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ABSTRACT

A 1991 study tour to Germany, Denmark, and Sweden investigated youth education and training policies, systems, methods of financing, and programs. Concerns were integration of academic and practical skills training, assessment of student competencies for employment, expectations and outcomes of employment preparation for all youth, and system governance, policies, and finance. Researchers were struck by the intertwined nature of academic and practical skill development and the complicated pattern of movement of students between work- and school-based training. Responsibility for assessment of student competencies for employment was assumed by craft and occupational chambers (Germany) and trade boards (Denmark); the Swedes did not emphasize examinations. All three countries had formal structures for providing youth with transitions from school to employment that ensured that young people reach adulthood with marketable skills. In Germany, in-school education was the responsibility of the states; the federal government oversaw work-based education. In Denmark and Sweden, vocational training was a shared financial responsibility of federal, state, private businesses, and collective business funds. Recommendations for a transformed system of youth education and training in the United States included better information on careers and career preparation, clearer pathways to careers, and improved methods for determining, teaching, and assessing skills necessary for success in the workplace. (Appendixes include a list of 13 sources and a tour itinerary.) (YLB)

EUROPEAN

LESSONS

from

SCHOOL

and the

WORKPLACE

Council of Chief State School Officers
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1991

CONTENTS

COUNCIL OF CHIEF STATE SCHOOL OFFICERS (CCSSO)

The Council of Chief State School Officers (CCSSO) is a nationwide nonprofit organization of the 57 public officials who head departments of public education in the 50 states, five U.S. extrastate jurisdictions, the District of Columbia, and the Department of Defense Dependents Schools. It has functioned as an independent national council since 1927 and has maintained a Washington office since 1948. CCSSO seeks its members' consensus on major education issues and expresses their views to civic and professional organizations, to federal agencies, to Congress, and to the public. Through its structure of committees and task forces, the Council responds to a broad range of concerns about education and provides leadership on major education issues.

Because the Council represents each state's chief education administrator, it has access to the educational and governmental establishment in each state and to the national influence that accompanies this unique position. CCSSO forms coalitions with many other education organizations and is able to provide leadership for a variety of policy concerns that affect elementary and secondary education. Thus, CCSSO members are able to act cooperatively on matters vital to the education of America's young people.

The CCSSO Resource Center on Educational Equity provides services designed to achieve equity and high quality education for minorities, women and girls, and for the disabled, limited English proficient, and low-income students. The Center is responsible for managing and staffing a variety of CCSSO leadership initiatives to assure education success for all children and youth, especially those placed at risk of school failure.

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PURPOSE

The Council of Chief State School Officers (CCSSO) conducted a study tour to Germany, Denmark and Sweden in the spring of 1991. The tour's purpose was to inform the activities of the Council and shape efforts supportive of its 1991 priority to improve connections between school and employment. The Council's goal is improvement of educational outcomes for all youth. Chief among these outcomes is preparation for employment and adult roles. The Council seeks changes in the capacity of American schools to provide programming to motivate and retain youth through to high school graduation and to position them to pursue both educational and occupational options after graduation.

Providing improved options for continued education, training and employment for greater numbers of our young people will require new alignments of schools with the resources, expectations and support of other stakeholders in the community—businesses, employee unions and social service organizations. Among the activities conducted through the Council's 1991 priority of connecting school and employment was the identification and study of successful models abroad and in the United States for providing youth with transitions to employment and adult roles. We wish to share these observations from the study tour with policymakers, practitioners, employers and parents so that together we can align our schools with the goals of the high-performance workplace and with the goal of a higher quality of adult life for our young people.

Before the tour, the Council conducted a preliminary review of the literature on the German, Danish and Swedish models of youth education and training. This review expanded our knowledge of these models and their evolution from the Middle Ages through the continual adjustments made and being made in the 20th century. But we found there was no substitute for being there and talking to people—educators, industrialists, craftsmen, regulators, standard setters and students. This immediacy was essential for understanding the essence of these systems and relating them to their counterparts in the United States.

The information distilled from the study tour and other research activities is being used to support activities and products of the Council on (1) the systemic changes required in policies, service systems, financing and curriculum for youth education and employment preparation in the United States and (2) programs and account of the tour. It is designed to help educators and other policymakers understand how employment preparation is subsumed within the educational structures of the respective countries—and how we can organize our own resources to create smoother linkages between school and employment for American youth.

Tour participants included Council President Herbert J. Grover, Superintendent of Public Instruction, Wisconsin; Robert Bartman, Chair of the Council's Task Force on Connecting Education and Employment and Commissioner of Education for Missouri; Gordon M. Ambach, CCSSO Executive Director; David Hornbeck, past Superintendent of Public Instruction in Maryland and consultant; and Council staff, Cynthia G. Brown and Glenda Partee. In addition, James R. Klauser, Secretary for the Wisconsin Department of Administration, accompanied the group as a representative of the Governor of Wisconsin.

We wish to thank The German Marshall Fund of the United States for its support of the tour. Special thanks go to Program Officer, Anne Heald, who provided background information and advice as we prepared to study the respective European systems of youth education and training and as we synthesized its components for the improved structuring of our own system. Glenda Partee of the Council staff was responsible for documenting, analyzing and summarizing the information and lessons of the study tour.

METHODOLOGY

An investigation of youth education and training policies, systems, methods of financing and programs in other countries requires some understanding of the context of education and training as components of a broader economic policy for national development. Equally important is an understanding of the country's vision about the value of employment to the lives of individuals, their development and the society as a whole. These overarching issues are critical to understanding and improving connections between education and employment. Therefore, where possible, information is provided on the broader elements of these European societies—levels of unemployment and policies that address these problems, the quality of the general education system and the place of occupational education within that system, the diversity of the work force and strategies used for building a high-quality work force.

Before the tour began, we talked with U.S. policymakers and practitioners who had carefully observed these systems. Several stressed the need to get a feeling of the various dynamics and elements at work in each. They indicated the difference in attitude among many Europeans, who clearly view the targeted goal of education as preparation for employment versus the more diverse and more general goals for education held by Americans.

Work as an integral part of life and well being is central to the education provided in these countries. This philosophy is reflected in the curriculum and the pedagogy of the school and of the workplace. Hence, career guidance is begun at an early age. Structured pathways to education and employment are multiple, both divergent and convergent. There is much adding to and subtracting from these approaches as needs and interests dictate.

In Germany, Denmark and Sweden, many sectors of the population feel a collective responsibility to prepare youth for employment in the national interest and as a service to the next generation. A great variety of resources from the public and private sectors is committed to preparing youth for responsible roles in the workplace and, more broadly, for adulthood. Youth are given not just one chance, but many opportunities to succeed. Standards for success are reflective of the standards of the workplace and co-determined by employers, employees and educators. These standards, however, are never lowered; nor are shortcuts devised for students. As a result, few youth are left on the margins of society. Finally, for those who do not succeed, the welfare state provides many supports and additional opportunities for recovery.

Experts warned that our traditional notions of tracking, learning by doing, counseling and mentoring may be seriously challenged and changed within the context of these systems. They also warned of differences of equity and fairness imbedded in our respective cultural traditions. Although situations would not be comparable to our own, we were advised to consider the bigger picture of how large cohorts of youth are readied to assume responsible positions in the society.

We were reminded that our own education system and present-day curricula are in many ways still tied to the dictates of a past economic system based on a largely agrarian society. On the other hand, many European nations lacking our abundance of national resources have tailored their education and training systems after innovations and changes in technology. Also, in these countries the education and training curriculum is often the result of negotiations among unions, businesses, industry and education. Hence, we were directed to consider carefully these alliances seldomly observed in our country and how education serves a catalytic function among education and training stakeholders.

We were apprised of the dynamic changes expected and brought about by the plan for the European Community as well as by the reunification of Germany. These changes are profoundly affecting education and training in these countries. Young people must now view their careers and career preparation in terms of the greater competition and demands of the total resources of the collective countries of Europe. Federal governments are assessing their own problems and strengths in determining how they will be "harmonized," not "standardized," in the European Community. Many of these changes parallel our own reasons for systemic change and are encouraging and illustrative of the interdependence of systems and their flexibility in sustaining new challenges and expectations for employment preparation and economic productivity.

Finally, we were reminded of the adaptability of Europeans in transforming many of our best practices (e.g., in higher education, management and learning systems) and integrating them into their own systems. We would find altered reflections of ourselves in these approaches and improvements on our own.

We were told to view the European systems in terms of their:

INCLUSIVENESS—*availability and access to a broad segment of the population. For example, two-thirds of German youth are educated in the dual or vocational training system; and 15 percent of college graduates hold an apprenticeship certificate. Publicly supported training is not limited to entry level jobs or to special populations of the countries.*

FLEXIBILITY—*ability to change curricula relatively quickly in time with changing job requirements and initiate new training and career-path options for individuals. The relationship of government, business and unions provides the mechanisms required for rapid change in response to new labor and economic needs.*

COMPETITION *among different types of institutions and the autonomy to provide the types and quality of programs required to improve their efficiency and attractiveness to students. There is also great competition among the best and the brightest of students for training positions in high-status industries, firms and occupations.*

HIGH STANDARDS *of quality, skills and expectations that apply to all students and result in high levels of knowledge in a broad spectrum of careers (e.g., mechanics that have knowledge of calculus). The apprenticeship certificate is the credential of a fully accomplished adult in society. It is the ticket to a wide range of middle management positions in a variety of professions, crafts and careers in small and large companies.*

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RESEARCH CONCERNS

Our primary concern, as we examined institutions with cultures and histories different from those of the United States, was to analyze the potential for transfer of practices. We hoped to add to our developing knowledge of how to improve systems of education and training for youth in the United States. We wanted to know: Can separate elements be transferred? What is the critical mass of components necessary for effective transfer? Can modifications be made to give "American style" to these practices?

The following are specific concerns needing improved levels of understanding (see Appendix A, "Sources," for references used in this research).

Integration of academic and practical skills training

What is the process for developing strong academic and occupational-skill capacities for students?

How are the practical and theoretical aspects of training provided by the company/business and the vocational schools?

Does this differ for large and small companies? by region/state? by sparse or densely populated areas?

Assessment of student competencies for employment

How are competencies identified and assessed? Who determines what is assessed?

What is the format of the exams?

What is the pass rate for intermediate and final exams?

Are there large differences in success rates of students based on factors of socioeconomic status, ethnicity and gender?

What happens if students do not pass the exams?

Expectations and outcomes of employment preparation for all youth

What are the outcomes of apprenticeship and learning for employment in terms of:

- student basic skills and work readiness levels
- student satisfaction and general preparation for work opportunities
- employer satisfaction with the quality of student apprentices and entry-level workers
- student and employer compensation and incentives?

What provisions are made for students to anticipate and prepare for their second or third job or a switch of occupation after initial employment?

What are the provisions for career education in the early grades?

How do you ensure equity and fairness in education and employment outcomes for all students?

System governance, policies and finance

What laws and public entities govern the system?

Who decides what employment needs are to be met through the apprenticeship programs?

What funding sources support apprenticeship and work preparation activities?

What structural connections are there among the job service, state and federal educators and businesses in preparation and placement of youth?

What is the basis of successful relationships between business and education in the system?

What mechanisms exist (e.g., services and safety nets) to ensure that all youth are prepared for and successful on the job?

What training and education opportunities are provided for teachers in schools and at the work site to ensure that the preparation needs of students and the worker-quality needs of industry are met?

TOUR ITINERARY

Our tour itinerary was wide ranging; it included discussions with people at the federal ministry level about policies and finances (in Germany and Denmark). We also spoke with principals and teachers in regular vocational schools and alternative vocational schools about student eligibility, curricula, staff preparation and the relationship of schooling to the workplace. We also visited other places of education and training, such as an extra-firm vocational training center for youth in apprenticeship training in small or particularly specialized companies (Germany); an in-company training facility at Huls Troisdorf AG, a leading manufacturer of plastics in Germany; and the Volvo truck factory in Hisingen, Sweden. Additionally, we visited providers of adult training, upgrading and retraining in Denmark and Sweden, including one facility run by the metal working trade. The full tour itinerary is listed in Appendix B.

Discussions were facilitated by a translator (in Germany) and through the use of "tutors"—people knowledgeable of the particular institutions who provided additional background on issues and answered questions arising during the interviews. In Germany, a representative of the Carl Duisberg Society served in this role; in Denmark, our tutor was an official of the Danish Ministry of Education, Department of Vocational Training.

OVERVIEW OF FINDINGS IN GERMANY

General Background

The reunification of Germany brought together in October 1990 the German Democratic Republic (GDR, or East Germany)—one of the most densely populated countries in Europe with a population of 16.7 million—and the Federal Republic of Germany (FRG, or West Germany) with a population of 59.2 million. It brought together a Communist government and economy with a per-capita income of approximately $10,000 with a parliamentary government based on a democratic constitution and a country with a much higher living standard (the per-capita income of the FRG stood at just under $20,000). The populations of both former countries, however, are primarily German; and they share many common traditions—chief among these, strong and valued systems of education.

The Council's study tour coincided with this period of great change in the two Germanys. However, interviews, site visits and collected materials are reflective of the experiences of the former FRG. References, structures and observations that follow pertain solely to the FRG. However, discussions with officials of the government in Bonn provide some insight on the impact on demographics, economy and education and training resources of the reunification.

According to Dr. Ulrich Hase, Assistant Head, Department of Vocational Training, Federal Ministry of Education and Science, "The German economy finances its training and upgrading." The country's reliance on the business sector to provide training funds and support to youth, access to the newest equipment, technology and management approaches, and oversight in credentialing and assuring quality of entrants to a given profession underscores the relationship between a strong and healthy business sector and a quality system of vocational education.

This factor is at the root of many challenges facing the reunified Germany and the officials within the Federal Ministry of Education responsible for out-of-school vocational training. According to Dr. Hase, the poor economic health of the former GDR, primarily related to low productivity levels, does not provide the infrastructure needed to support a quality vocational training system such as currently exists in the West. The Federal Ministry is grappling with how to rebuild the business infrastructure of the eastern part of the country to support its training needs, which in turn will support a more competitive economy. Satisfactory solutions have not been found that: (1) support the burgeoning manpower needs of the West; (2) do not deplete or transplant the young workforce of the East; and (3) do not resort to the high costs or the excessive "artificiality" of training resulting from out-of-company training.

The latter concern, we learned is characteristically German—the reliance on real-life working situations as the training ground for building skills and nurturing a work ethic in young people. How the Germans resolve the problems of building a business infrastructure supportive of their model of youth education and training in the East may be instructive to us in our own efforts to transform our schools and workplaces and use the resources of industry in new training and development programs for our youth.

Subsequent conversations with Hartmut Welzel, a West German consultant and past director of training at Ford Motor Company of West Germany highlighted the prerequisites on which the youth training system is based—prerequisites necessary for its successful transplantation abroad. These include:

- The existence of many small and middle-sized enterprises with training opportunities well fitted to the demand for training in those enterprise areas.
- An even distribution of these enter-

prises so that even rural areas have sufficient access to educational opportunities.

• A sufficient number of qualified masters/owners to guarantee high-quality training, according to prescribed standards.

• An infrastructure of controlling organizations such as chambers, unions and employer organizations to maintain and support the system.

• A network of part-time vocational schools to supplement and complete the on-the-job training.

The Role of Employees and Employers

The German system of youth education and training relies heavily on the policies and relationships among employees, employers and government. Government strategies for lowering unemployment and improving the quality of the work force developed in the 1980s, center on decreasing the number of people who have not completed a vocational training program and increasing the number of those completing an apprenticeship or technical school education and higher education. In support of this goal, the Institute for Employment provides job placement and vocational guidance. It gives youth and adults subsidies and loans for vocational training if they cannot provide the funds themselves. The agency also promotes vocational advancement by granting sustenance loans or covering costs during training. A strong safety net, in the form of unemployment insurance, exists for unemployed workers.

Employers and employees function as "social partners" or "contracting parties" in preparation for, entry to and the quality and conditions of the workplace. For example, their representatives serve on committees to determine the content of final examinations governing vocational trainees and on labor courts that rule on employment disputes. Over the years, there has developed a far-reaching agreement that industrial objectives must also take into account the interest of working people and that industrial decisions affecting workers must provide for collaborative decision making, or worker co-determination. Work councils are integral to worker co-determination, especially in social welfare and personnel matters. It is felt that the scope of active participation raises the work motivation of employees and supports industry's efficiency.

Employees and employers have formal structures through which they provide representation and actively participate in the education, training, employment and retraining continuum. About 42 percent of all workers in the former FRG are members of unions. Employers' associations are organized by region and industry; about 90 percent of employers belong to these associations.

All businesses in Germany are members of either the Chamber of Trade and Craft or the Chamber of Industry and Commerce. Chambers represent both employers and employees and are funded largely by the member companies. They advise the state on apprenticeship and vocational education standards, supervise apprenticeship training and operate vocational training centers on behalf of the state in areas where state vocational schools do not exist (Nothdruft, 1989).

Local chambers regulate entry to trades, qualification for practicing a trade and vocational training within a business. To train and employ apprentices, an individual must be a certified master (having passed a master tradesman examination) and be at least 24 years old. The master's examination covers theoretical and practical knowledge, the business or economics of a field and the pedagogy required for providing instruction in the trade, craft or profession.

At the city or county level, tradespeople are grouped in guilds for their specific fields. The main responsibility of these guilds is vocational training and further qualification. Guilds also participate in developing collective agreements and setting up health insurance funds for members.

The terms of employer/labor agreements are as binding as law on the members of both sides, within the minimum requirements prescribed by law. Most collective agreements, however, exceed the minimum requirements. By law, the maximum number of work hours is 48; however, most Germans work a 37.5-hour week. Nearly all workers have a contractual paid vacation of five weeks or more, though the law demands only three weeks; and almost all receive additional holiday money or a bonus, or both.

Structure of the Education System

Germany is known for its strong systems of education and numerous routes toward higher education and employment. Education policy supporting academic, vocational and continuing education is clearly articulated in the Constitution of the FRG—The Basic Law:

To provide each individual with high-quality academic and vocational training commensurate with his/her abilities and interests and to continue to make opportunities for personal, occupational and political education available to him/her throughout his/her life.

This commitment to continuous learning is supported by social and employment policies that make education not just the responsibility of one sector, but a collaborative endeavor of many. Health, accident and unemployment insurance, as well as transportation assistance and the availability of free or low-cost education, support the learning continuum for German citizens.

The Basic Law assigns responsibility for general-education schools, the vocational schools and much of higher education to the Lander (i.e., the states). The federal government is responsible for vocational training that takes place in businesses and industry, for training assistance and for promotion of scientific research. Education costs are shared by the federal, state and local governments, with about 85 percent borne by state and local governments. Education expenditures represent about 4 percent of the gross national product and roughly 13 percent of all public budgets. In addition, trade and industry contribute heavily to vocational training.

After preschool, compulsory full-time schooling begins for children at the age of 6 and continues for 9 years (10 in some states). All children between the ages of 6 and 10 attend primary schools. These schools provide an elementary education stressing mathematics and language skills. During the fourth or sixth year of primary school, children and their parents must decide which type of secondary school the children should attend. At this juncture, choices exist among several types of schools leading to different certificates:

- The *Hauptschule*, culminating in a main school-leaving certificate.
- The *Realschule*, which provides access to upper secondary institutions that offer training for nonacademic occupations or to specialized technical institutions.
- The *Gymnasium*, resulting in the *Abitur* for entry to higher education.
- The *Gesamtschule*, an integrated or comprehensive school, combining all three forms of secondary schools and ending in the Intermediate School Certificate.
- The *Sonderschule*, where students with disabilities may acquire general school-leaving certificates commensurate with their abilities.

In recent years, emphasis has been on making secondary-level education "permeable," that is easier to access various types of education and transfer from one type of institution to another. As a result, students may enter higher education from technical secondary schools, from college preparatory schools or through the "second educational route" (e.g., evening *Realschulen*, evening *Gymnasium* and *Kollegs*). Also, about one third of students with an *Abitur*, qualifying them for entrance to the university or equivalent institution, elect to enter a vocational training program. For youth who have successfully prepared for and entered trades, crafts and professions through the dual system of vocational preparation, many paths still exist for later entry into universities, or *Fachhochschulen*. This can be done through attendance at full-time vocational schools or the second educational route.

All youth, until the age of 18, who do not continue to attend a full-time school must attend a part-time vocational school as part of their continuing education and employment preparation. About two-thirds of an age cohort participate in the "dual" system of vocational training. About one-fourth enter higher education and the remainder drop out or enter the unskilled labor force. For the latter, numerous efforts exist on the part of labor and government to bring this number to zero.

The system is termed "dual" because it is based on (1) training in industry in real working situations and (2) a parallel, closely coordinated program of school based instruction. Education and training is also the "dual" responsibility of private industry and public schools.

Vocational Training

Vocational training for youth takes a variety of forms. Principal vehicles for employment preparation are: (1) at work sites in businesses and industries *concurrent* with attendance at part-time vocational schools and interfirm training centers; and (2) at full-time vocational and health schools. The former characterizes the dual system.

Structure of the Dual System

The dual system is the predominant form of vocational training in Germany. Within this system, vocational training is available to all and is not contingent on receipt of any particular school-leaving certificate. About 20 percent of all businesses or firms nationally participate as training partners for about 1.6 million apprentices.[1] In-firm training is further supported by 600 extra-firm training centers that serve about 75,000 apprentices and 1,500 part-time vocational schools that all trainees attend. Training paths are flexible and provide several configurations of in-school, work-based, and "other" education and training combinations to address the needs of different people and careers, as well as the fluctuations of expanding or contracting job markets.

The in-firm or in-plant portion of vocational training is regulated by federal laws (to ensure that minimum requirements for the standard of training are met). The extra-firm or inter-firm portion is supported by the federal government and the state government and is operated by the chambers and guilds. The in-school portion is regulated and supported by the states (educational statutes of the Lander regulate academic instruction) and municipalities, with input from local and state

[1] This figures apply only to the FRG. Participation of firms in the dual system by size (number of employees) is as follows: 14 percent of firms with more than 500 employees; 22 percent of firms with 50 to 500 employees; 25 percent of firms with 10 to 49 employees; 39 percent of firms with fewer than 10 employees.

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committees comprised of representatives of employers, employees and educators. The Federal Institute for Vocational Training, through research and recommendations, works to improve the quality of training available in firms and to restructure and upgrade training in specific trades to make them more attractive to youth and more suited to the country's economic needs.

A representative of the Federal Institute for Vocational Training stated:

The Institute does research and can only recommend which types of occupations will be needed in the future and areas in need of increased or decreased training focus. This is often problematic because companies often see labor needs in the short term (e.g., now there is a need for mechanical fitters but companies continue to train an overabundance of bakers). Still, one vocational training is better than no training at all. Workers in need of recycling to new occupations are given preference due to the general value attached to prior success in training and in the workplace.

The strength of the dual system lies in the reinforcing support and consensus among the social partners—the federal government, state government, employers and unions—in determining what training is offered, its quality, the resources that support training, and the official recognition and status accorded the training.

Students in the dual system typically spend three to four days a week in a workplace as trainees or apprentices receiving practical training and learning by doing under the guidance of a master or an approved instructor. They spend one or two days at a vocational school taking theoretical courses supportive of the work experience, in addition to general education courses (e.g., German, foreign languages, math, and social studies). The vocational school time may be taken in extended blocks of time, depending on how the school curriculum is designed and how it is coordinated with the training firm. About half of all trainees receive training in small businesses and firms of less than 50 employees. Hence, supplemental knowledge and skills are offered at inter-plant training centers to ensure that trainees in these smaller firms are given a broad, common range of experiences related to the area of preparation. (See section on extra-firm vocational training.)

The goal of the dual system is to achieve parallelism between work-based and school-based programs. The role of school-based training is clearly to support the work-based training, in addition to continuing general education for the trainee. The degree of parallelism in the dual programs, however, highly depends on the level of coordination that can be achieved between the school and the workplace and the ability or lack of ability to group students of similar workplace experiences.

Financing the Dual System

The dual system is financed by a combination of public and private funding streams as follows:

- Direct costs borne by businesses to maintain student apprentices and provide in-plant instruction.
- Group contributions from businesses, guilds and trade organizations to support interplant training institutions and to businesses to defray costs for general in-plant instruction.
- The in-school portion of training supported by the Lander.
- General costs for information on and promotion of vocational training to individuals (especially hard-to-place youth) and for institutions paid for by the federal government (e.g., interplant centers).

In-plant costs include training wages, social benefits, teaching materials, work clothes and training personnel. In recent years, in-firm training costs have increased to provide more and better instructors, allow for longer periods of training, improve apprentice wages and support supplementary training (e.g., in interplant centers).

All firms in collective-agreement areas (e.g., the building trades, horticulture and landscape gardening, stone masonry and roofing), regardless of whether they run training programs, must pay a levy to support interfirm training. Moreover, a percentage of taxable wages and salaries of all firms is paid into a special fund by collective-agreement firms to defray general vocational instruction costs.

These arrangements reflect the evolution of apprenticeship as follows:

- From its historic origins in the crafts.
- Through its industrial transformation, which created the need to provide skilled workers with more broadly based trade qualifications.
- In response to the needs of newly created industrial sectors and vocational areas requiring qualification requirements and regularized training.
- In the initiative of unions to standardize and upgrade in-plant conditions for workers and trainees.
- Through the advent of vocational schools and compulsory school attendance.

The pivotal role of training within the business sector is key to understanding the fundamental organization of programs of study, their focus and content, and the collaboration among the various sectors in preparing youth for roles in the workplace. Within the work-based, or employer side of the dual system, young people learn tasks under real working conditions with current equipment and materials, model skills and attitudes toward work with and under the supervision of adults, and develop the social and group skills for success in the culture of the German workplace. Because business and industry function as the core of the system, rapid changes in technology affecting business and industry are immediately reflected in the curriculum and equipment available to youth in training. Finally, through the in-school component of the dual system, youth are not forced to abandon their general academic studies or opportunities to be with other young people.

Participation in training activities is purely voluntary on the part of business and requires a commitment to financial, technical and personnel specifications. Whereas some companies do not participate, other companies routinely train more apprentices than they need.

Apprenticeship Training

Most young people who have graduated from either a *Hauptschule* or a *Realschule* (many with an *Abitur*) complete a vocational training program in the dual system through a formal apprenticeship process, as follows:

- Youth enter into apprenticeship contracts with firms and receive training at the work site[2].
- They attend a part-time vocational school and receive up to 12 hours of specialized vocational education and general-education courses per w[illegible][3]
- They receive a "living allow[illegible]"[3]
- Youth pass a state-recognized examination in qualification as a skilled worker or white-collar worker in the craft, trade or profession.

A representative of the Federal Institute for Vocational Training indicated that the Institute would like to do away with some of the limitations of the dual system and move to more long-term, continued education and training. The institute would like to encourage more youth in the dual system to continue studies toward a high school degree and ultimately seek entrance into the university system. Also, people with appropriate work experience should be allowed easier access to enter the university.

[2] The contract for vocational training is between the training firm and the youth (or their legal representative). The training contract can be terminated during the probationary period regardless of period of notice, and thereafter only on important grounds or if the trainee gives up his or her training or wishes to train for another trade.

[3] Technically, this is not a "wage" because the apprentice is governed by an apprenticeship contract, not a working contract.

It is the responsibility of youth to find their apprenticeship placements. They are assisted in the choice of a career while still in intermediate school through courses (e.g., "Introduction to Working Life") and visits to local job centers. These centers set up visits to vocational schools; provide information on professions, training paths and companies offering training programs in specific trade fields; and offer guidance in choosing a career. Information is also available through the Federal Institute of Labor and through career information centers available in the larger cities. Informal sources of information exist through families, friends and teachers. Still, the choice of training, as well as the actual locating of training places, can be problematic for youth because of variations in the availability of in-plant training places by locales and trades, the student's lack of confidence and unrealistic assessment of school preparation and expectations of the workplace, genuine competition for training slots at certain firms and in certain trades, and a lack of requisite skills (e.g., language proficiency) for acceptance in a company placement.

Once application is made to a training firm, trainees are selected according to the procedure of the firm, with varying emphasis on the type of school-leaving certificate obtained, level of achievement, score on aptitude tests, personal impression and personal contact (preference is given to children of employees at some firms).

The company decides the entrance requirements for an apprenticeship. Many of the big companies rely on tests. For the small companies, it's more a matter of the personal choice of the owner or manager. Many companies are lucky if they can attract apprentices.

The demand for training places varies according to the economies, demographics and prosperity of the region. At present, there is an excess of training slots so that many youth can shop around for good placements.

Apprenticeships are available for 380 recognized trades. Half are in industry or commerce; 35 percent are in craft trades; the remainder are in service professions, such as public and medical services and agriculture.

In the past, youth who had not readily obtained placements were forced to continue in some form of regular or vocational education, find a job or try for a training place the next year. The *Berufsvorbereitungsjahr* (BVJ)—the vocational preparation year (see discussion in the section on full-time vocational training)—functions as one option for hard-to-place youth (e.g., dropouts, those who have completed vocational training programs and foreigners who have not been able to find training places). Only about 8 percent of youth pursue this path. The BVJ is run outside the vocational training system by the Federal Institute of Labor, which also finances many other training courses for these young people. Despite these efforts, transition to the dual system remains a problem for many of these youth.

In addition, training places are available in interplant centers (only as long as there is no place available in a business or firm) in combination with part-time attendance at vocational schools. These programs conclude with the same examinations conducted by the chambers for regular apprenticeship programs. These efforts are supported by the Federal Ministry of Education and Science.

IN-PLANT TRAINING.

The comprehensive vocational training law of 1969 regulates out-of-school vocational training, including initial training, advanced training and retraining. The law provides a framework for training criteria and standards for certification in various occupations. Within this framework, businesses can tailor different strategies and content for training to fit the needs of the company.

Specific areas of federal regulation include:

- The *articles of apprenticeship* between the young person and the training firm (i.e., terms of contract, remuneration, certificate).
- *Rights and obligations* of trainee and employer.
- Questions regarding *suitability* of place *of training*, instructor and pattern of ational training, examination system a supervision of training.
- The *organization of training* (e.g., commitments on the part of chambers, vocational training committees).
- *Research* in the field of vocational training.

The articles of apprenticeship and obligations of training firms are detailed as follows. Each apprenticeship contract must contain:

- The work for which training is being given.
- The nature, terms, time and purpose of the vocational training.
- Training arrangements outside the training establishment.
- Length of daily training periods.
- Length of the probationary period.
- Level of remuneration or "living allowance."
- Length of holidays.
- Conditions under which the vocational training contract can be terminated.

Obligations of the training firm are to:

- Provide systematic basic and specialized training in an organized manner consistent with training objectives.[4]
- Provide free of charge the necessary training facilities, materials and tools.
- Provide release time for the trainee to attend vocational school.
- Not use the trainee in any work that is not compatible with the object of the training (e.g., unskilled or subsidiary work).
- Provide appropriate remuneration (usually specified in collective wage agreements).

Business owners must oversee the training and ensure that the conditions of the contract are met. The apprenticeship contract, however, does not obligate the firm to offer employment at the conclusion of the training. In return for the firm's obligations, the apprentice must make efforts toward successful training, complying with the requirements of the instruction. In most skilled trades, apprentices must complete a report book detailing instruction and work carried out in the training firm and subjects completed at the vocational school. The report represents a check sheet for both trainees and training firms on the progress of the training.

According to Nothdurft (1989), the business owner shoulders a significant burden in taking on an apprentice:

First, the salary, though small, will be much higher than the young employee is worth; it will be years before the apprentice's work brings in any appreciable income. Second, the owner, or one of his master technicians, will generate less income than he or she might otherwise because of the time devoted to training. Third, the owner bears the additional cost of providing special training materials for the apprentices. Fourth, in addition to paying his membership to both the chamber and his respective guild, he will be expected to pay the apprentice's tuition for guild-run special training courses. Finally, having made this investment, the owner runs the risk of having his apprentice lured away by a larger company when the apprentice becomes a journeyman.

[4] Companies can decide to train or not. If they choose to become a training firm, the curriculum and the trades for which training is offered are subject to co-determination by management and employee representatives. Companies are free to decide on the method of training (e.g., in-company instruction or special courses) and the content and therefore can alter training quickly to respond to technological change.

We visited an in plant training facility at Huls Troisdorf AG in Cologne. Huls Troisdorf (HT) is a plastics and chemical company that produces interior coverings (e.g., flooring, wall coverings, carpets, fibre for laminated glass and polyethylene finishes). It employs more than 4,000 people worldwide including plants in Illinois and Pennsylvania.

The plant in the Cologne area has 250 apprentices. These apprenticeships are highly competitive. HT gets five candidates for every hire. About half the apprentices are children of employees. Wages are between 700 and 1100 DM per month and increase from the first year through the third year of training. A three-month probation period is observed. Most apprentices have intermediate and high school certificates. Some have general school leaving certificates and will probably go into production lines.

The company provides basic training for its own needs and for other companies (especially small companies that cannot provide training), which pay for this service. Apprenticeships are offered in electrical areas, metal working, welding, chemical laboratory assistant and chemical technician. Training areas that support other company functions are toolmaking, food service, electronics, mechanical fitters and industrial mechanics. Training is also provided for regular employees. This includes management and technical courses, sales promotion and foreign languages. HT does not use the services of extra-firm training centers.

During the training period, students attend vocational school one day a week, take one-half day of practical instruction in the lab and spend the remaining time in workplace training. In this way, trainees receive theoretical knowledge, acquire the practical skills of the workplace and then go back to the classroom for further basic knowledge.

Some apprentices go on to further schooling. According to company officials, 20 to 30 percent of program completers go to the university to study as chemical engineers or to a technical college (this is atypical compared to other companies); some become master technicians through block release during the days for two years or in evening courses for a period of three years. Those who cannot be placed in the firm are put on a waiting list.

Training instructors (who are either skilled workers with university degrees or master craftsmen) provide both practical and theoretical instruction.

When asked why HT does not use apprentices in their U.S. plants, representatives indicated fear of losing trainees to other companies after the training period, given the investment.

The quality and uniformity of training content across many training establishments is ensured by the federal government under the Vocational Training Act and Crafts Codes and through a process of state recognition of skilled occupations. There are 380 state-recognized skilled occupations—each with its own description of related skills and performance criteria. Youth under age 18 may be trained only in recognized trained occupations and only on the basis of the training regulation.

The training regulation for each trained occupation contains:

- The name of the trainee occupation.
- The training period, which in theory must not be less than two nor greater than three and a half years (this period may be shortened if requirements are met, or lengthened at the request of the trainee, especially if the final examination is not passed).
- The job description (skills and proficiency required of the training).
- The outline of the training program.
- Examination requirements for intermediate and final examinations.

Other requirements relate to the status of equipment in the training firm; ratio of apprenticeships to specialist staff employed; and the suitability and professional training of instructors. If conditions are not met, firms and instructors may lose their authority to train.

Centralized or intra-firm training establishments have been developed for firms that cannot meet these requirements and to ensure a broader and more uniform level of training, especially for apprentices in small companies.

PART-TIME VOCATIONAL SCHOOLS.

The vocational schools focus on the theoretical basis of the applied knowledge of the trade or profession that students acquire at the work site. In addition to attending the school one or two days a week, it is possible for students to have block release training. Students in block release training are at the school for variable periods (e.g., six-week periods) at the agreement of their sending firms.

School curricula are developed by the Ministry of Cultural Affairs (comparable to state superintendents), with employers advising the process. Teachers are paid by the Land. The municipality pays for the vocational site, equipment and plant. Teachers and principals are civil servants and have tenure.

In a vocational school in Bonn, we inquired about the structure of the school and curriculum, how it was financed, how the academic and vocational information is intertwined, the composition of the student body, how students get to and from the school and their apprenticeship placements.

The school, open year round except for a six-week vacation period, enrolls more than 3,500 students (2,724 males and 844 females). Females are enrolled primarily in the food service areas. There are only three girls in mechanical engineering. Ten percent of students are of foreign descent. Two-thirds of the students have intermediate school-leaving certificates; 14 percent already have the high school certificate (*Abitur*). Twenty-nine percent of the females have the higher certificate, compared to 5 percent of the males. All, however, will receive the same certificate at the end of the two to three years at the vocational school—a Final Certificate for Vocational Training. This diploma gives students another qualification, in addition to the general school-leaving certificate, and entitles them to entry into a technical college. This certificate serves to upgrade the status of the trainees in the dual system.

At the school, focus is on hands-on experience, not didactic teaching. Numerous laboratories are available for practical training. Classroom and laboratories are usually within one general area. Each laboratory/classroom generally has two instructors—one for practical and one for theoretical instruction. The theoretical teacher, who is university trained, works for longer periods with the students than does the practical teacher. The class turns to the skills teacher and laboratory equipment to resolve the theoretical problems initiated in the classroom. This structure often makes for a costly operation, and funds are continuously being sought from the Lander to update equipment and labs.

The school has no athletic program, nor are special arrangements for transportation provided. Students depend on private transportation or regular municipal public transportation to get to school and to their apprenticeship placements.

An electronics class we visited was composed totally of boys ages 17-23. The lesson involved computer assisted simulation and problem solving. The teacher was an electrical engineer by training. He had completed a journeyman certificate and received additional training before turning to teaching. He did not possess a university degree. We were told by the principal that next year this class will have two teachers. The other teacher will be university trained and will focus on the theoretical aspects of electronics.

EXTRA-FIRM VOCATIONAL TRAINING CENTERS.

Generally, students attending an extra- or inter-firm vocational training center have a contract with a firm and come to the center for several weeks each year, in addition to attendance at a vocational school. The purpose of the extra-firm training is to balance certain deficits or ranges of experiences that trainees are exposed to in their respective training firms. For example, a joiner training in a small firm assembling plastic windows would need a broader experience in the field. Similarly, a mechanic with Mercedes or Volkswagen would need to know about other equipment, motors and machines. Chambers must ensure that there are extra-company training opportunities available for all trainees, even those in occupations with few apprentices, such as jewelers. Crafts not taught in centers are addressed by special efforts of their respective guilds. The centers also provide retraining of adults, provide initial training for foreign workers under special contract (e.g., political refugees who will eventually return home), and function as training places for disadvantaged individuals who have not found in-firm placements (see the section on the Vocational Preparation Year).

The Extra-company Training Center of the Chamber of Crafts that we visited in Cologne receives funds from state (for equipment that must constantly be updated to stay within the standards of employers), the federal government (for initial construction) and from the chamber (for faculty salaries). Additional funds come from fees charged participants for certain courses (e.g., adult retraining). These fees may be paid by the individuals seeking to upgrade skills, be provided by firms for their employees or come from unemployment benefits.

The Federal Institute for Vocational Training (BIBB) stipulates how many weeks youth should attend such training—usually four weeks a year. Various time frames, however, are worked out between the social partners and will differ according to the needs and structure of the trade or profession. For example, training for the construction trades involves 20 weeks for the first year, 16 in the second year, and 4 in the third year. Students on block study attend school from 8 a.m. to 4 p.m.—a time period that is longer than the regular school day and comparable to the work day.

In the first training year, students circulate through a series of six different crafts to get exposure to a range of fields. Because they come from different firms with different experiences, they are routinely given a wide range of experiences and assignments. At the conclusion of the third year of training, trainees receive a certificate of participation.

Counseling is also provided through advisors at the centers. The advisors are trained master craftsmen who counsel trainees and administrators on behalf of their industry. Their positions are supported by the federal government and the chambers.

EXAMINATIONS.

Trainees receive at least one interim examination. It is given for assessment purposes only—to provide information on the youth's progress and identify gaps and needs in the instruction. It is not used as a barrier to further study or to imply the need for repeating parts of the training.

The final examination (includes practical, theoretical, written and oral sections) determines whether the trainee has acquired the theoretical and practical knowledge set down in the training regulations and whether the basic education received in the vocational school supports the knowledge needed for the trade.

The length of time and the content of the examinations differ by trade. Students in technical programs such as electrical mechanics would be tested in mathematics, technical drawing, technology and social science. They might also be tested in project planning and the ability

to recognize, analyze and solve planning problems in a hands-on manner. For students in food preparation areas, the theoretical part of the test might include biochemical processes, mathematics and calculations of quantity. The practical aspects would involve making or creating a product. The trainee has up to three opportunities to pass the test that qualifies him or her as a journeyman (in the crafts), a skilled blue-collar worker, or a skilled white-collar worker. Over 90 percent of trainees pass the final examination in the Industry and Commerce sector, more than 85 percent in the Handicrafts sector.

Both interim and final examinations are organized and conducted by examination committees set up by the chambers. The committees are composed of people delegated by the employers, employees and at least one educator (vocational school teacher). There is regular exchange between teachers, training companies and members of the test commission.

Full-Time Vocational Training

The *Berufsfachschulen*, or full-time vocational schools, provide for yet another option for vocational training. They either function in a supplementary role to the dual system or offer training courses and final certificates not occurring within the dual system. (They were established primarily to provide training in business, nursing and administrative occupations, as well as in certain technical occupations.) They also provide for higher technical training (e.g., the Fachschulen), often building on training received within the dual system.

To address the need of employers for better prepared apprentices, two new forms of full-time vocational training have been introduced in recent years: (1) the Vocational Foundation Training Year (BGJ) and (2) the Vocational Preparation Year (BVJ).

THE VOCATIONAL FOUNDATION TRAINING YEAR, BERUFSGRUNDBILDUNGSJAH (BGJ).

The Vocational Foundation Training Year (BGJ), or year of basic training, represents an alternative to the first year of conventional trade training and a continued form of schooling. It was originally introduced to provide youth who were undecided about career choices with a broad introduction to the occupational skills related to several professions in preparation for transition into the dual system. Industry, however, tends to oppose this type of schooling; and the year of basic training has been instituted in only a few states.

The BGJ exists in both school and cooperative versions. In the school version, both theoretical and practical training take place in the vocational school in the first year. The second year is the transition to the dual system; however, students may not have the full time in the BGJ credited to their dual system training. "Many firms are of the opinion that vocational schools, particularly as far as practical training is concerned, are not in a position to offer what firms offer and, as a consequence, reject the BGJ" (Krekeler, 1986).

In contrast, the Cooperative Vocational Foundation Training Year provides for both school (two days per week) and in-plant training (three days per week).

THE VOCATIONAL PREPARATION YEAR, BERUFSVORBEREITUNGSJAHR (BVJ).

The Vocational Preparation Year (BVJ) is designed to supplement training courses run by the labor administration in special workshops that provide simulated training opportunities. The goal of the BVJ is preparatory—to shore up deficits in the experiences of young people and improve their opportunities for subsequent successful vocational training. The BVJ is not a part of the vocational training system, although it usually takes place in a vocational school. The first six months are devoted to overviews of various vocational areas, and the second six months devoted to concentration on a particular field through coursework or in a work setting. Instruction is also offered in basic reading, writing and math.

During periods of recession, when apprenticeship placements have not been readily available, some young people have elected to follow up their BVJ with a full course of school training (e.g., in a Vocational Foundation Training Year (BGJ) or in full-time vocational schools).

EFFORTS TO ADDRESS THE NEEDS OF DISADVANTAGED YOUTH, FEMALES AND YOUNG PEOPLE WITH DISABILITIES.

German policy is to offer multiple ways and opportunities for youth to reach a common standard. Special strategies for disadvantaged youth, who face the greatest difficulty in obtaining training placement and entry into the skilled professions, do not employ shortcuts of time or program. Rather, focus is on a comprehensive course of education leading to formal education and training certifications necessary for professional attainment. Though these special efforts usually lengthen the process, the programs serve to improve opportunities for these youth and make them more attractive to potential training firms. Other strategies include provision of intensive languages services, basic education, career counseling and social integration measures.

The same principle applies to youth with disabilities who receive, where possible, regular training in a recognized skilled trade. However, according to a representative from the Federal Institute for Vocational Training, "Youth with impaired learning capabilities are seldomly trained in-company because of the high performance needs of the workplace. There is little incentive for taking on hard-to-train individuals."

Children of "guest workers" (foreign employees) are often underrepresented in vocational schools and in apprenticeships. In 1985, foreign employees represented 3 percent of trade trainees and were concentrated in a small number of careers. Chief among these were hair dresser and automobile mechanic. This disparity is often attributed to the wishes of parents, who prefer that youth go to work as unskilled laborers rather than undertake apprenticeship training. Recent trends in the job market and the need for trainees in several occupational fields, however, have created a more favorable situation for improved placement of foreign youth within the training system.

Occupations are relatively sex stereotyped with about 50 percent of males and 72 percent of females concentrating in 15 occupations traditionally associated with their gender. As a result, special efforts have been made to increase the number of females in vocational training and in a wider range of occupations and to improve their placement rates within a wider variety of training firms. These efforts include improved information on trades and training for young females and their families, pilot training of girls in areas such as metal work and electrotechnology, special promotions on the part of firms to attract greater numbers of females and incentives to firms to place more females in training slots.

The International Association for Social Work Center for Vocational Training that we visited in Cologne provided a view of alternative training for disadvantaged youth. (Similar programs are run by religious organizations and chambers.) The Center is funded by the Federal Employment Agency (with special money targeted to the disadvantaged) and the local government.

According to the director of the center, many activities of the International Association of Social Work are in the areas of retraining of unemployed adults and training of disadvantaged youth. Typically this involves training and social support for children of guest workers with limited German proficiency, "slow learners" or "social cases" who have not completed the secondary school certificate. Other participants are youth who have not been successful in other programs and cannot find employment. A precondition for entrance is at least six months' attendance in a prevocational program or courses. Youth between the ages of 16 and 25 attend the center. The average age is between 19 and 20 years.

The center provides training in 10 professions—body fitter, car mechanic, welder, hair dresser, seamstress, plumber, turner, mechanic fitter, joiner and painter. It functions as an in-firm experience for which youth are paid as though in regular apprenticeships. Although much of the training is based on hands on production or services, student products or services cannot be sold or commercially marketed to compete with businesses. Training classes, however, provide products and services to nonprofit enterprises and carry out public service work.

Teachers conduct theoretical and language instruction one and one-half days per week; practical experience is provided on-site two and one half days per week; and students spend one day a week in a vocational school. There are on average 14 students to a class. About half require services from a social worker, and half require tutorial services. Teachers often test students and group them according to their needs and abilities. Teachers are credentialed and are paid the same rate as teachers in other training facilities.

Students attend the center for one year and then are placed with a firm for six weeks. If possible, they will remain in an apprenticeship with the firm; however, most do not stay. If so, they continue training at the center for what would be the full length of an apprenticeship contract. At the end of this period, trainees must pass the same exams as trainees in regular apprenticeships. It was the feeling of the staff that many pass these exams because they get the courses and support they need to succeed.

In addition to skills training, the center provides for small-group interaction with a social worker who helps them resolve many problems. Through work, they are given opportunities for success and for developing their self-worth. The role of the social worker is to eliminate obstacles to a successful work experience (e.g., family problems) and to teach them the necessary actions (e.g., promptness and social graces) necessary for the culture of work. The social workers also make referrals to psychotherapists when necessary.

OVERVIEW OF FINDINGS IN DENMARK

General Background

The land mass of Denmark (excluding Greenland and the Faroe Islands) is slightly smaller than New Hampshire and Vermont combined. The population is homogenous Gothic-Germanic with a small German-speaking minority in the south, a mixed Inuit-Danish population in Greenland, and a Nordic population with its own language in the Faroe Islands.

The country is divided into 14 counties and 272 municipalities. Two thirds of the GNP stem from services provided by the private and public sectors; and the balance is from manufacturing trades such as agriculture, industry and crafts. The tax burden is among the highest in the world, at approximately 51 percent. Social welfare represents a large proportion of the public-sector spending—43 percent, followed by education and research, 15 percent; infrastructure, 11 percent; health services, 11 percent; defense, 4 percent; culture, 3 percent; and police and judiciary, 2 percent.

The labor force is about 2.8 million people, or 80 percent of the adult population ages 16 to 66. The present unemployment rate is about 10 percent. Foreign workers account for an insignificant proportion of the labor force because of strict immigration laws and reduced labor demands.

Denmark is among the most prosperous countries in the world. Wages are high by European standards. There is an even distribution of income, and a national pension is paid to all citizens on their 67th birthday. Other worker benefits include paid vacations and holidays, guaranteed daily allowances for illness or pregnancy, accident and illness insurance coverage, unemployment and medical care. There has been a great influx of women into the work force in recent years; there are 84 women for every 100 men employed.

The labor force is generally well trained and highly skilled. Unemployment is highest among unskilled workers, but there are increasing shortages of skilled workers. Employment problems are compounded by the immobility of Danish workers, generous unemployment benefits and large numbers of working couples. Over 70 percent of workers—virtually all blue collar workers and government employees—belong to labor unions.

Structure and Governance of the Education System

Education is free at the primary, secondary and tertiary levels. Children of foreigners who reside in Denmark for more than six months are subject to the same regulations for compulsory education as are Danish children. In addition to regular education, they are offered three to five lessons a week outside of normal school hours in their native culture and language.

Responsibility for education is shared among the state, counties, municipalities and private individuals and institutions. Primary and lower secondary schools (Folkeskoler) are run by local authorities. Most upper secondary schools (Gymnasia) and HF courses (that prepare individuals to pass the Higher Preparatory Examination for entry to higher education) are the responsibility of the counties. The remainder is state controlled or privately run. The state subsidizes all county, municipal and private schools and covers the operating costs of state-recognized engineering colleges and colleges of education.

Over the years, government has increased its authority and funding of vocational training, and labor and management organizations have grown in strength and mutual importance in influence in this arena. As a result, the three sectors work closely together in matters of education and training.

The Directorate for Vocational Education and Training in the Ministry of Education is responsible for the general planning and oversight of vocational education. It issues regulations for objectives

and content of courses. The Council for Vocational Education advises the Minister and provides recommendations concerning new courses, rules governing student trainees and course appropriations. Trade and vocational education committees make proposals for new courses and modifications in existing courses. Committees are composed of representatives of management and labor organizations and teachers' organizations.

The local authorities have the power to issue curriculum regulations for the schools in their districts. The administration of various schools and courses of study is done in cooperation with advisors and governing bodies representative of industrial and professional organizations.

Primary and Lower Secondary Education (Folkeskole)

Following optional preschool education for 5- and 6-year-olds, children begin 9 years of compulsory, comprehensive primary and lower secondary education (7- to 16-year-olds) in Danish schools. A noncompulsory 10th year has also been added in recent years. Compulsory education is over when a student has received 9 years of instruction, or at the latest by July 31 of the year of the youth's 17th birthday. All who leave after the 7th year are entitled to a Leaving Certificate. It is possible to complete compulsory education by full-time enrollment in a youth or continuing school.

The general curriculum for the first seven years of schooling includes Danish language and literature, foreign languages, Christian studies, athletics, science and art. In the eigth and ninth grades, students get practical work experience for one week in a firm. These placements are organized locally by the community, often with parent input and support in identifying sites to visit and professionals to shadow. Counselors also introduce students individually and collectively to various possibilities in the occupations. By fall of the ninth year, technical and commercial schools and gymnasia send counselors to lower secondary schools to conduct meetings with students and parents. The Ministry also sponsors programs to introduce youth to technical programs for two weeks during the ninth year.

Students can make their choice of an upper secondary school and area of training by the end of the 9th year (age 16) or can postpone the decision for another year and continue in the 10th year of studies. Many Danes feel that this is not too young to make such a choice. Also, the choice is not forever. Opportunities exist through evening and day courses to take other technical courses or courses that qualify people for university entrance or other occupational areas.

In recent years, Danish education has virtually abandoned selective tracking of students according to ability and aptitude. (About 2 percent of students in compulsory education are in special education classes, and other 13 percent receive additional assistance to supplement regular classroom instruction.) Annual examinations have been eliminated, and pupils are encouraged to progress at their own pace. All pupils are automatically promoted from grade to grade. Current law forbids the giving of numerical grades in the first to seventh year classes, but schools must inform pupils and parents of students' progress.

Although schools must set out an educational plan to be approved by the municipal council, these guidelines are not binding; and teachers are free to choose methods most suitable for their classes. "The trend is away from authoritative, class-oriented teaching and toward more group and project work" (Kurian, 1988, p. 313). Under the uniquely Danish "class teacher system," the teacher has the responsibility for the academic and social growth of students and serves as a liaison between home and school.

The Folkeskole leaving examination was restructured in 1975 to feature the following principles:

- Leaving examinations may be taken in a single subject of the pupil's choice—there is no overall examination.
- There is only one examination level for all examination subjects.
- There is no passing mark.

There is variability in the timing of examinations based on the subject tested (e.g., at the end of the 9th vs. 10th year) and the number of times the exam can be taken. Nevertheless, all students on leaving school receive a certificate showing the subjects taken, the level, most recent grades and the examination results.

Upper Secondary Education

Upon completion of the Folkeskole, about 90 percent of students continue their education into some form of upper secondary education. About 30 percent enter a Gymnasium or take an HF course. The majority (60 percent) enter vocationally oriented courses in technical or commercial schools. The latter offer continuation branches into junior technical or commercial colleges where students train for midlevel management positions or gain qualifications for further training or education at the senior technical college level.

At the time of our visit to Denmark, the education system was in a state of reform. Measures had been instituted as of January 1, 1991, which reconfigured parts of the education system. It was unclear what the effects would be. Vocational training has experienced many changes in efforts to (1) redirect an increasing swell of students going into university education to the skilled professions that were experiencing shortages and (2) upgrade the personnel resources of industry.

GYMNASIA AND COURSES LEADING TO THE HIGHER PREPARATORY EXAMINATION (HF).

Students must pass written examinations in Danish and mathematics and oral examinations in English, German, physics and chemistry for entry into the Gymnasia. The Gymnasium is preparatory to university attendance, though it provides a self-contained education. In completing a Gymnasium course of study, students must sit for the Studentereksamen, a state-controlled oral and written examination. When they pass this examination, students are awarded leaving certificates indicating examination grades and grades for the year's work.

The HF can be taken by anyone over the age of 18. A pass on the HF entitles the person to attend most types of higher education. Two-year, full-time courses are offered at Gymnasia and teachers colleges and three-year evening courses are available to prepare people for this exam.

Large increases in the number of students seeking admittance to Gymnasia led to the development of a range of models of further and higher education courses. These models allow for flexible combinations of courses and opportunities for various levels of qualification, as well as multiple options for access to higher education (including the technical tracks). One of the most significant developments has been toward increasing the opportunities for recurrent education for adults.

Vocational Education and Training

The vocational training system includes apprenticeship training, basic vocational education (EFG) and courses leading to a basic technical or commercial examination. These are usually three- to four-year programs of study that provide students with the qualifications for a trade or further studies.

This system derives from a long tradition of training of apprentices by craft guilds dating back to the Middle Ages. The system has been augmented and altered over the years through the development of evening courses offered at commercial and technical schools run by trade and crafts associations in the 1800s, and legislation of the mid-1900s stipulating that the instruction of apprentices at commercial and technical schools must take place during the day. As a result, the schools

have taken over much of the theoretical and practical training for employment.

This evolution has resulted in different models of training that culminate with the same qualifications for a specific trade, yet that have somewhat different objectives. Each, however, provides for subsequent options for higher technical or commercial training and credentialing. These models include the traditional, more work focused apprenticeship approach and the newer, more classroom-oriented EFG programs of work and study conducted at commercial and technical schools. Both combine alternate periods of work-based and school-based study. The difference, however, is one of emphasis, not of components or occupational areas.

The third kind of vocational training is through technical and commercial diploma courses. Students must have completed basic vocational skills training in a training field to be eligible for these one- or two-year courses of study that combine on-the-job training and classwork. Courses prepare students with vocational qualifications for specialized skills within a trade (e.g. technical draftsmen, engineer assistants and laboratory workers) or for advanced technical training.

Students with an EFG education, completed apprenticeship training or a technical or commercial diploma course (from a junior technical or commercial college) or students who have completed an upper secondary school (12-year general education) may enroll in a senior technical or commercial college. Such courses of study prepare individuals for administrative and middle to upper management-level positions.

All employers are required to pay a payroll fee based on the number of employee working hours. This goes into an employers' fund (jointly administered by labor and employers) for partial reimbursement to companies for youth training wages and for the time when youth are in school-based training. This policy is designed to increase employer participation in youth training—all companies pay into the fund, but only those who have apprentices benefit. Student salaries are small initially (about 25 percent of adult starting wages) but can rise to 65 percent of adult starting wages in the final apprenticeship year.

Small companies tend to train more apprentices than they can use, because the companies can benefit from the lower wages given apprentices and the benefits from the employer fund provided for apprenticeship training. The larger companies do not participate as greatly in apprenticeship training as the smaller firms but tend to hire graduates of smaller firms. A representative of the Ministry of Education indicated that there are definite advantages to having apprentices train in small companies. These firms tend to be more flexible, and apprentices get responsibility for more aspects of production.

The following are aspects of the Danish vocational education system:

Apprenticeship

Apprenticeship provides a more directed approach to development of occupational skills in a chosen trade for youth with a definite vocational goal. Here an apprentice begins training directly with a firm in a contractual arrangement.[5] In this model, the apprentice receives less extensive instruction in general subjects and school instruction is concentrated on specific practical and theoretical problems of the trade or occupation. Small firms often prefer this model compared to industry which prefers the EFG model.

[5] Contracts between firms and trainees must include the parties to the agreement, the duration of the agreement period, working conditions and level of pay. The contract can be canceled within three months, after which time it is difficult to cancel. As of January 1, 1992, all trainee contracts must be filed with the Employment Office, which also provides trainees with counseling and information. Previously, the schools were responsible for helping students find a place.

We visited the Trade Board for Vocational Education in the Metal Industry to meet with senior officers from the Danish Industries Employers' Federation and the Federation of the Metal Workers.

The Metal Workers union was formed in 1888. At present, it has 140,000 members and represents 95 percent of the workers in the industry. The industry spans 70 occupations as diverse as mechanic, production worker and media technician.

The representatives discussed the basic components of the dual system and the keys to its continued success, as viewed from the perspective of labor:

1. Work experience in the industry which is concomitant with training in a school.

2. The joint responsibility of the social partners to set the standards nationwide and for each trade

3. The employer's legal responsibility through contractual arrangement to the trainee.

4. Horizontal and vertical mobility options that the education and training system must provide the individual to move from one profession to another (e.g., from mechanic to engineer to lecturer in Greek). This position has been negotiated with labor and represents the consensus of the members.

The policy of the Ministry of Education has been to downsize the number of professions. In the metal trades, downsizing has meant going from 65 to 22 professions and possibly fewer in the future. With fewer specialties, workers must learn to be good trades people in a greater number of areas within the industry. Good on-the-job training is essential; it is only in the reality of on-the-job training that you get to be a good tradesperson. The priority is now on how to learn and a move toward a broader educational base.

There has been a tradition of cooperation among the social partners. The unions have continued to have good relations with education even when there has been labor unrest and strikes. The unions led the change away from evening classes to day technical schools. Labor also has pushed for more than education for the job, but education for life. As a result, the union supported the basic education year as a period of youth experimentation and development.

The basis of cooperation with education and employers derives from national need, not politics. If employers and unions create new curricula, it is for new occupations, necessary for economic competitiveness. Technical education and training are viewed as part of the country's economic, not social policy. It is assumed that social policy concerns will be addressed in another domain. As it works, the welfare state is the carpet, or foundation, that allows the industrial state to pursue its goals unfettered

The National Education Committee, or Trade Boards, are composed of union and employer representatives. Each board sets standards for a number of trades. Their work is financed by the unions and employer associations. This process builds consensus, which is the basis of the cooperation. In sum, the goals of education and industry must be the same if students are to pass industry tests and standards and receive official recognition in a chosen trade or occupation.

EFG Education

Students in the EFG are exposed to a wider range of vocational options and general studies than are students in apprenticeships. The EFG was introduced in 1973 in response to the need for students to have better basic skills and broader occupational competencies and to prepare for higher education in the technical and commercial areas. Still, this innovation retains the work-based aspects of the older apprenticeship system.

The EFG begins with one year of basic instruction in school. Courses include general subjects, such as Danish, foreign languages, mathematics, social studies, business and computer science and courses related to a vocational field (e.g., iron and metal industries, construction, food industries, graphic industries, commerce and clerical trades). During this period, each student must choose a specific line of study and enter into a contractual agreement with a qualified training firm. The next two years consist of alternating school (usually three 10-week periods) and on-the-job training. School courses continue with general and specific occupational instruction, but the latter become more specialized in theory and practice. At the end of the sequence, students have experienced all related disciplines of a trade or profession, including theoretical and on-the-job aspects, while continuing to take basic education courses. Students receive a wage during the second and third year of training.

The youth's responsibility is to work, learn and earn within the arrangement of the contract. Schools routinely supply information to the firm on the student's progress and areas where the student needs work in both practical and theoretical areas. A student can transfer to another school if the student and the employer feel the school experiences are not rigorous enough. Employers can also work through their representatives on local school committees and school boards to change the quality of the education in the school.

Restructuring Efforts

The limitations of the traditional apprenticeship and EFG approaches have to do with the local availability of training resources for some trades and access to training firms. This poses little problem for youth in the commercial school stream, who can attend any of over 100 of these schools available in all parts of the country. For trades involving more expensive and specialized equipment, there often are problems of access to and availability of schools and training facilities. As a result, students may have apprenticeships in their home town, but be forced to attend a school elsewhere in the country and board at that school.

Among reforms instituted to improve the quality and integration of school- and work-based training is to merge the best of the old with the new system and to keep many options open for trainees. Reforms have included reducing the number of training trades to a manageable number of eight vocational streams encompassing 300 different trades; giving greater responsibility and accountability to the commercial and technical schools in the way they manage budgets and prioritize programs; providing incentives for local school improvement through a basic funding allotment to schools based on each full-time student (students may attend anywhere in the country with these funds); and tying the allotment to the costs associated with the occupational stream to ensure that more costly courses of study (e.g., photography and electronics) are provided.

When we spoke with practitioners about these changes and the move toward decentralization, one practitioner indicated that in the past the strength of the system had been its uniformity:

Students could go from one commercial college to another with very few problems. This was possible because much of the curriculum had been centralized. With decentralization there will be greater variety across schools and hence greater problems for students moving among these schools.

The Danes are also experimenting with a new model—an initial half-year of school training before beginning a two to four year alternating sequence of on-the-job and school-based training. The half-year includes an introduction to a range of vocations and general subjects focusing on the basic or content skills required for the trade. The content of these courses is determined by the local school advisory board, based on student needs and aspirations.

Under the old apprenticeship structure, in times of recession it was difficult for youth to establish contracts with firms. Under the reformed structure, the year of basic vocational education offers time to redirect students to different streams; and financial incentives are in place for firms to take on trainees. Further, if after one year of school-based training, the student has not established a contract in four months, the Ministry is responsible for establishing a training facility so that trainees can complete their education. This is called "practical compensatory education" (PKU), and it was instituted in January 1991. The following criteria must be met on the part of the trainee to receive simulated training with wages: the student must actively pursue all possible training positions, have the capacity to complete the training, be flexible with respect to the training trade and be geographically mobile. This is a costly recourse but is being undertaken as the option of last resort. Because employers are required to finance this scheme, it is hoped that they will do whatever is necessary to avoid this form of guaranteed training and will create places for apprentices in their firms.

Teacher Training

Teacher training is the responsibility of the State Institute for the Educational Training of Vocational Teachers, which is affiliated with the Directorate for Vocational Education and Training. Under restructuring, the aim is to develop a holistic view of practical and basic education. Educators will make efforts to better integrate the respective teaching groups and develop instructional materials supportive of this focus.

The typical teacher in a technical school or college is recruited from the trades with five years' practical experience in industry. In the past, teachers tended to have more practical experience than theoretical experience. In the past 20 years, however, the trend has been to recruit teachers who have been more broadly educated. This is because in the second-chance system characteristic of Denmark, more and more teachers have equal technical and practical training. All teachers, however, must take six months of pedagogical training provided by the Ministry.

Teachers are usually better paid than their counterparts in the trades. This is not true for all trades, however.

Examinations

Trade boards for each field nationwide determine the product and performance level for the final exam. Most tests are performance based, although some trades may have written and general tests.

The Ministry of Education determines the examination for the general education component at the end of technical or commercial college. Tests are administered and graded by the schools. Under the old EFG system, it was felt that students should not be tested in the general subject areas so as not to penalize the more practically oriented students. In the new system, instituted January 1, 1991, exams have been introduced in the technical streams.

Students are tested on completion of the course of apprenticeship of EFG study by the appropriate trade board and issued a certificate that provides for union membership, unemployment allowance or wages at regular worker scale. Training firms are responsible for student success on the examination. Students who do not pass the examination can remain at the training firm at full employee wages and must be retrained until they pass the examination. This is considered the trainees' guarantee in exchange for training and support at a substandard wage over the period of the contract.

About 90 percent of graduates find work in their trade within three months of graduation.

We visited Hillerod Technical College in Hillerod. The school's origins date back 125 years, but the present facility was built in 1969. Average enrollment is about 1,300 students; but given the rotating nature of students and courses, the school serves about three times that many students on an annual basis. There are about 200 teachers on staff.

Hillerod Technical College offers programs in metal work, building and construction, food service and processing and upper secondary technical education. Continuing education and retraining are offered for older workers who need skill upgrading. Although Hillerod offers several occupational streams, other technical colleges offer only one specialized stream.

About 80 percent of the students are from 16 to 18 years old; 10 percent are 19; and a few are older. Students will go back and forth between the school and the training firm for three to three and one half years in completing their vocational training.

It is the student's responsibility to obtain a contract with a training firm, but the school often helps in this matter. Between 600 and 700 of the students already have contracts with firms when they enter the school. Many students secure contracts once the school program begins. Some students (about 200) will never get contracts. Most of these students will drop out and be unskilled workers. There is a special school where dropouts can continue their training.[*] For the few who complete the Hillerod program but cannot get contracts, in-house training will be provided at the school. According to an instructor at the college, a study was conducted of students who got contracts and those who did not. The study found no significant differences in student background and capabilities.

The typical workweek during the basic vocational education is as follows:

- Two and one half days--20 hours in a workshop.
- One and one-half day devoted to basic studies (e.g., languages, mathematics and social studies).
- One day for activities of the student's choice (e.g., athletics, a special course in general studies or higher level skill instruction).

Staff indicated the difficulty of creating course options in line with individual student interests, but stated that efforts are made to accommodate special interests through special small courses at Hillerod or another institution.

Students attending the school come from as far away as 20 kilometers. There is no attendance boundary; students may be from any part of the country. As a result of the new law, schools compete for students nationwide; thus, maximum choice and opportunity are provided. Students who come from other parts of the country must pay their own transportation and lodging if similar offerings exist in their part of the country. Otherwise support is provided by the local council.

The Ministry supplies 90 percent the school's funding. These funds are student driven. Ten percent of the funds come from training courses paid for by companies for their employees. The staff indicated that there is a new focus at the school on improving the quality of the teaching staff. The local school board for Hillerod has hired a consulting firm to analyze staff needs and make recommendations for improvement.

We also visited Hillerod Technical Junior College and Hillerod Commercial College. The technical college offers a two-year technician program, which is a continuation of the basic vocational education year for students who elect this path. The program qualifies students for further study, not work. About 60 percent of the students graduating from the program attend the university for degrees in engineering. Forty percent pursue further training to become technicians.

The commercial college enrolls 1,700 day students and 6,000 evening students. It is the fifth largest commercial college in Denmark.

In the first phase of the program, students attend the year of basic education training. (Students in this phase of the program may be returning adults, some as old as 40 years of age.) Recently, about half the entering students come directly from the Gymnasium and tend to have strong basic skills. The remainder come from the lower secondary school and have weaker basic skills. The framework for the curriculum for the basic vocational year is prescribed by the Ministry, but the school has autonomy to determine the particulars of the curriculum. As a result, this school has invested in many computers and has developed more international focus in the curriculum (e.g., student and teacher exchanges are planned for Portugal). The curriculum also focuses on problem solving and interdisciplinary studies.

In the second phase, students attend alternating modules of work-based and school-based training of two to three weeks at a time. The school owns a shop supported by the government in the town. In this shop, students without apprenticeship placements can work 37 hours per week and get practical experience.

[*] The AMU Center provides training for unskilled workers. It is funded by industries, unions and the public. The program provides only practical instruction, no basic or theoretical instruction. Courses are usually of four week duration.

OVERVIEW OF FINDINGS IN SWEDEN

General Background

Sweden is a sparsely populated country of 8.5 million people. Just over half of the population is in the labor force. The country is highly dependent on foreign trade: exports amount to about one-third of the Gross Domestic Product (GDP)—a proportion comparable to the GDP of Britain or (the former) West Germany. Sweden is noted for high taxes which amounted in 1986 to 54 percent of GDP (compared to 39 percent in Britain, 38 percent in Germany and 29 percent in the United States).

Immigrants represent 1 million of Sweden's 8.5 million population. By law, aliens who have been resident for three years can vote and run for office in local and regional elections. Non-Nordic aliens are eligible for citizenship after five years of residence (Nordic aliens after two years). Immigrant children and adults are entitled to receive instruction in their native language and be taught Swedish as a foreign language.

About 85 percent of workers belong to trade unions or other employee organizations, and private ownership of business accounts for 85 percent. In addition to wages, employers pay social welfare contributions to support the national basic and supplementary pension systems; health insurance system; and, in the case of white-collar workers, private pension systems. Child care is the responsibility of the family, and rates are set locally. There is a children's allowance of about $125 per month to which all children and youth are entitled. Youth under the age of 18 can get social benefits only as part of a family.

The 1970s saw the growth of reforms in co-determination between employers and employees, designed to enhance the employees' influence over their working situation. Companies like Saab-Scania and Volvo have attracted international attention through efforts to improve the design of workplaces and job content so as to create a better working environment and increase opportunities for employees to influence their own work situation. Co-determination has also extended into employee influence in decision making on boards of directors of privately owned companies.

Swedes are currently struggling with the effort of combining full employment with healthy economic development. They are trying to reduce the inflation rate without resulting high levels of unemployment. They have taken aggressive actions to avoid long-term unemployment among workers.

We spoke with K. Bertil Karlsson, formerly director with the Gothenburg County Labor Market Board, who described the following rules of labor market policy:

1. Increase the supply of labor and facilitate mobility in the labor market.
2. Improve the ways in which the labor market functions, thus facilitating structural changes.
3. Uphold the policy of only granting unemployment benefits in exceptional cases to individuals who do not do something in return.
4. Intervene at an early stage—preferably before unemployment arises—with measures tailored to suit individual requirements.
5. Maintain cooperation among authorities, companies and trade unions.
6. Train during a downturn in the economy for the next upswing.
7. Do not forget the disabled, handicapped and young people who have dropped out or the immigrants' needs in the labor market.
8. Take a comprehensive approach to activities—do not be afraid to take new and unconventional measures.

These strategies reflect the strength of commitment to ensure full employment opportunities for all. This philosophy is evidenced in the characteristically low unemployment rate in Sweden (between 2 and 3 percent of the working population between 16 and 64 years of age) and the high numbers of women (85 percent—perhaps the highest in the world) in the work force.[7] This philosophy is reflected in the types and range of initiatives to ensure maximum levels of employment.

We were told of the "Projectile" program begun by the public employment offices in the counties of Gothenburg and Bohuslan. The goal of the project was to increase the numbers of young women choosing nontraditional careers. One effort involved training young women as managers of golf courses. Golf is a popular sport in Sweden, and many golf courses are under construction in the country. This industry was viewed as an area for developing a cadre of skilled personnel. As a result of the special training effort, young women trained for these positions were immensely attractive to employers and were all subsequently employed. Other successful efforts have been instituted in areas of advanced engineering education.

To keep youth from falling through the net of school and programs available to them, the public employment offices collaborate with social authorities to recapture many young people into the labor market. (The responsibility of the municipalities to these youth and the role of alternative schools such as Youth Centers is described in the section on options and alternatives). Basic training is also available for immigrants who have had little or no education in their home countries. Instruction in Swedish language and culture is provided, as well as basic skills necessary to get immigrants up to the ninth grade level and employable by Swedish standards.

[7] Many women hold part-time jobs. Women work on average 32 hours per week compared to an average of 41 hours for men. Despite reforms that allow more women to work outside the home, they still bear a large responsibility for home and child care responsibilities.

The National Labor Market Board is responsible for adult training. It is the arm of the government that funds the AMU—a system of adult training courses. According to a Board representative, the goal is to get unemployment down to less than 1 percent. This is done through education, training and the provision of temporary relief work in government-paid jobs for up to six months.

Other resources to improve worker preparation are found in the KUM VUX, the community-based, adult continuing education schools funded by municipalities. Many adults go to KUM VUX and can go through the three-year, upper secondary-level program in one and one-half years.

Structure of the Education System

Compulsory Education

The Swedish school system begins with the nine-year compulsory comprehensive school (ages 7 to 16). All children are also entitled to attend preschool before beginning the compulsory phase at age seven. Preschool education is not a part of the school system, but a part of public child-care programs.

The nine years of compulsory school are divided into three levels—junior, intermediate and senior—each of which comprises three school grades. Pupils take the same subjects in the junior and intermediate levels, including compulsory English language. Beginning at the junior level, students receive introduction into working life. They go on field trips to local places of employment and shadow parents at work. These efforts continue into intermediate and senior levels

At the senior level, students are given more options, including choice of a second foreign language and other subjects determined by the local education committees. These subjects must meet stipulations that they are suitable for both girls and boys and must not be associated with any traditional sexual bias.

In addition to regular-subject teachers, each level or working unit (composed of two or more classes from the same or different grades) has access to remedial teachers and public welfare specialists (e.g., psychologist, nurse and social welfare officer). This staff comprises a working team. Students needing assistance beyond what the remedial teacher provides can attend special day schools or be given an adjusted course of studies that differs from the regular curriculum.

During compulsory schooling, pupils must complete at least six and up to ten weeks of practical working life orientation. At the senior level, this takes the form of work experience at various workplaces.

The federal government provides a central framework for curricula of the nine-year, compulsory, comprehensive school (including goals, guidelines, number of periods per week and time frames); but individual schools determine the subject matter of the various subjects.

Upper Secondary School

Virtually all Swedish youth attend upper secondary school after compulsory schooling; however, only about 90 percent do so immediately after completion of compulsory education. Some enter employment directly but are given priority among subsequent year applicants to enter upper secondary school.

At the end of the ninth year of compulsory education, students receive a school-leaving certificate. On the basis of this certificate and courses taken, they are allowed their first, second or third choices for upper secondary education. Students then pursue a particular area of study and training in a given school. The actual school attended depends on the available local school slots and offerings, as well as students' willingness to attend school in another locality. Students may receive a housing or transportation stipend to receive education or training not offered locally.

Until recently, upper secondary school comprised about 30 lines or majors of two, three or four years of study. Also offered were about 100 specialized courses of varying length, which built on compulsory school or a completed line of upper secondary school. About 35 percent of students took three- and four-year theoretical lines; more than 50 percent entered vocational lines, mostly of two years' duration; and the remaining 15 percent completed two-year general theoretical lines. (Three years of upper secondary schooling is usually perceived as the foundation for higher education.)

Educators in upper secondary schools have made efforts to tailor courses of study to individual students' aptitudes and needs. Remedial instruction is offered to students who need this extra help, and working-life orientation is a formal part of theoretical and vocational lines.

Vocational teaching in upper secondary schools is provided by subject teachers with advanced education or technical qualifications or by vocational specialists. The vocational specialists have completed vocational training and studies of vocational theory, in addition to experience in the trades and education at teacher training schools.

We visited the Backe Gymnasium in Gothenburg. This is a comprehensive secondary school founded in 1970. It offers both preparation for the university and vocational training in the building trades, welding, transportation, economics, trading and office skills, and social work (e.g., for policemen). The school enrolls 1,200 students at three building sites. Among the students, 93 immigrant youth receive instruction in their home language two hours per week, and 123 get extra classes in Swedish.

The school receives a combination of federal and municipal funds for operation. In 1992, the school will receive only local support. The municipality will receive a federal block grant for all public services, including education.

According to a teacher in the building trades, students are responsible for applying to and getting accepted at training schools, but teachers and the school often assist them in finding employment. (There is no one in the school with this specific responsibility.) The teacher indicated that if there is a problem finding a job for a student who has finished the program, he will usually alert the unions and organizations of the trade and also negotiate with a work site for a slot at less than full wage. The tradition in the building trades is to take care of younger workers. The state employment agency also offers to help students in finding employment.

During the second year of the program, the school still has the primary responsibility for the young person, even though the student may be at a work site for the majority of the time. After the second year, this responsibility shifts to the union and the employer association.

During their second year, students in the building trades program attend school for one and one-half days a week and spend the remaining three and one-half days at the work site. The schedule differs for other trades. In some trades, students attend school full time with blocks of time spent at the job site.

Unlike the German apprenticeship arrangement, employers do not pay student trainees. While in school, students are entitled to a student allotment available for all youth. The union and the association of builders have a special arrangement whereby students work for an employer for three years after the two years of education and training at 45 percent of full wages. After this period, they get their full certification and full rights as workers in the trade.

The certificate allows for full worker wages. Without the certificate, an individual can only get 80 percent of wages. The certificate is based on the number of hours in school and on the job—not on passing an exam. Teachers may give tests and grades, but there is no state examination. This approach does not guarantee that a quality standard has been met.

The criteria for credentialing and level of remuneration differ by trade and are the result of special arrangements made with worker and employer organizations.

A typical curriculum in the building trades accounts for 38 hours per week. Students take required courses in Swedish, work safety, work organization of work and worker rights; and sports. The bulk of the program (27 to 30 hours) is spent in applied and theoretical aspects of the building trades (e.g., concrete reinforcement, woodwork, bricklaying, street building and explosives). For the remainder of the time, students select among electives in English, other foreign languages, religion, psychology, sociology, mathematics, painting or music and specific courses in the building trades (e.g., heating and plumbing, painting, iron metal work and floor making).

The second year of study may be taken at another school with a more specialized focus. Students may receive a housing or transportation stipend if these schools are not locally available.

Students in the industrial worker program tend to get a more theoretical curriculum, including subjects such as data manipulation, management and specialized equipment. Students with gymnasium degrees and work experience often enroll to get course work in the theoretical aspects of the trade or profession. They may take courses such as mechanical drawing, trade regulation and chemical and physical properties of materials, in addition to basic courses such as Swedish and foreign languages. Their companies may pay for them to attend the school to take certain courses.

The school's curricula are co determined by unions and employer associations. They provide initial input to the government at the national level, which in turn provides a framework of time and content requirements to the schools. School boards appointed by the local elected governments direct the civil servants who administer the school. At the local level, schools are free to implement the frameworks as they choose to address local needs.

The unions and organizations of employers work together closely and have been instrumental in expanding training resources nationwide, based on emerging labor needs. Investment in training is one way to keep unemployment at a minimum. Also, a broader education is seen as keeping options open for occupational mobility. An average worker may make four job changes in a lifetime.

Examinations

There are no examinations in compulsory or upper secondary school. Grades or "awards" are not used in the first seven grades of compulsory schools but are used in the eighth and ninth years. A compulsory school-leaving certificate qualifies the student to apply for upper secondary school. It is not based on the optional courses taken during the final years of compulsory school. For certain subjects, standardized tests are used to measure the achievement of a class or school against the country as a whole. Local education committees and schools use these tests for evaluation of schools.

Educational Reform

Swedish secondary education currently is undergoing a reorganization. Under reform of Swedish education, which is to be completed in the early 1990s, the number of lines and courses has been greatly reduced and simplified. All lines are now to be three years with a more uniform first year. Vocational lines are to be reduced to seven large blocks, which gradually diversify by the third year into about 100 different branches. Vocational lines will also have more general, theoretical subjects such as mathematics and foreign languages, in addition to vocational theory and practice (the latter to be completed during the third year in the workplace).

According to a representative from the Gothenburg Municipal Education Council, planning is underway with principals of schools, employers and unions to extend the usual two years of vocational training to three years. These changes have been spurred by the need to offer youth a broader education background and provide greater options and choices of careers, as well as mobility and flexibility for people to exercise a number of options during and after training.

In Gothenburg, which has experienced high unemployment, there is a special need to create new courses that offer both broad and specialized training. These courses, five weeks to one year in duration, will serve as an additional transitional period for youth en route to employment. Courses will be developed in technical fields of demand in the chemical industry, building trades, electronics and textiles. The federal government will finance these courses, to be offered at schools and in community sites.

Another new concept is Vocational Guidance Cafes. These cafes offer individual guidance within a casual setting and target the age group 24 and under.

The municipal education representative voiced further concern about the effect of higher levels of unemployment on opportunities for women in the work force, especially since few women enter nontraditional job areas. Finally, the representative indicated that a continuing concern is how to create equal opportunity for the children of the working class, because few go into higher education. There is need to develop a system to stimulate these youth to greater levels of attainment. The 11th year of schooling is being seen as one opportunity to provide for greater choice and options for these youth.

Options and Alternatives

Municipal authorities are responsible for ensuring that all youth between the ages of 16 and 18 who are neither attending upper secondary school or permanently employed receive further educational and vocational training. These activities are organized locally, but can be linked to upper secondary schools.

In Gothenburg, we visited the Hisingen Youth Center. Youth Centers were initiated after the Swedish Parliament decided that schools are to be responsible for youth and must ensure that all young people under 18 years of age have a place within the education system or a job. Youth Centers offer time and opportunity for youth (e.g., those who have dropped out after compulsory schooling, have not received their choice of program placement or do not want to pursue higher education) to experiment with different jobs, improve their basic skills and develop their individual goals and aspirations. The center helps position them to reenter the regular education stream and become more competitive for employment. The counselors at compulsory school or upper secondary school are responsible for following these students and tracking them into a center where necessary.

In Gothenburg, about 88 percent of young people ages 16 to 18 are in upper secondary school. The remaining 12 percent attend one of the three centers. On average, youth spend one year at the center, although they can stay for as long as two years. The center is open entry so that youth may enter any time during the year. In addition to special training, those with special needs receive other services, as appropriate. Center staff include vocational instructors and counselors, a nurse, social workers and teachers in basic subjects like math and history (these courses are not compulsory, are usually taught in small groups or to individuals and are provided one day per week).

The center develops an individualized plan of study in consultation with each student; provides guidance about job site procedures, behavior and information about the labor market; and arranges study visits to educational and employment institutions. Opportunities to experience real work situations are provided under supervised conditions. The center pays employers to provide "our weeks of "practice" at a work site. Also by special agreement with employers, youth may be employed as supervised assistants in a workplace for a six month period. During this time, they may participate in basic studies one day per week.

Students from the center may also take vocational courses at regular secondary schools. Entry into these secondary school programs is based on student interest, motivation and chance of completing courses—and not on previous grades, certificates or practical training experience. Participation in these courses entitles the youth to receive payment from the Youth Center because these youth are not entitled to study grants provided to students in regular courses of study. We were told that before the 1980s, all 16- to 18-year-olds received some form of general child allotment; but now they must work for this allotment through school attendance.

About one-third of the graduates attend upper secondary school, and one-third go into jobs. Of the remaining one-third, some will be unemployed and the rest may totally drop out of the labor market to go abroad, have children, become wards of the criminal justice system, and so forth. Graduates of the program do not receive a diploma but receive certificates for courses taken and papers of participation in various work experiences.

Other options for alternative learning exist in special high schools for adult learners and in residential colleges (Folk High Schools). The Youth Centers, together with the Vendelsberg Folk High School, a residential college situated about 20 km outside of Gothenburg, operate a one-year introduction program. After attending one of these programs, students may enter the regular second year of the residential college and eventually receive a high school certificate for courses taken.

SUMMARY AND CONCLUSIONS

In Germany, Denmark and Sweden, vocational training begins after 9 or 10 years of compulsory basic education. During the years of compulsory education, students receive an introduction to working life through formal or informal courses and experiences in the workplace. After compulsory education is completed, vocational training is usually one of several options of further education available to students. Information on technical schools and career preparation is routinely made available to students and parents by the government and schools to help students make informed choices about subsequent education and training. It is the responsibility of the youth, in consultation with the family, however, to make application to subsequent education and to seek out apprenticeship training placements.

In Germany, students who do not immediately pursue university education (about two-thirds of a cohort), enter the dual system. Students in the dual system typically spend three to four days a week in a workplace as trainees or apprentices receiving practical training for two to three years. They also spend one or two days at a vocational school taking theoretical courses supportive of the work experience, in addition to general education courses.

Apprentices sign a contract with a government-approved company that has met certain requirements relating to the status of equipment, ratio of apprentices to specialist staff and suitability and professional training of instructors. The training firms provide basic and specialized training, the necessary training facilities and materials, release time for the trainee to attend vocational school and a trainee allowance. In addition, the company must not use the trainee in any work that is not compatible with the object of the training. To misuse the trainee in any way means loss of recognition as a training firm by the government. The apprenticeship contract does not obligate the firm to offer employment to the trainee at the conclusion of the training.

In addition to the traditional apprenticeship model as used in Germany, Denmark has instituted another model, which begins with a year of school-based basic instruction and courses related to a vocational field. During this period, each student must choose a specific line of study and enter into a contractual agreement with a qualified training firm. The next two years consist of alternating school and on-the-job training. At the end of the sequence, students have experienced all related disciplines of a trade or profession, including theoretical and on-the-job aspects, while continuing to take basic education courses. Students receive a training wage during the second and third year of training.

All employers, through a payroll fee, support an employers' fund for partial reimbursement to companies for youth training wages and for the time when youth are in school-based training. This policy is designed to increase employer participation in youth training because all companies pay into the fund but only those who have apprentices benefit.

The Swedish system also provides a year of basic vocational training, after which students seek out training firms and receive work-based and school-based training. During the first year, students are entitled to a student allotment available for all youth while in school. In subsequent years, they receive trainee wages from employees. After the training is completed, trainees get full certification and full rights as workers in the trade, including employment at full wages. Without a certificate, an individual can only receive 80 percent of worker wages.

In each of the countries, some form of full-time vocational school training is offered, in addition to apprenticeship-type models for some career fields.

Regardless of the initial choice—education that leads to a university education or through the numerous paths of vocational training—opportunities exist for

centives for local school improvement are provided through a basic funding allotment to schools, based on each full-time student (students may attend schools anywhere in the country). The school allotment is also tied to the costs associated with particular occupational offerings to ensure that the more costly courses (e.g., photography and electronics) are provided at various locations. A similar arrangement exists in Sweden, where students receive transportation and accommodation allowances to attend schools away from their homes if they cannot find suitable programs nearby.

Academic and Occupational Education: School- and Work-Based

The study tour group was struck by the intertwined nature of academic and practical skill development, as well as by the often complicated pattern of movement of students between work-based and school-based training. Sometimes students move between work- and school-based instruction on a regular schedule, and sometimes they spend long blocks of time in one or another.

The Germans tend to rely heavily on training in businesses with supplementary academic and theoretical learning in schools throughout the years of the apprenticeship (some health and technical training areas, as well as administrative programs, tend to be largely school based rather than work based). The value of the classroom setting exists mainly in its capacity to provide the theoretical knowledge that informs and broadens the practical experience. School-based experiences also are necessary to provide certain basic and uniform practical experiences that cannot otherwise be assured through training in individual workplaces.

It is within the work-based or employer side of the dual system that youth learn tasks under real working conditions with current equipment and materials, model skills and attitudes toward work with and under the supervision of adults, and develop the social and group skills for success in the culture of the German workplace. Because business and industry function as the core of the system, rapid changes in technology affecting business and industry are immediately reflected in the curriculum and equipment available to youth in training. Finally, through the in-school component of the dual system, youth are not forced to abandon their general academic studies or opportunities to be with other young people.

The Danes and Swedes tend to extend the period of full-time, school-based vocational preparation—a time devoted to continuing academic subjects and exploring a range of vocational options—before initiating a pattern of part-time school and on-the-job training. In Denmark and Sweden, there is a great concern about broadening the academic background of students and their knowledge of a career. This focus is in response to the need to prepare youth for a continuously changing workplace, for career changes in later life and for a maximum of occupational and academic options.

In each country, students in school-based vocational training receive both basic and occupational education. Basic education includes required and optional courses as wide ranging as literature, foreign languages, mathematics and social sciences. Occupational education includes theoretical and practical aspects of a career or trade.

In Germany, both theoretical and applied learning are provided in work and school settings. Classrooms in both settings often contain the traditional trappings of classroom learning (books, desks and chalkboard) and of workplace learning (manuals, machines and production materials). Large companies with sufficient resources are able to provide work-site instruction that includes both theoretical concepts and practical knowledge. Provisions are made, however, for trainees at smaller companies to have broader occupational and theoretical instruction and a basis of common instruction and experience through special inter-plant facilities.

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In some cases, it was almost impossible to distinguish between theoretical and practical instruction in the classroom and the work site. In one classroom visited in Germany, there were two instructors—one university educated in charge of theoretical aspects of the course (metal work) and one master craftsman in charge of the practical aspects. The two worked in tandem or in sequence as the focus of the lesson shifted.

In all countries visited, there was a strong conviction that preparation for employment can only be gained in the context of employment itself. Hence, references are often made to "authentic" training in the context of workplaces versus "artificial" training within the context of schools and special workshops. The reality of the workplace—the response to crisis, to problem resolution, to interpersonal interaction, to the need to consult and adjust—is not reproducible within a classroom setting. Yet, so valued is the need to provide workplace type experiences that in the absence of the "authentic," the "artificial" or "practical compensatory education," as the Danes describe it, is offered.

As a result of this focus, the abilities valued in the workplace, particularly the ability to solve problems also are valued in school-based instruction. Vocational school instructors in several settings stressed the importance of opportunities to solve problems in the context of simulated work situations. These instructors also emphasized the development of other workplace skills, such as group planning and troubleshooting.

Another factor of interest is the breadth of skill development that accompanies mastery in a skilled trade or occupation. For example, the credential of the master tradesperson not only connotes high-level mastery of a trade or craft but knowledge of the pedagogy related to that trade or craft. Hence, the master craftsperson is an acknowledged teacher in his or her area, whether in the workplace or the school setting. With the advent of new technical occupations and more specialized schools of teacher education, this model is not as firmly fixed as in earlier times. Nevertheless, instructors have strong subject/occupational training based on years of past and continuing experience in the trade, in addition to newer teacher education credentials.

Assessment of Student Competencies for Employment

In Germany, the apprenticeship certificate is the credential of a fully accomplished adult in society. Students with university degrees often seek apprenticeship training as a way of acquiring up-to-date technical training not otherwise attainable and to ensure their grounding in practical experience. Moreover, completion of a training program qualifies students for education leading to higher education and training.

Trainees receive at least one interim examination during their apprenticeship. The interim examination is given for assessment purposes only—to provide information on the youth's progress and to identify gaps and needs in the instruction. It is not used as a barrier to further study or to imply the need for repeating parts of the training. The final examination (includes practical, theoretical, written and oral sections) determines whether the trainee has acquired the theoretical and practical knowledge set down in the training regulations and the knowledge needed for the trade. The trainee has up to three opportunities to pass the test, which qualifies the youth as a journeyman, a skilled blue-collar worker, or a skilled white-collar worker. Over 90 percent of trainees pass the final examination in the Industry and Commerce sector, and more than 85 percent in the Handicrafts sector.

Craft and occupational chambers organize the examinations. Both interim and final examinations are organized and conducted by examination committees set up by the chambers. The committees are composed of people delegated by the employers, employees and at least one educator.

In Denmark, trade boards for each field nationwide determine the product and performance level for the final examinations. Most tests are performance based, although some trades may have written and general tests (e.g., in mathematics). Students evidencing proficiency are then issued a certificate that provides for union membership, an unemployment allowance or wages at regular worker scale. Training firms are responsible for student success on the examination. Students who do not pass the examination can remain at the training firm at full employee wages and must be retrained until they pass the examination. In this manner, employers are accountable for the success of their trainees.

The Swedes do not put great emphasis on examinations. There are no examinations in compulsory or upper secondary school. Students who have completed the required schooling and on-the-job training for the trade receive a certificate. The certificate is based on the number of hours in school and on the job—not on passing an examination. The criteria for credentialing and level of remuneration differ by trade and are the result of special arrangements made with worker and employer organizations.

Expectations and Outcomes of Employment Preparation

Formal structures for providing youth with transitions from school to employment evident in Germany, Denmark and Sweden are almost fail safe in ensuring that young people reach adulthood with marketable skills and experience in the culture of the workplace. The interplay of school-based and work-based experiences continuously shores up basic and work readiness skills and gradually molds inexperienced youth into employees with a documented work record. This record is a nationally recognized, portable, competency-based credential. It is evidence of work readiness and commitment to a program of work and study—and is exchangable for continued employment with a training firm, for entry to another firm in the same trade or profession or for continued education, training or retraining for another field. It also recognizes the individual for full wage employment in the trade or profession of preparation.

The respective systems of youth vocational training virtually guarantee that no youth is lacking supervised work experiences with basic and theoretical skills supportive of and in addition to that experience. The systems also guarantee support in the form of an apprentice wage, or student allowance, while the student prepares for a career. This support is in addition to the broad social and health services support provided by the larger society.

The systems maximize student knowledge of various careers and choice of careers through early career education and other opportunities for exploration. This is the intent of the new models of school- and work-based training with which the Danes are experimenting. These efforts are essential to ensure informed choices as youth identify and apply for apprenticeship placements and select initial career training. Opportunities for subsequent change of careers exist through many routes provided for retraining and continued education, with access to services and supports that make these changes realistic (e.g., employment counseling; wage maintenance while in retraining; and free, inexpensive or employer-supported education and training).

Addressing competing concerns of employer needs and wishes, the dictates of the economy for strategic and protected occupations and skills, and the needs and interests of the individual requires mechanisms for planning and resolving potential points of conflict. Having business, labor and government as partners at all levels of the education, training, employment and retraining continuum; instituting checks and balances in the form of contracts between trainee and training firms; and monitoring training by government and employer/employee organizations provides protections for the interests of all parties and maintains incentives for cooperation and partnership.

The result is that businesses are given an early stake and involvement in the preparation of the future work force. Employee organizations are allowed to assist in the development of their future members and to serve as a check against misuses of labor. Schools are provided continuous feedback on the quality and adequacy of their efforts and have greater impetus to alter curricula, in step with the changing needs and demands of the workplace.

Ensuring equity and fairness in education and employment outcomes for all students remains at issue. At numerous points of the study tour, there were glimpses of classes and workplaces with little or no gender or ethnic diversity. It was evident that these countries have not solved problems of gender and race stereotyping in jobs and training. They are, however, making good efforts in providing supports that ensure that disadvantaged and underrepresented youth have opportunities to participate in the full scope of education and training opportunities through provision of special supports (e.g., language courses, counseling, special schools and numerous opportunities for further preparation that loop back into mainstream education and training). Moreover, these countries provide strong, consistent programs of compulsory education that result in high levels of literacy for all students and well integrated programs of vocational and academic preparation. In these programs, virtually all students are able to take advantage of opportunities available for further education and training.

System Governance, Policies and Finance

In Germany, in-school education is the responsibility of the states; work-based education, though financed and implemented by participating firms, is overseen by the federal government. The strength of the dual system lies in the reinforcing support and consensus among the social partners—the federal government, state government, employers and unions—in determining what training is offered, its quality, the resources that support training and the official recognition and status accorded the training. The quality and uniformity of training content across many training establishments is ensured by the federal government and through a process of state recognition of skilled occupations.

The trade guilds or chambers administer the inter-firm vocational schools with financial support from state and federal sources. They also supervise the qualifications of training staff and training establishments, organize the examinations and function as training advisory to instructors and trainees. In addition, at the state and local levels, vocational training committees composed of equal numbers of employers, employee representatives and instructors from training schools have a voice in all important matters of vocational training.

In Denmark and Sweden, vocational training is a shared financial responsibility of federal, state, private businesses and collective business funds. In Denmark, the Directorate for Vocational Education and Training in the Ministry of Education is responsible for the general planning and oversight of vocational education. The Directorate issues regulations for objectives and content of courses. The Council for Vocational Education advises the Minister and provides recommendations concerning new courses, rules governing student trainees, and course appropriations. Trade and vocational education committees propose new courses and modifications in existing courses. Committees are composed of representatives of management and labor organizations and teacher organizations. The administration of various schools and courses of study is done in cooperation with advisory and governing bodies representative of industrial and professional organizations.

In Sweden, curricula are co-determined by unions and employer associations. They provide initial input to the government at the national level, which in turn provides a framework of time and content requirements to the schools. At the local level, schools are free to implement the frameworks as they choose, to address local needs.

TRANSFORMING EUROPEAN COMPONENTS FOR IMPROVED SYSTEMS OF EDUCATION AND TRAINING IN THE UNITED STATES

Despite variations in the models of school-to-work transition in Germany, Denmark and Sweden, several common themes are evident. These should be explored and expanded in devising transitions for youth in the United States:

- Business participates in the preparation of youth for adult roles by providing monitored work-based learning opportunities and by influencing curricula in the school.
- Labor supports the development of future employees through involvement in education, training and credentialing.
- Education provides a variety of full-time and part-time vocational and basic learning options that are coordinated with on-the-job options for learning.
- A coherent philosophy drives academic and vocational education and their interface.
- Uniform academic standards for all are set by the state.
- The federal government proposes framework regulations (with input from business and labor) which specify the standards and contexts of training programs for apprenticed occupations.
- Students earn while learning at school and the workplace.
- Special help is provided for the economically and educationally disadvantaged—those not connected to the mainstream—to meet the same standards required of all students.
- The responsibilities of various stakeholders are clear:
  - —Students are to locate training placements and perform well.
  - —Employers are to support students in preparation for employment.
  - —Labor is to keep industry healthy by cultivating and supporting the development of youth workers.
  - —Education is to keep up to date and responsive to individual and economic needs.

Chief among the impressions of the German, Danish and Swedish youth education and training systems is the high quality of primary and basic education that provides the foundation of later school and workplace learning. The lack of this element undercuts the development of a quality system of employment preparation by limiting (1) the level of theoretical knowledge on which practical applications are built and (2) the overall capacity to develop sizable numbers of literate and highly skilled individuals capable of continued education and lifelong learning. In addition, if employers are to become appropriate partners in the employment training of youth, their role must be not to remediate learning but to enrich and build on existing skills and knowledge.

Transforming American systems of education and training will require substantial improvements in general education so that all students can take advantage of many options, including higher education, school- and work-based learning or direct employment. A transformed system of youth education and training in the United States must have at its core the integration of academic and occupational skill development. There must be a clear interdependency between academic and occupational pursuits in the minds of students, parents and school and workplace staff. This relationship must be reinforced in a variety of ways to facilitate student success—whether the immediate goal is further education or employment—to ensure the development of a highly skilled, well-prepared work force. Lessons from abroad suggest the need for new techniques and supports to reach this goal, as follows.

Better information on careers and career preparation.

Improved information on careers and preparation for careers must be routinely provided to students throughout their primary and elementary school experience. Providing such information will require a refocus of our current counseling system from one that is concentrated at the secondary level to include earlier grades and a greater focus on career, not just college,

counseling. It will also require further involvements of business, industry and employee organizations to provide information and early introduction to careers and the world of work.

Clearer pathways to careers through appropriate school and work-based experiences and supports leading to credentialing in and access to high-wage, high-demand career fields and options for continued learning.

Notable in the European systems observed is the high status accorded non-college-associated trades, their related high pay levels, and the open-ended career paths that credentialing in a trade or profession provides (e.g., as master tradesperson; instructor; accredited, self-employed business owner; or high-tech specialist). Providing status to non-college-associated occupations will require development of rigorous curriculums at the school and work site and a commitment to preparing youth for high-demand, high-wage employment with career ladders leading to advancement and continued education. It will also require that programs culminate in a performance-based credential that is nationally recognized by other employers and employee organizations.

Trainee wages or living allowances in exchange for work and the commitment to learning skills essential for success in the workplace are important components of the European systems. These wages support students during their period of training and transition to full mastery and full wages in the profession and provide a source of sustaining motivation. Likewise, many American teenagers work. They do so to provide for their material needs and sometimes to support their family's needs. They also do so because academic pursuits often do not consume enough of their time or satisfy their need for activities that they view as having relevancy and immediacy for their lives. Many view the work experience as an entry to adult roles and the experiences that they will soon assume in a full-time role.

Unfortunately, these workplace experiences seldom complement in-school learning, provide supervision or are monitored to ensure rights and protections for the young person, support the development of general and occupation specific capacities useful in school or in other places of employment, or provide systematic experiences leading to a credential or evidence of a level of proficiency in the area of employment. Improved systems of education and training in the United States must consider how young people can receive appropriate remuneration for their contributions to the workplace in exchange for support and work-based educational experiences received on the job.

Above all, the manner of transition from school to employment must be clear to students and to their parents. They must know that given certain commitments, certain rewards and outcomes will follow. They must know also that youth preparation falls within a larger national policy for developing the work force and a central strategy of government for maintaining national productivity. Clarity of programs and results are needed to garner trust in improved systems of education and training for our nation's youth.

Improved methods for determining skills necessary for success in the workplace, assuring that curriculum and instruction are supportive of this knowledge base, assessing students' general knowledge and mastery of these skills, and rewarding student mastery.

Because European businesses and labor actively participate in training and credentialling for the workplace, they directly influence the numbers of young people receiving training in a trade or profession and systematically develop the personnel resource needs of a career area or industry. In contrast, the U.S. system of youth education and training is largely schoolbased and divorced from the realities and resources of the workplace, thus contributing to the frequent mismatch between the skills of young people and the needs of the workplace.

We need models of partnership with schools that provide for greater leadership roles for business, industry and labor in the education of our young people. We need new pedagogies grounded in theory, applications and methods for assessing young people's employment readiness and preparation for continued learning. These strategies will ensure our youth optimum success as adults and allow our institutions to be more responsive to and accountable for the next generation.

These changes will require sizable commitments from business to share in the education and development of youth. This commitment should include direct support for on-the-job training over an extended period of time (e.g., training wages and instructor time and wages), release time for school-based instruction, and considerable coordination with schools on curriculum issues and with credentialing bodies to ensure the ultimate success and recognition of the education and training experience.

In the European countries visited, employee organizations work in partnership with employers and schools to define and standardize training and performance standards to ensure the quality of the entry-level workforce in many careers and professions. In contrast, American apprenticeship programs, though largely centered in the unionized sector, are available primarily in the construction trades and generally are used to upgrade the skills of existing workers.

To benefit from their history of curriculum development for work-based learning and the maximum development and well being of the employee in the workplace environment, employee organizations must be integral to the development of improved systems of youth education and training. Their involvement is necessary to realize a continuum of learning experiences and employee development from entry-level to mastery and beyond, to provide mentors and instructors for youth in the workplace, and to ensure their safety and well being.

Most critical, however, is the need to develop mechanisms by which both employers and labor can come together to inform school curriculums, structure assessments and credentialing mechanisms, and develop work-based experiences for young people. Until these mechanisms exist, education and training for employment will lack the authenticity of the working world; and the essential link between school and employment will not be made.

Finally, our vision for youth education and training must be built on a firm belief that all youth can succeed. Our basic and occupational curriculums must embrace this principle and provide for continuous support and high expectations throughout the education and training continuum. Like the Europeans, we must provide ample opportunities for youth to succeed in a variety of settings—never, however, losing sight of the high standards to which we want all our young people to aspire and attain.

APPENDIX A

SOURCES

GERMANY

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APPENDIX B

TOUR ITINERARY

GERMANY

MONDAY, APRIL 29, 1991

Federal Ministry of Education and Science
Heinemannstrabe 2
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Dr. Ulrich Hase, Assistant Head of Department for Vocational Training

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Mr. von Badeleben

International Association for Social Work
Center for Vocational Training
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Mr. Guenter Freiberger, Head of Vocational Training
Mr. Peter Purwein, Work Director

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MAY 2, 1991

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Mr. Ole Nielsen, Auto Mechanic Teacher

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MAY 3, 1991

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