1993).

The factors for success on the program include:

1. commitment of executive management at Honeywell;
2. a structured/organized program;
3. on-the-job training by skilled employees;
4. coordinated participation of other businesses and organizations;
5. coordinated programs with local high schools (strong top school official support);
6. Honeywell's initial investment of over $300,000 for the development of a model program; and
7. recognition that program development is motivated by mutual self-interest

of employers, employees, and students.

(Green, 1993).

The Honeywell Youth Apprenticeship Program what it is, the benefits for the high school students and the benefits for Honeywell are demonstrated in the following charts:

Honeywell Youth Apprenticeship Program

What is it?

Partnerships of

Educators - Business - Labor -

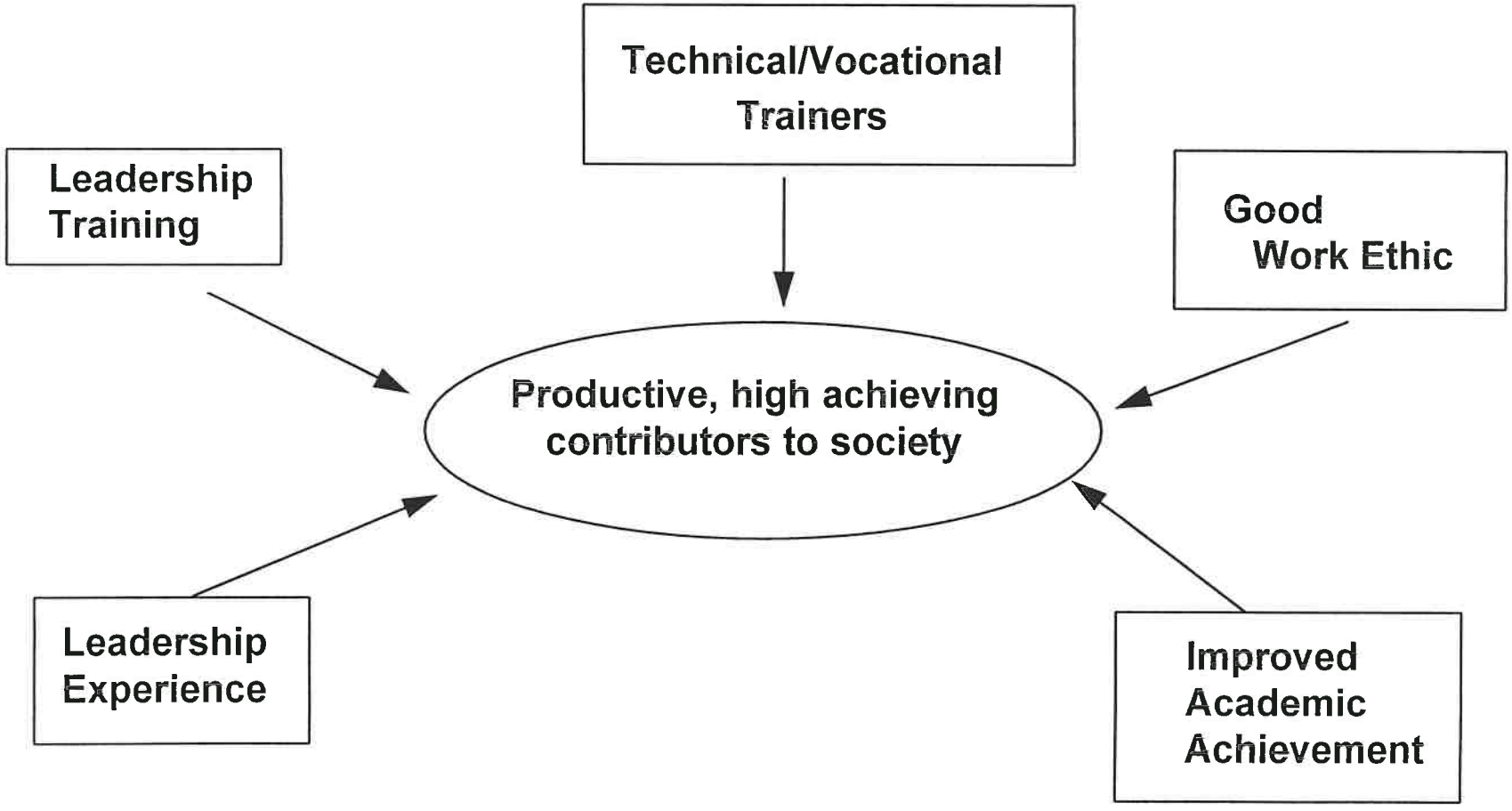
Community Members - Students - Parents

A combination of school based and work based learning for transition from school to work

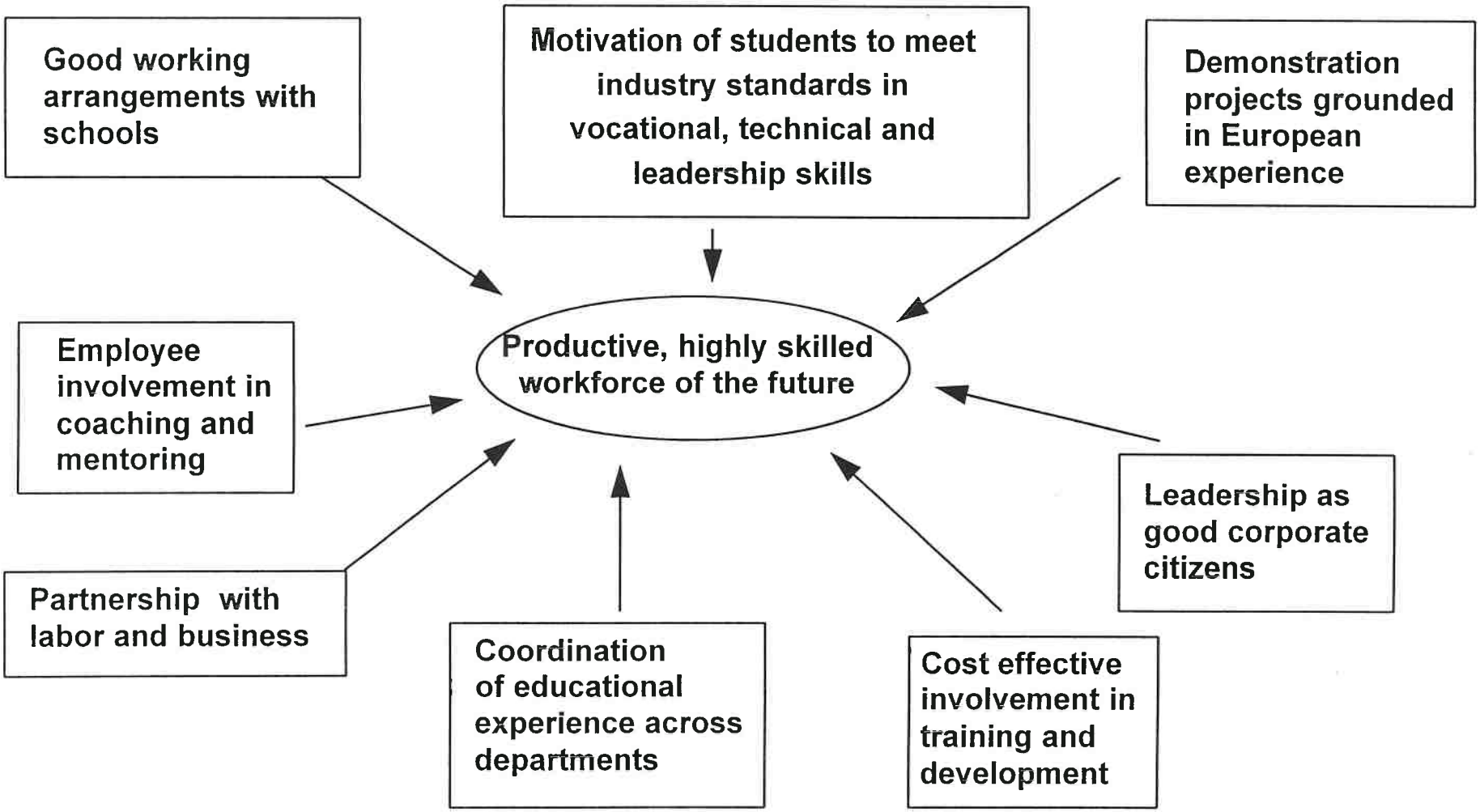
Program designed for mutual benefit of students and employers

Why Was It Developed?

Benefits for High School Students



BENEFITS FOR HONEYWELL



The informational interview with Dr. Green gave more insight about the program. Dr. Green visited Sweden, Denmark, and Switzerland to study their programs before implementing the program at Honeywell, Inc. and supplied concepts statements for this research.

The writer asked Dr. Green the subsidiary questions of the research:

1. In the United States culture, we are taught that after four-year college, good job opportunities. An apprenticeship is usually a technical position. Who will fill these positions?

"An example of who would be the teenage mothers at New Vista High School, which is an on-site school at Honeywell. Eighty percent of students go to college, while 20 percent are not planning for college. Furthermore, of the 80 percent who go to college, over 50 percent drop out. Therefore, the 20 percent who do not attend college of the 50 percent who drop out of college, these youth are the forgotten half. The forgotten half would be prime candidates for apprenticeship programs."

2. If employers would buy into a youth apprenticeship system, what about the cost (there is a need to free up the skilled employees and equipment for training, in addition to paying apprentices wages)?

"The cost is not viewed as a negative concept; the cost is an investment in the future; therefore, Honeywell will profit on their investment with a good employee who knows the job."

"Wages have three levels that are above minimum wages. The first year in the program, students will receive $6.00 per hour, the second year in the program, the

students will receive $6.25 per hour, and the third year in the program, students will receive $6.50 per hour.

"The employees view the experience as a mentoring opportunity."

3. Will positions be available to place students?

"Even though the business world is down-sizing, positions for apprentices will be available."

4. Where will the students be placed?

"Students will be in secretarial positions and work in the credit union."

5. How would you describe your relationship with the educational system, if any?

"I feel we have a strong cooperative relationship with the Minneapolis Public School system."

6. Do you feel the United States educational system should include apprentice teaching in the curriculum?

"Yes, even though the European system is good one, only parts can be implemented in the United States system."

Dr. Richard Green is a former educator and serviced in several educational positions. He was Dean of Academic Affairs of Augsburg College, Minneapolis, Minnesota, and serviced as interim President of Metro State in Minneapolis, Minnesota.

The leading coordination of various state initiatives concerning youth apprenticeship programs in Minnesota is Minnesota Technology, Inc., which is a public, not-for-profit corporation that was established by the State of Minnesota in July, 1991.

It is viewed as a neutral organization with a mission to help Minnesota firms become more competitive. This mission has resulted in positive and substantial response from the business community to calls for participation in youth apprenticeship programs. Arrangements with corporations such as Honeywell and IBM are already in the making. Minnesota Technology also serves as state clearinghouse for information on youth apprenticeship. At this stage, it is not clear which organization or institution will become a successor to Minnesota Technology once the program is in operation.

The Youth Apprenticeship Steering Committee had its first meeting in January, 1992. The membership of the steering committee is modeled on elements of the European Youth Apprenticeship system. Those represented on the committee are:

1. trade associations;
2. labor;
3. businesses;
4. Chancellor of the state technical college;
5. Commissioners of the Department of Education;
6. Commissioners of the Department of Jobs and Training;
7. Commissioners of the Department of Labor and Industry;
8. The Minnesota Business Partnership;
9. Education to Employment Transitions Task Force;
10. Governor's office;
11. Legislators with responsibility for education; and
12. staff from both United States Senators.

(Stone, 1993).

Preparations for two demonstration projects are in progress. Eight metal-working companies in Owatonna, Minnesota, are scheduled to begin apprenticeship with about 20 students enrolled. This is the first formal youth apprenticeship program in Minnesota. A printing site project is under consideration. Minnesota has passed legislation on youth apprenticeship. The state allocated a $3 million grant to implement programs throughout the state.

This chapter describes recent attempts to revitalize the apprenticeship concept by connecting it with a school-to-work gap and building the workforce for the future. Youth apprenticeship is seen as a connection between school and work that provides students on-the-job training while they are still in school.

CHAPTER THREE

Methodology

The intent of this policy study was to research the implementation of apprenticeship programs in the high school curriculum. The research explored existing German and United States apprenticeship policies. The researcher reviewed books, periodicals, and conducted telephone informational interviews with experts in the field.

A number of questions were asked the experts in the field:

1. In the United States, we are taught that after four years of college, comes good job opportunities. An apprenticeship is usually a technical position. Who will fill these positions?

2. If employers would buy into a youth apprenticeship system, what about the cost (there is a need to free up the skilled employees and equipment for training, in addition to paying apprentice wages)?

3. Will positions be available to place students?

4. Where will the student be placed?

5. How would you describe your relationship with the educational system, if any?

6. Do you feel the United States educational system should include apprentice teaching in the curriculum?

CHAPTER FOUR

Findings

The word apprenticeship has numerous definitions. Some definitions deal with overall goals, while others attempt detailed descriptions. It is the latter in which we find disagreements on the best ratio between work and education as well as weighing the relative importance of the various participants. Most agree that youth apprenticeship programs are designed to link education and work and give young students on-the-job training while they are still in school.

Across the country, states and institutions are trying to bridge the gap between education and the work place with variations of apprenticeship programs. The first step will be to take advantage of apprenticeship-like experiences. As gaps are identified, the planning group should design new combinations of schooling and work to address the needs of the "forgotten" young people in the society.

Expanding the apprenticeship will require changes in the ways both schools and work places deal with young people. This will require that educational systems in the United States do two things that have traditionally been assumed to be mutually exclusive:

1. School systems should make education more relevant to the world of work.
2. They should work toward the achievement of the good life for students. (Anrig, 1986).

Anrig further suggested that there is no choice about either goal; an elemental new reality has been thrust upon American's educators.

There is a great concern being expressed about naming the program, "Youth Apprenticeship." In the minds of many, apprenticeship is not related to the academic education, and it is difficult to advocate or promote the program as a possible means of transition to college or university. It has been suggested that youth apprenticeship be developed in relatively attractive, prestigious, higher-level occupations which possibly would create a new perspective on the program (Stone, 1993).

Presently, it is not easy to convince parents of high school sophomores that their children will be able to go to college once having participated in the program. Also important is to take into account the flexibility of the high school districts to accommodate the new demands of youth apprenticeship programs. For apprenticeship to succeed, schools will have to change their methods, schedules and assumptions. Few teachers are familiar with local, regional, and national job requirements; more flexible schedules need to be adapted to students' and employers' needs (Stone, 1993).

Study Limitations

One of the most visible limitations confronting the research is the lack of models (policy) to follow. Another limitation was the informational interviews with the experts in the field. The researcher was able to interview only one expert in the field for this program.

Contribution to Social Work

The rate of interest in apprenticeship programs within the field of social work is not new. There is a need for a more effective school-community partnership. Implementation of the apprenticeship programs will be the link between the school and

the community. In the school system, the social worker will be the coordinator of the program in the school. The social worker will coordinate, collect and maintain data about the effectiveness of the program.

There are a number of reasons why a social worker should collect and maintain data. The three most common needs for the data are: (a) to satisfy the requirements of the agency, state or funding source; (b) to document the outcome of services to clients or client system; and (c) to aid in determining the need for program change and future program evaluation (Staudt, 1991).

Therefore, coordination of the apprenticeship programs will be an extension of direct services for social workers.

The effectiveness of social work interventions within an alternative school for middle class drop-out youth has been proven. The results of student participation in two social work treatment approaches, a modified positive peer culture (PPC) mutual aid support group and a psychosocial skills training (PST) group, were compared, with a number of academic, psychological, and behavioral outcomes measured. The majority of students entering the alternative school program remained in the program and made substantial academic progress. Both approaches were effective in increasing the academic functioning of the students, with the PPC group having the most positive academic effects. The PPC group also improved the functioning of students in the areas of self-esteem and anxiety reduction, whereas the PST group positively improved depression levels and family functioning of youths (Franklin, 1991).

Therefore, the implementation of the apprenticeship program can be viewed as

another alternative for youth drop-outs that has a combination of mutual aid support (from the social worker) and skills training.

Contribution to the Educational System

Are schools adequately preparing students for the reality of work? Peter Drucker (1989) argued that they are not. He asserted that schools scorn the real world of work, failing to recognize that most Americans will or do work within a specialized organization. Not preparing students for this reality leaves them floundering as employees and lacking skills to effectively work as members of a team within an organization. To counteract this breakdown, Drucker believed that schools address the elementary skills needed by people to be effective in an organization, including the capacity to "shape and direct one's own work, contribution to the work place, and career by making an organization a tool for the realization of one's aspirations and values" (p. 19).

It may be that most levels of educational systems are failing to recognize the real needs of their students in relation to the remainder of their lives. With the quickening pace of technological change, large and progressive corporations are increasingly seeking applicants with abilities to learn and change with the times, who have strong basic academic skills, a willingness to work hard, and a capacity to think (Stone, 1993). "A steady drumbeat of criticism from all quarters has stirred grave doubts that the school can prepare qualitatively adequate human power to keep our economy competitive in an increasingly sophisticated world market" (William T. Grant Foundation [WTGF], 1988).

The conventional educational reforms suggested today (e.g., increased teacher

pay, student performance evaluations, teacher testing and recertification, immense computer purchases, more rigorous core curriculum) are scarcely revolutionary in the revolutionary times (Snyder, 1987). In fact, Snyder asserted that there is little empirical evidence that these measures will have any significant importance to public school performance (Stone, 1993).

Moore (1983) argued that educators should not succumb to the academic myth that systematic, rigorous, complex mental work occurs only in the classroom, or that practical experience is good only for practice and retention. Rather, educators should pay close attention to the kinds of mental operations students will be encouraged and expected to perform in the course of doing their work. Thinking in the real world may indeed supplement and reinforce school-based learning, but it can also do far more to develop valid and important learning in its own right (Stone, 1993).

In making a case for business involvement and support of education, the Committee of Economic Development issued the following statement:

> Human resources determine how the other resources of the nation will be developed and managed. Without a skilled, adaptable and knowledgeable work force, neither industry nor government can work efficiently or productively. The schools are the central public institution for the development of human resources. Tomorrow's work force is in today's classroom; the skills that these students develop and the attitudes toward work that they acquire will help determine the performance of our business, and the course of our society in the twenty-first century (Campell, Cunningham, Nystrand, and Vsdan, 1990).

Education methods and future work demands should be linked more effectively. While the responsibility of schools is not solely to prepare students for work, an emphasis on cooperative work strategies, experiential learning and instruction that requires thinking skills, rather than rote memorization, better prepares young people for the complex work place they will soon confront (Stone, 1993).

Future Trends

Buoyed by the German example, enthusiasm for a United States youth apprenticeship program has soared despite a failure to define precisely what apprenticeships would mean in the American context. Indeed, the term is currently used to cover a variety of objectives and program types, many of which are in conflict (Finegold, 1993):

1. President Clinton has proposed apprenticeships as a new training option for non-college-bound youth, intended to smooth the transition from school to work for a group now perceived to be drifting unproductively from job to job (Clinton, 1993).

2. Providers of vocational education and job training have lobbied for using apprenticeships to increase the resources and raise the status of existing programs (Job Training by Apprenticeship, 1992).

3. Education experts advocate using apprenticeships to transform the way young people are taught in schools. This goal fits well with the latest research, which suggests that the vast majority of young people learn best in small, cooperative groups in continuous, competence-based assessment and real world subject matter (Berryman, 1992).

4. The National Center on Education and the Economy has suggested restructuring the end of high school and the first year of college, making apprenticeships the educational pathway for most students (NCEE, 1992).

5. Employers have argued for enhancing United States competitiveness by providing a large supply of new recruits with both a strong general education and foundation and more occupational and firm specific skills (NAB, 1992).

If the federal government follows historical compromised modes of policy-making, the resulting apprenticeship package will include elements to satisfy most of these interests and will, therefore, be unlikely to solve America's skills problems. Indeed, it will add another program to an area already overflowing with different initiatives (Grubb, 1991). The danger of diffusing scarce resources too widely to have a real impact was evident in the President's initial budget proposals. He has the goal of creating an apprenticeship system that covers all 50 states, not a series of demonstration projects. But constraints imposed by the budget deficit mean that he has allocated an average of just over $5 million per state (rising to $10 million by 1997) - not nearly enough for a national system (Finegold, 1993).

To produce a large return on this relatively small investment, the administration must decide which objectives to pursue, then set out a clear strategy for achieving them. Three criteria derived from research on the German dual system and United States experience can guide policy-makers:

1. The system must have enough status to attract and motivate young people.

2. The system must provide incentives and institutional support for employers

to offer high-quality youth training.

3. The system must be feasible; i.e., one that is suited to the United States context and can be implemented with the resources available (Finegold, 1993).

Many apprenticeship advocates are holding up the German system as the model for the United States to copy in establishing a national network of youth apprenticeships. Advocates of the German model, however, often miss the extent to which German apprenticeships are part of a system, not simply another training program. It is not feasible to copy this system which evolved from the medieval craft guilds and thus is grounded in a long tradition of respect and reward for skilled manual careers, without the deep structural and cultural roots that support it. This system's components include:

1. An educational system which ensures that individuals entering apprenticeships have sound basic knowledge and skills from which to build more work-related competencies.

2. A network of powerful chambers of commerce in which membership of all local companies who administer the apprenticeship exams is compulsory and which place informal sanctions on employers who do not carry their share of the training burden.

3. Long-term financial relationships between banks and industry. Such relationships enable many firms to invest in the skills of the future work force even during recessions, when many of their United States counterparts cut training and lay off new recruits.

4. A highly regulated youth labor market in which trainee allowances are set

relatively low (averaging $524 per month in 1991), with few alternative jobs to attract teenagers and push up wages.

5. National standards that safeguard the quality of the training provided and ensure that apprentices in a given occupation are learning the same skills throughout the country. Individuals must complete their certification in order to work in many occupations, thus giving qualifications a high status and financial reward.

6. An ample supply of trained trainers (Meisters). Meisters oversee the quality of on-the-job training and link it to the latest changes in the production process. They also provide a career path for trainees, who can aspire to becoming a Meister after acquiring the necessary years of work experience and returning to education part-time to obtain additional qualifications.

7. An industrial relation system which includes the following:

   a. unions that cooperate with firms to promote the flexible work organization needed to make full use of the latest technologies; and

   b. Works Council that oversees the quality of training and protects trainees' interests within companies.

8. A partnership of government, business, and organized labor which can build, slowly, the consensus needed to change occupational standards and training in response to new skill demands.

9. A large pool of employers who have developed products and service markets and organized the work process in a way that utilizes the skills that apprentices acquire (Finegold, 1993).

The new administration should consider a more targeted approach that attempts to put in place in key economic regions of the United States some of the general lessons from Germany:

1. Involve all main actors.
2. Set clear, high standards.
3. Share costs equitably.

Correctly designed, apprenticeships could still meet the three criteria outlined earlier: attracting all individuals, creating incentives for employers, and accommodating the needs and constraints of the United States policy-making system (Hinegold, 1993).

One possible route would link youth apprenticeships with new administration's broader strategy for helping United States industry compete in a high-tech global economy. A key part of this technology strategy is to use federal matching funds to build a national network of Manufacturing Extension Centers and to create a new set of Regional Technology Alliances (Clinton, 1993). These cooperative ventures will provide employers, particularly small companies that are often beyond the means of individual firms; e.g., export marketing, technology diffusion, pooled research, business consulting. The government covers part of the costs of these services because of the public good associated with such investments, while firms pay a fee in order to be part of the consortia. Such arrangements have already proven successful in Japan, Germany and other industrialized countries (Hirst, 1989).

To motivate individuals to participate in such a system it is crucial that apprenticeships be open and attractive to all young people not just the non-college-bound.

CHAPTER FIVE

Conclusion

This paper is a timely one. Society's social organizations, such as schools, are constantly admonished that they must minister to the whole person. Nowhere is this proviso more relevant than for the education system. There is a danger that in trying to meet the real educational needs of the youth, we will exacerbate the social and psychological problems of the educational system.

The demographic forces are rapidly changing in the United States work force, also the economic and technical forces are changing the nature of the work to be done. The challenge facing the nation is to prepare a changing population of young people to do new kinds of work.

As a result of new technology and the continuing shift from manufacturing to service industries, many jobs will demand high levels of technical knowledge and skill, and most will require well-developed social skills (Hamilton, 1990).

The United States can adapt some of the principles from the German system, but a truly viable American apprenticeship must be reinvented to suit a different economy and educational system.

Improving schools is a necessary but not a sufficient response to new demographic and economic realities. Along with better schools, a new institution is needed to connect school to work-places and to provide young people with clearer paths from school to work: apprenticeship (Hamilton, 1990).

There must be a new element of respect to students in vocational education. We

must have a strong form of education for those who prefer vocational training in high school and post-secondary institutions.

We must strengthen our current vocational education programs. This means putting the newest technology in our schools so that companies will employ graduates trained on current systems. Business must bear its share of this expense (Perry, 1991).

Do we need to revise our education system and the way we view education to make us more competitive in the international marketplace? After looking closely at the German system of education, the answer is yes. Such programs will take years to set up. But there may be no alternative if students are to become better prepared for the real world of work.

A research agenda needs to evaluate further the effectiveness of the components of the apprenticeship model (and the programs that share some of those components) and develop a better understanding of some of the practical and political barriers to implementation so that they can be overcome. The following is a list of some key areas for research.

1. There appear to be many lessons to be learned from agricultural education. Unfortunately, most of the available evidence on its effectiveness has been produced by enthusiastic advocates. As a result, the many positive reports need to be viewed with some skepticism. Nevertheless, agricultural education is worth more scrutiny. This could include more systematic studies of its effects; an analysis of the implications for its effectiveness as it shifted from a family farm-based program to one that serves a more industrialized agricultural sector; and the extent to which the agricultural milieu is simply

so unusual that lessons from the programs are of little use in other situations.

2. We need to know more about the extent to which college-bound or more academically-oriented students can benefit from applied programs. One place to start might be a more systematic analysis of the post-secondary education experience of the graduates of the types of school-to-work programs discussed here. A better understanding of the career patterns of graduates of vocationally-oriented community colleges would also help shed light on this subject. A good deal could be learned from both pilot or demonstration projects, as well as case studies and data analysis (probably involving data collection).

3. We need more information about the experience of minorities in apprenticeship-like programs. We raised the potential problems with discrimination that might result if the work place takes on a more central role in the general education system. Discrimination may also be an issue if programs become more selective as they improve.

4. We also need a better understanding of the current and potential incentives that employers have for participation in youth apprenticeship or other school-to-work programs. An analysis of employer participation in cooperative education might be one place to start. This could be related to a broader economic analysis of training currently provided by firms. A critical look at the educational content of coop programs could help us to understand the potential for conflict between employer interests and the creation of effective structured learning experiences on the job. This knowledge could lead toward the development of appropriate labor market institutions and incentives to

encourage and regulate employer participation in youth apprenticeship.

5. There are some research opportunities for analyzing the participation of German companies in that country's apprenticeship system. As we pointed out, only a minority of German firms participate, yet the system is largely successful. Although the United States and German systems are very different, the German experience could provide some useful insights for this country.

6. A central emphasis of this report has been the issue of on-the-job pedagogy. Not surprisingly, educators have not thought much about how to design or evaluate on-the-job learning experiences. It would be worth learning more about how the German and other European communities do this. There may also be some lessons for effective on-the-job education to be derived from experience with corporate training. In addition, many of the operators of current school-to-work programs have probably tried to strengthen their on-the-job components, yet there has been no systematic account or evaluation of their experiences.

7. We should encourage more thinking and research on classroom simulation of structured work-based learning and its benefits. What are the barriers to expanding these programs on a large scale, and is there a way to design them so as to encourage stronger links to employers?

8. Rather than trying to solve the certification problem in the abstract, efforts to strengthen assessment and certification need to be integrated into a broader discussion about the nature and scope of youth apprenticeship and other school-to-work programs.

Many barriers stand in the way of the development of a large-scale youth

apprenticeship program. Nevertheless, we believe that the education reform discussion, of which youth apprenticeship programs are a part, is extremely important. Many of the reforms that are associated with apprenticeship can make fundamental contributions to the broad movement to strengthen education. These include efforts to break down the distinctions between learning and working, school and community, academic and vocational instruction, and college-bound and non-college-bound students; to foster interactive links between schools and employers; to incorporate authentic work-related learning into the education of large numbers of adolescents; and to address the issues of assessment and certification within a broad and comprehensive framework. Current models of youth apprenticeship may have to evolve into strategies that will make them appropriate for the economic, cultural, and institutional context of the United States. In any case, the experience that we gain through efforts to develop youth apprenticeship models and their components will certainly lead to a more effective education system in the United States (Bailey, 1993).

In comparing the Germany and the United States models, the chart clearly shows the vast differences in the programs. One issue that must be addressed in both models is gender. Gender identity is based on a sense of oneself as male or female; sex roles involve socialization into norms regarding masculinity and femininity. Yet being male does not necessarily mean being "masculine" in a traditional sense; being female does not necessarily mean being "feminine." Thus, a woman who enters a historically male occupation such as welding, and who displays such traditionally masculine qualities as physical strength and assertiveness, may have a positive and highly secure gender identity

(Schaefer, 1983). Therefore, the apprenticeship programs should not be restricted by gender for participation. The question should apprenticeship programs be implemented in the high school curriculum? The answer is yes. But the answer is not so simple. Germany's apprenticeship model cannot really solve the major educational challenges facing the United States. The United States first must teach comportment skills such as punctuality, language, mathematics, and reading skills. Apprenticeships can help ease the transition from school to work, but we must train young people for jobs of the future and make sure that the business community benefits.

APPRENTICESHIP

	GERMANY	UNITED STATES
AGE:	16-19	16-18
JOB TRAINING:	3-4 DAYS	1 DAY (3-4 HOUR) USUALLY AFTER SCHOOL
CLASSROOM	1-2 DAYS	4 DAYS
STIPENDS	$450- $650 MONTHLY	$4.25- 6.00 HOURLY

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APPENDIX A

Informational Questions

1) In the U.S. culture, we are taught after four years of college comes a good job. An apprenticeship is usually a technical position. Who will fill these positions?

2) If employers would buy into a youth apprenticeship system, what about the cost (need to free up the skilled employees, and equipment for training, in addition to paying apprentices wages)?

3) Will positions be available to place students?

4) Where will the students be placed?

5) How would you describe your relationship with educational system, if any?

6) Do you feel the U.S. educational system should include apprentice teaching in the curriculum?

BASIC PRINCIPLES OF YOUTH APPRENTICESHIP PROGRAM