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AUTHOR Evans, Robert, Jr.
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ABSTRACT

This analysis originally prepared for the Japan Study Meeting, held November 1985, compares high school graduates in the United States and Japan who will not attend college, and includes directions of vocational training in both countries. Vocational training in the United States involves five areas: secondary schools, post-secondary schools, proprietary schools, formal apprenticeships, and employee training programs. Course areas divide into types of institutions, race, and sex. Females are represented most in office and health occupations. Males are over-represented in agriculture, technical trades, and industrial occupation training programs. Transition to the full-time labor force is discussed. Information on Japanese youth cites fewer public vocational opportunities and similar sex ratios in curriculum choices, but finds the employees to be the main source of vocational education rather than post-secondary training institutions, and mentions greater use of employment services to secure post-school employment. The report finds there is not a close relationship between types of training received and the occupation in which an individual is engaged. The report concludes with 19 tables of data and four pages of references. (CC)

# VOCATIONAL AND OCCUPATIONAL TRAINING OF NON-COLLEGE BOUND YOUTH





Robert Evans Jr.
Brandeis University
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EXECUTIVE SUMMARY

Currently approximately 3 out of every 4 children who were in the 5th grade sev n years ago will graduate from high school. Among those who graduate some 45 to 55% of them will be enrolled in college in the fall following their graduation. Thus about five out of every eight young persons will be at work, in the military, out of the labor force, or enrolled in various postsecondary vocational and occupational training programs.

Vocational Training in the United States goes forward in five different areas. These are secondary schools, post secondary schools, proprietary schools, formal apprenticeships, and employer training programs. In 1981 post secondary non-college education enrolled approximately 13% of the adult population 17 years of age and older.

Vocational course areas divide somewhat by type of institution and by race, and extensively by sex. The most ubiquitous program area by type of school is "office occupations," primarily an area with female students.

Health occupations is a second area with a predominantly female student body. In turn, male students are over represented in agricultu.., technical, trade, and industrial occupation training programs.

A significant portion of vocational training is received by students while still in high school. Vocational and college preparatory students do not take a significantly different number of academic or vocational courses, a difference of about 3 Carnegie units. Apparently, however, there are other real differences in these students, for they have dramatically different rates of four year college attendance. Among those who graduated from an academic program in the fall of 1972, 52.1% were enrolled that fall in a four year college, but for the vocational graduates, the percentage

was only one-tenth as much, 5.4%.

Japan's situation exhibits many similarities, but some differences. Four-year college continuation rates are lower, dramactically so for women, but almost all 5th graders will eventually graduate from high school. Upon graduation from high school, public vocational opportunities are many times fewer, but those that exist exhibit sex ratios in curriculum choice which are like those in the United States. The major difference is that in Japan both employee and employer expect long tenure among younger workers. This has meant that the main source of occupational and vocational education has been the employer, rather than post-secondary public and private training institutions.

Once formal schooling is completed, young people begin their transition to full-time labor force activity. Each transition is unique, but overall there are standard patterns which do not seem to have changed substantially in the last 50 years. In 1937 Percy Davidson and Dewey Anderson referred to the transition years as a "floundering period" [1937:39]. These years continue to exhibit that characteristic. They are years of high levels of labor force participation especially for the small number of young people who are married. These years also are a period of high but declining unemployment rates and high levels of job and employer mobility.

The process of finding a job, indeed a whole series of jobs considering the level of job turnover, is largely an exchange of information between the prospective employee and employers. In the United States as well as Japan, these exchanges are heavily dependent upon friends, relatives, and interviews with prospective employers. The formal placement agencies, including schools, play a relatively small role in the United States except

in special circumstances. One of these is employment upon college graduation. In Japan almost all school leavers find their initial employment in association with placement activities in the schools. Post school job search is essentially similar to that in the United States. Thus initial employment upon graduation is one aspect of the labor economies of Japan and the United States where there is a major difference.

Vocational and Occupational Education has as its goal the preparation of individuals for a specific range of jobs. Yet, surprisingly, there is not a close relationship between the type of training received and the occupation in which an individual is engaged. One study reports that about two out of three American craftsmen have received some formal training in the area in which they were working, while an additional 40% of those who never held a craft job had received training in those areas. This high rate of training without subsequent employment is understandable if one views much of that training as similar to job turnover, a search by an individual for his or her correct place in the world of work.

Given the apparent loose tie between formal training and subsequent employment, it is not surprising to find that a great deal of vocational and occupational training does not appear to have a high benefit/cost ratio. A variety of factors may be involved here besides the possibility of ineffective training. In long-run equilibrium the benefits of the training should be bid away as more and more individuals enter the occupation in response to the benefit. The provision of training to many who do not subsequently use it limits our ability to obtain significant results, even if they exist for those who are both trained and employed in the areas for which they were trained. This last point appears to be an important

reason for the disappointing benefit cost ratios. A number of studies have found positive benefits of vocational and occupational training when they have considered only those who were both trained and employed in the area of training. This is especially true for employer based training programs, though it is possible that these good results may provide more information about an employer's success in choosing able individuals and less about the efficacy of the training process.

Similar results characterize occupational and vocational education in Japan, though the results are clouded because so much of it is accomplished within firms. There the efficacy of training and of employee selection are hopelessly intertwined.

I. Introduction:

Every May and June millions of parents proudly watch their sons and daughters graduate from high school. In 1983 America's public and private high schools produced 3,001,060 graduates who then began their transitions to full time employment. For some it was immediate. It is estimated that in the October following their graduation, 38.2% of those graduates were in the labor force. For others October was the beginning of many years of formal education. Their entry full time into the labor force might be postponed for 10 or more additional years. Most of the graduates from high school will be found between these extremes, employment or embarking upon what would eventually become graduate and post graduate education. For them the years of transition from high school graduation to a stable position within the labor force will have followed a variety of school work combinations.

Each transition is different. Some will be short, others long. Some difficult, some smooth. There may be a great deal of occupational, industrial, and geographical mobility, or an individual with his or her first job may have settled into what will be a life's work. Individuals who begin their transition to full time employment directly from high school may have a difficult time. The United States is not a country in which employers compete to hire those who have just graduated from high school. Table I, "Participation and Unemployment", clearly illustrates the general employment difficulties experienced by young people.

In 1982 individuals who had just graduated from high school experienced an unemployment rate of 17.9%, almost double the average rates of 9.9% for men and 9.4% for women which were recorded in that same year. For young people who were drop-outs from high school the prospects were

even slimmer. Those young people experienced an unemployment rate of 36%, more than four times the national average, (Statistical Abstract, 1984, 1983:159, 410). As can be seen in Table I, part of that difficulty is associated with age because younger high school drop outs have higher rates of unemployment than do older ones. Another part reflects the relationship between additional education and lesser unemployment because, for 16-24 year olds, the rate of unemployment falls as the level of education rises from high school to college.

Had these American high school graduates been Japanese graduates in Japan, they would have found a very different situation. In Japan, because of the strength of the concept of lifetime commitment in shaping the institutions of the labor market and employer and employee behavior, the employment of new school graduates is particularly important for companies. Among large firms, where long service opportunities are potentially available to most male employees, employers believe that being able to shape the new employee into the proper "Mitsui" or "Mitsubishi" worker is essential for future success. As a result, the requests for younger employees which are listed with the Employment Service exceeds the number of job seekers. In April of 1982 there were 109,000 jobs available for 43,000 applicants graduating from middle school and entering the labor force. Among senior high graduates there were 522,000 applicants and 957,000 jobs, almost 2 jobs for each applicant [Japan Statistical Yearbook, 1983, 1985: 84]. Perhaps in no other aspect of the labor market are the differences between the United States and Japan so dramatic as they are in the employment opportunities for younger workers.

The three million American high school graduates of 1982 represent

about three quarters of their age cohort: out of 1,000 students in the 5th grade in 1974 some 255 did not graduate with their class of 1982. With the exception of a few who died or who dropped out of junior high school, these 255 per 1,000 are high school drop-outs. Most will never complete their formal education though some will complete a GED. According to an earlier estimate by Beverly Duncan only about one-tenth of those who drop out will return (Sewell, 1976:136). In 1978 in conjunction with the Labor Department's YIEPP experiments it was estimated that 12.1% of youth who had dropped out would return to school that fall (CETA Youth Record p. 193). For these latter individuals, as the data in Table I make abundantly clear, the rate of non-participation in the labor force and the degree of unemployment greatly exceed those for high school graduates of the same age.

Two groups, those who only graduated from high school and to a lesser extent the drop-outs, together constitute from one half to three quarters of the American labor force, are in some ways neglected step children in terms of public concern and analytical interest. The dominant thrust of the extensive human capital literature in this country and abroad has been to understand the contributions of college education to a country's economic growth, to an individual's life time earnings, and to the distribution of earnings over the years of the individual's life. Thus, the principal interests of scholars, as well as parents, has centered on colleges and the college educated.

Here we shall be concerned primarily with those individuals for whom a high school education has been their terminal degree, and to a lesser extent those with slightly less or slightly more education, high school

drop-outs and those who obtain post high school but not collegiate educations. For these students we shall inquire into the kinds of specific occupational or vocational education which they receive and the role of that education and/or training in their labor market success. We shall look at the way they obtain jobs, the occupations which they hold, and whether the various types of occupational and vocational education have provided them with higher annual incomes, less unemployment, etc. than they might have expected if they had not obtained the specific training which they did.

II. PREPARATION FOR THE LABOR MARKET:

The student who does not plan to obtain a four year college degree prepares for the labor market in a variety of ways. High school itself is the principal way. In addition there are a number of specific occupational and vocational types of training which are obtained by these students.

A. The Extent of Vocational and Occupational Education in the United States

Vocational education goes forward in five major arenas. These are secondary schools, post secondary schools, propriatory schools (those owned and operated for profit), formal apprenticeships, and employer training programs. At the secondary school level most education is public, for private secondary educational institutions, including the largest, those of the Roman Catholic church, provide little vocational education. It has been estimated that 94% of public school students have access to wood or machine shop courses and 66% to auto mechanics, but at private secondary schools these percentages are about 10% [Coleman, 1982:78]. Post secondary schools include public vocational schools, the vocational portions of public and non-profit junior colleges, private business colleges, and propriatary schools. In some instances the latter are not strictly post-

secondary schools for many of their courses do not require a high school diploma.

For the United States, in 1981 non-college education involved about 13% of the adult population 17 years of age and older. This is shown in Table II, "Adult Education". Almost twice as many whites participated as did blacks, 13.8% to 7.5%. There was little difference in the participation rates for men and women. Job related reasons accounted for 60% of enrollment while personal or general education reasons accounted for the other 40% of the courses. Interestingly, the most highly educated members of the population had the highest rate of participation, a fact that was true for men and women, whites and blacks.

In Japan, most adult education is employer related, except for cultural and artistic education. In 1976 almost two thirds of all employers reported that they had employee training activities, especially for new employees [Umetani, 1980:90]. In large companies such training is both extensive and systematic [Koshiro, 1983:76].

Enrollment in public vocational educational programs in the U.S. has grown significantly over the post-war years. Enrollment was 4.2 million students in 1963 and had risen to 16.9 million students in 1981-82, including some 550,000 handicapped individuals. Another 1.5 million individuals were enrolled in non-collegiate post-secondary schools, approximately three quarters of which were proprietary schools. Formal apprenticeship program students registered through the Department of Labor (December, 1979) totalled 323,866. Of these, 135,786 were apprenticeships begun in 1979 while 43,454 apprenticeships were completed in that year. Cancellations during the year exceeded completions by about 15,000. The armed

forces also provide a great deal of training, though some training such as that for infantry, gun crew and seaman service has limited if any conversion value to a civilian economy. Other training courses, electrical and mechanical equipment repairs, etc., have at least the potential for use beyond the military. Community colleges as well, are providing an increased amount of vocational and occupational education. In 1981-82 almost two-thirds of the associate degrees were in these occupational curriculums. These also were the curricula with the most student growth. They increased by 107% in the decade 1972-82. In those same years the number of liberal arts degrees held almost constant. Lastly millions of employees were receiving corporate in-house training [Occupational 1984:92-96].

Within vocational education students find certain areas more attractive than others. In public secondary schools the largest group of students in occupationally specific programs are in office programs, 21%, closely followed by trade and industrial, and occupational and non-occupational home economics with 19% each, as shown in Table III "Enrollments in Vocational Education, 1980-81". Business programs, and trade and industry programs are also major ones in post secondary noncollegiate schools with 20% and 12% of the students. Yet in these schools, the number of students in these two curriculums together was only about equal in number to the largest program, cosmetology/barber which enrolled 34% of the students. Among apprentices, the majority, 55%, were in construction occupations. At junior colleges, business again is the largest program with some 39% of all associate degrees granted in this area. The second and third largest programs in the junior colleges were health and paramedical technologies with 22% of the students and mechanical and engineering technologies with

21% of the students. Approximately one-half of those students enrolled in the health area were in programs leading to R.N. degrees.

Table IV,"Enrollment in Occupationally Specific Instruction Programs, 1979-80" shows these major areas of study divided by race and sex. There it can be seen that among blacks and hispanics, there are more female than male students. This is especially true for blacks, with 54% of the students being female. For whites, however, there are slightly more male students than female. Among broad program categories there are strong divisions between men and women, but these divisions are similiar for blacks, hispanics, and whites. Agriculture, technical, and trade and industrial occupational programs are overwhelmingly filled by male students. Distribution, home economics office occupations, and health occupations have a majority of women as students. Approximately half of all women students are studying office occupations while half of the men are studying trade and industrial occupations. Thus, in program divisions, racial differences are much less marked than are those by sex. Agriculture, perhaps reflecting the distribution of land ownership, is much more of an area of study for white students than it is for other races. More than 10% of white males and 3% of females were majoring in agriculture. Proportionally only about one half as many blacks and hispanics were studying agriculture. White students also are much more highly represented among students engaged in technical studies.

Different levels of educational institutions in the world of formal training tend to emphasize different areas of study. This is especially true of programs in agriculture and home economics which are almost exclusively found in public secondary vocational programs. The most ubiquitous program

is office occupations. This is easily seen in Table IV, "Enrollment in Occupationally Specific Instructional Programs". Office occupations are a major training area in public secondary schools, noncollegiate post secondary schools and junior colleges. Health and technical programs also have strong representation in all three types of schools, though it is only for technical programs that junior colleges provide the major source of training. This can be seen in Table V., "Trained New Editions to the Labor Force 1980-1981". Technical curricula also enroll the largest number of students within the occupational areas that these schools offer.

Private proprietary schools play a somewhat similar role in Japan. In 1976, excluding cultural and driver education schools, there were 984,100 students enrolled in these for-profit schools. Home Economics, Medical, including nursing, and commerce and business were the largest, enrolling 64% of all students [Umetani, 1980:25]. Table VI., "Students in Special Training Schools: Japan" shows the enrollment in Special Schools. As in the United States the students in the health and home economics curricula are overwhelmingly female.

Earlier tables have dealt with vocational graduates, but all vocational education is not received by vocational graduates. Many college preparatory or general course high school students take some vocational courses. This is clearly evident in Table VII, "High School Credits by Graduation Status." All high school graduates take essentially 15.5 full year courses in 10th-12th grade. The distinguishing feature between those studying a college preparatory curriculum and those studying a vocational curriculum is that the former take about three more academic courses and the latter about three more vocational courses. The distribution of curriculum areas

in which courses were taken by the vocational students is roughly similar to the program majors reported for students in tables III-V. The overwhelming number of courses taken were in office occupations 41.5%, and in technical, trade, and industry. There are differences between the vocational subjects taken by the college preparatory and the vocational students, with the latter taking relatively more courses in the curriculum areas of office occupations and home economics, while taking relatively fewer courses in technology, trade, and industry.

B. Vocational Studies and College Attendance

Selection of a vocational curriculum does not automatically bind an individual to a non-college vocational future but it does change dramatically the odds in favor of such an outcome, as shown in Table VIII, Vocational Courses and Post Secondary Alternatives. The average vocational graduate (Table VIII) took 32.5% of his or her program in vocational courses, while an academic graduate took 13.8% of his or her courses in vocational areas. We can see (Table VIII) that for males with low proportions of vocational work in high school (less than 19.9%), college attendance rates ranged from 53.9% for whites to 26.5% for hispanics. Similarly white females with low levels of vocational preparation had a 47.2% college attendance rate while hispanic females had a 23.7% rate. For all three racial groups, increased vocational study in high school dramatically lowered the probability of college attendance and increased that of labor force activity. Yet the racial differences which were so strong among those with the most academic preparation appear essentially non-existent for those with more vocational preparation. Among males with 35% or more of their high school program in vocational subjects, 10.9% of whites,

11.7% of hispanics and 13.4% of blacks went on to college.

These patterns are consistent with results from an analysis of those who graduated from high school in 1972. In the fall of that year 52.1% of those who had graduated from an academic program were enrolled in a four year college and 80.9% were enrolled in college and all other educational programs. A mere 7.2% were employed full time, or 8-9% if military service were to be included as employment. For vocational graduates the results were markedly different. Only 5.4% were in four-year colleges and 28.6% were enrolled in college, junior college, post secondary schools, etc. Among the vocational graduates 32.6% were fully employed, in the fall of 1972, an additional 16.1% were in apprenticeships and 3.6% were in the military [Berryman, 1981:124]. While the proportions in employment and education are somewhat different in the class of 1972 and in more recent classes, there would appear to be little systematic change over time.

College attendance is affected by many variables. Hope Corman studied the demand for college and for post secondary occupational education among 18-22 year olds and 25-44 year olds using the 1975 Survey on Adult Education for 35 standard metropolitan areas [1983]. She determined that family or personal income was positively and significantly related to college attendance and negatively and significantly related to post secondary occupational attendance. Shakotko and Grossman had obtained a similar result for occupational education even after controlling for student ability and parents' educational level [Corman, 1983:262]. Tuition, marriage, and the proximity of college and occupational schools played their respective roles in individual decisions. Robert Meyer reported similar conclusions,

noting that junior college and post secondary vocational decisons appeared to be less dependent upon parental education and desires than was the decision to go to college [B. Meyer: 1984:64-65].

For Japan, Rohlen, in a study of Kobe area high schools, reported 6% university attendance for students from a commercial high school compared to 62% from a city academic high school and 72% from a prefectural academic high school [1983:44]. Umetani and Reubens for 1980 reported a somewhat higher college attendance rate than Rohlen for vocational graduates, 9.6%, and somewhat lower rates of college attendance for those who graduated from an academic curriculum, 42.2% and from a special preparatory curriculum, 63% [1983:189]. Student enrollment in these high schools was in part dependent upon the students' fathers' education. According to Bowman, in a 1966 sample, 77% of sons whose fathers had a college education were enrolled in an academic high school, whereas only 30% of those whose fathers had only a complusory education were in academic high schools. For commercial and technical schools the respective proportions enrolled were 19% and 45% [1981:76].

C. Summary

American vocational and occupational education goes forward in a variety of institutional settings. The three major areas are public high schools, public and private post secondary schools including junior colleges, and company training, both formal programs and informal on-the-job training. As such it seems to provide a comprehensive and readily available system of institutions. Training in various occupations occurs in different types of schools, though some specialization is evident. For example, secretarial training occurs in significant volume across all institutions

while other occupations are more centralized in their sources of preparation. While in high school a large number of students, including many who will go on to a post high school education, take some vocational courses, but a much smaller number take sufficient courses to be considered to have completed a specific vocational concentration. In addition, given the students' ages and the strength of occupational committment at that age, a good deal of training is acquired that will never be formally used.

Not surprisingly, the greater the degree of involvement with vocational courses in high school the lower the probability that a student will continue on to a four year college education. This suggests that the factors affecting that decision exert their influence relatively early in an individual's life. Parental views, income, ability, interest, etc. affect the student's decision, though the exact nature of those influences is not known.

There are differences between the United States and Japan. Japan lacks the concept of the comprehensive high school, so there is more of a division of student high school educational careers by type of school attended in Japan than in the U. S. Still, the same tracking of students into a four year academic preparation leading to college or into a high school program leading directly to employment is evident. For men, junior college attendance is not a common pattern, nor is the mixture of work and non-employer offered part-time school attendance so common in the United States typical in Japan. Yet many basic patterns are similar: prepartory schools for specialized skills and early division between students who will go on to college and those who won't.

## III. The Transition from Training to Employment

Marcia Freeman noted some years ago that the usual transition assumptions

for men and women in the early postwar years were clear. For young men the expectation was that they would graduate from high school and go to work full time, or join the military. A few years later in their 20's they would marry and settle down to raise and support their families. Young women, too, were expected to complete school and accept full time employment, but only until the birth of a first child. At that time they would withdraw from the active labor force. They might return to work following the entry of children into school, or later, but their work was not expected to provide the major financial support for a family. (Freeman, 1976:21). For individuals entering the labor force directly from high school, the period between that time of full time participation in the labor market and settling down to raise a family has been characterized by relatively frequent job changes. Often they obtained jobs suitable for long term employment and began to raise a family at the same time.

That these years should be ones of trial and error, of testing and learning, has seemed natural for at least half a century. In 1937 two authors characterized the first period following the completion of school as a "floundering period" [Davidson and Anderson, 1937:39], while more recently Professor Hollingshead wrote:

> ... The typical worker passes through a two phase cycle in his adjustment to the work world. The first normally lasts from a year to a year and a half after he leaves school. The average boy holds five jobs in this phase... Once experience and age requirements are met a youth enters the second phase of his work career. This phase is marked by better performance on the job, higher pay, and a steady job by local standards. (1975:277).

Despite many changes over the postwar years, a long transition period describes the expected idealized pattern for non-college young men. For young women there have been major changes, largely in the direction of

placing more emphasis upon their role as labor market participants and less as out-of-the-labor-force mothers.

A. Contemporary Patterns

Contemporary patterns of participation in the labor force, employment, and unemployment are presented in Tables I, and IX. There we can see the powerful influences of age,and education upon these aspects of the world of work and the differences in labor force participation and experiences between men and women and between whites and blacks. Marriage also plays a role. Married men and married black women participate more extensively in the labor force than do those who are single. At younger ages 16-24 the differences are marked, almost twice as high a labor force participation rate for white males 16-19 years of age who are married as for those who are single.

1) Labor Force Participation

The typical pattern for these years of transition is for the labor force participation rates of out of school youth to rise between the usual age of high school graduation (18-19) and ages in the mid 20's. The one exception is for white women, a fact which reflects the impact of marriage and child birth.

2) Unemployment

Unemployment has been in many ways a characteristic of a young person's life. In 1982 the average unemployment level for men was 9.9% but for 16-19 year olds the rate was almost 25% (24.4). By age 65 and older the unemployment rate was down to 3.7%. Similar patterns were recorded for women and for both blacks and whites, though the absolute level of black unemployment was approximately twice as high as it was for whites. Educational

levels also played an important role in determining the degree of unemployment. This can be seen in Table I where 20-24 year old male high school dropouts had a 27.1% unemployment rate but 16-24 year olds with 4 and more years of college had only an 8.4% unemployment rate.

3) Occupational Mobility

Workers in transition years of their lives revolve through a number of jobs and occupations. This can be seen for men aged 18-19 years who were employed in January 1980. Some 7 out of 10 (69.8%) had less than a year of job tenure as did about half (49.6%) of men ages 20-24. It is not until workers are in the age range 24-34 years of age that mature job stability in terms of American standards is achieved. Then some 75 to 80% of the individuals were in the same occupation from one year to the next. An occupational shift of about 10% per year still occurs at older ages and levels of experience when, at least for men, there were very stable ties to the labor force.

In Japan there is much less job mobility among young employees. In 1979 among workers 20-24 years of age only 7.0% of employees changed jobs within one year [Umetani and Reubens, 1983:214]. In 1982 all Japanese men recorded about one job change for each 10 individuals. Yet within Japan it is still the young who experience the most unemployment and who are most mobile [Shimada and Nishikawa, 1979:9]. In 1983 the unemployment rate was 4.5% for those 15 to 24 years of age while for the labor force as a whole it was 2.6%. The separation rate for workers 19 and younger was 17% compared to 4% for those 30-54 years of age [Yearbook, 1985:6,31]. Thus it seems clear that the nature of the labor market into which young graduates enter is different in magnitude in Japan than in the United

States and, more importantly, in concept. This is reflected, in part, in the amount of occupational and employer mobility.

In addition to revolving through various jobs, men and women during the transition years improve their occupational positions. Table X shows the occupational distribution for high school graduates who did not go on for additional education in the years 1980 and 1981. It indicates that there was some occupational upgrading. Immediately after graduation out of 100 male members of the class of 1980 11 held white collar jobs. A year later the number of white collar jobs had increased to 16 out of 100. Similarly there was a very small increase in the number of craft related jobs. Perhaps the most striking difference was between female high school graduates and female drop outs. The graduates one year after graduation had 52 jobs out of 100 in the white collar ranks compared to only 10.1 white collar jobs out of 100 for 1981 female dropouts. The largest difference was in clerical jobs in general where 37.2% of the graduates were employed but where only 7.0% of the drop outs were employed.

The pattern of clearly increased occupational ranks with additional labor force experience, at least for whites, was clearly shown in an analysis of the experience of a sample of 1600 men who were between 30 and 39 years of age when they were interviewed in the spring of 1968. For the white males, over an eight year period following their labor force entry, the prestige score of their occupations increased from an average of 29.3 points at entry to an average of 37.1 points. For blacks the entry position was lower, 24.8 points, and the extent of their increase was smaller, for the average score after 8 years was only 28.5 points. According to one author's analysis, about one third of the black-white differences

could be explained by differences in family background and another third by a combination of other known factors. The rest was unexplained. (Ornstein, 1976:138,168).

The distribution of occupations in which recent high school graduates were employed, Table X, may be compared with Table XI which shows similar data for Japanese high school graduates. There it will be seen that the patterns are roughly similar. The big differences are the much higher proportion of American high school graduates employed in services than in Japan, counter-balanced by fewer Americans than Japanese in sales.

B. The Process of Finding a Job

Viewed broadly, the graduating student's search for employment really began at an earlier age when fundamental decisions were made. Some concerned the high school program, academic, vocational, commercial, or general, which would be taken. In addition, there would be decisions concerning whether the student's occupational interests required post secondary schooling. This may be seen in the fact that the degree of vocational course work is related closely to the lower probability of attending a four year college. These decisions will have been influenced by inherent abilities and preferences of the individuals on the one hand and by wage and job market characteristics on the other. (Freeman, 1971:3.) In addition, expectations, risk, and family influence will have played a role. Indeed, family influence on future labor market activities of children is largely through influence upon the degree and kind of education received rather than directly upon labor market events. Of the high school class of 1981 a little over half of the graduates were enrolled in college in October of 1981, 54.7% of the men and 53.1% of the women. The vast proportion

of those in college were initially there on a full time basis (92.3%). The major racial and ethnic difference was that the proportion of blacks in college, 43%, was considerably below that of Hispanics, 52%, and whites, 54.6%. (Young, 1983:13). This was a typical pattern for recent years. One alternative source suggests higher rates of college attendance, 63% in 1981, again typical of rates since 1970 but considerably above the 41% rate in 1950 (Statistical Abstract, 1984, 158). National Longitudinal data suggest that 43% of all high school seniors in 1979 were enrolled in post secondary education a year later (Hahn and Lerman, 1983:22). These very different estimates of high school to college continuation rates only complicate our attempts to understand transition, for they suggest serious data or definitional problems.

C. Information in the Labor Market

The process of seeking and obtaining a job is largely an exercise in the exchange of information and as such needs to be viewed from the perspective of both prospective employees and employers. For an applicant the desired information consists of the existence of a job and related data which are useful in deciding whether to apply for a given job, and accept a particular job offer. For the employer the desired information is the existence of an applicant and information which are useful in deciding to offer a job to a specific individual. Decision-making information can be divided into two types: factual and subjective. Factual data include wages, occupations, age, formal certification, etc. Subjective information concerns such general matters as whether the firm is a good place to be employed and whether an individual would be a good employee. All such data are subject to a test, which is largely based on confidence

in the reliability of the sources. The elusive nature of subjective information means that reliability and confidence are of central importance.

The formulation given here suggests that the extent to which any given source of labor market information will be used will depend upon the relative importance of knowledge about the existence of jobs and about the factual and subjective factors concerning those jobs. Such information is obtained from a variety of sources: friends, relatives, current employees, newspapers, posters, school officials, and public and private employment agencies.

A relative or friend will have personal knowledge of the subjective job factors while, almost by definition, the employment office, whose source of data is the employer, is ill prepared to assess such facts. An experienced job counselor at an employment office or in a high school may have his own ideas about the relative merits of different employers, but there are various pressures which restrict the degree to which such information can be conveyed to the applicant. A similar situation affects the employer. A recommendation by a current employee or trusted third party implies a favorable assessment of subjective factors, especially in Japan. Even more important than the informal source's more complete knowledge of subjective factors is the ability of the receiver to assess the reliability of the information, (Evans,1976:165).

The importance to employers in some countries of having applicants call at the gate also is related to the reliability of the information, a "feel" for the state of the market, and the element of personal observation.

An extensive analytical and theoretical set of models have been devised to analyze job search, but these models do not yet seem to have a strong

relationship to the reality of the empirical world, especially for jobs which are not filled by sought after college graduates. As John Dunlop notes:

> While all kinds of ingenious models of job search, labor market signaling and training costs and benefits have emerged, I am not aware that any useful system of organizing new or available data or any viable programs have been developed from this source to deal with the pressing issues of youth unemployment, minority hiring, and upgrading the low productivity groups. (1977:279)

Table XII and XIII present data on the job seeking methods and their effectiveness for individuals in the transition years. Among those individuals who sought new jobs in 1976 while employed, younger workers used the different sources of job information in approximately similar proportions to those used by older workers, Table XII. Among those who found jobs in 1972, Table XII, there are not marked differences for young people, except that women 20-24 years of age seem to have made greater use of school, private employment agencies, and want ads than did other groups. This use of want ads and private employment agencies is consistent with the clerical nature of so much of women's employment, and mirrors findings of earlier studies (Lurie and Rayack, 1966:94). Those who were looking for work because they had left school (graduates plus drop-outs) searched in ways which were quite similar to the ways in which all those who had found a job in 1972 searched, and school leavers made greater use of school resources. Given the data on use of school resources by all who searched for a job, it would appear that it was only the college educated who used school resources to any great degree.

Table XIII contains information concerning the number of individuals who found their jobs in 1972 by using a particular source of information divided by the number who used the source to seek a job. It should be recognized that the concept of how one actually found a job is not a clear

one. If a friend saw a want ad, told an individual about the job, and the individual then called at the employer, one could have any one of three different sources could be given as the method used to find the job, though perhaps the most likely one to be given would be "called at the employer." The actual question in the survey was "Which one method in this list was most useful in getting your present job? (Jobseeking....1975, 54). The effectiveness results appear to be relatively consistent across groups. Direct calling at the employer appears to have been the most effective with about one half of those who used this approach finding it successful. Except for the "other" category the rest of the sourc of information were about one-half as effective as direct calling except for the public employment service which was the least useful. It provided jobs for only about 15 out of every 100 who used the service. Interestingly, school sources were more effective for those who used them than was the employment service, but not outstandingly so.

D. The Special Role of Schools

Among those Americans who looked and found work in 1972, 12.5% used their school as one source of information about jobs. Considering only those who indicated that their reason for seeking a job was that they had left school, the proportion rose to 38.2%. Some significant portion of those using their school as a source of information were college graduates for, as can be seen in Table XII, those with at least a college education used that source five times as often as did high school graduates.

In terms of effectiveness (Table XIII) school was most effective for those with 1-3 years of college, though there was not great variation. Except for applying directly to the employer, which was consistently the

most effective as well as the most widely used source of information, schools were generally as effective as friends and relatives and more effective than the public employment service. They were used to the same degree and were as effective as private employment agencies. School resources were least effective for those who were high schoo' graduates only though the difference was not great. Interestingly, schools were most effective for those with 1-3 years of college, many of whom were probably graduates of one of the technical, occupational, or vocational programs of the junior high schools or other post high school educational institutions.

The similarity in usage and results between schools and private employment agencies is hardly surprising, for the placement role of most school employment activities is similar to that of private agencies, especially for technical occupations. One difference, of course, is that school placement activities are free to both employers and students or graduates. A second and more important difference is that colleges typically see career planning, including efforts to help the student think through his or her goals and strengths and to learn how to search for employment, as the principal responsibility rather than only or primarily job placement.

One outgrowth of the belief that individuals could be taught search skills was the organization of so called job factories by the Labor Department. These were a combination of school, psychological group and work group whose goal was to teach individuals how to look for a job and to encourage them to search by paying them to do so. One analysis of a job factory reported that those young people who found work through the factory had on the average seven more interviews than did those young people who did not find jobs. Those who found work reported that they felt the main

factor in their success in job seeking had been that the factory had forced them to actively seek work on a full time basis. The analysis of later cohorts in the same factory reported less success. In a subsequent analysis of the Cambridge Job Factory, it was determined that the youth (high school graduates and drop outs who satisfied the CETA family income requirement) initially found jobs more quickly than did those youth in a control group. The jobs were slightly better and lasted somewhat longer than did control group jobs. As time went on the advantages for the Job Factory youth declined to equality with control group youth. It appears that all youth eventually find jobs. The factory appeared to accelerate that process by obtaining a more intense search process (Hahn, et al, 1981, x, xii).

The encouragement of job search for young people is quite important for there is evidence to suggest that many youth take the first available job. A study in Detroit over 20 years ago reported that between 88% and 95% of the youth graduating from high school and going directly into the labor market had taken the first job offered. [Singell,1966:21]. Many of these may have been continuations of jobs held during high school, for among those from the higher social and economic areas in Detroit, 65% went to work immediately upon graduation. A similar situation was reported in a study of Massachusetts high school graduates in 1972. Among cooperative education and work study students, 54% and 59% of the first jobs following high school graduation were carry over jobs [Herrnstadt, Horowitz, and Sum, 1979:XI].

Compared to Japan where schools and teachers play a very important role in job search and placement for those graduating from school, American schools play a minor role. In Japan the Employment Security Law provides

several Employment Security Office and School interaction patterns. For middle school graduates most of the work is done by the Employment Office. At the senior high school level there may be extensive cooperation between the Employment Service and the school's principal. Many high schools, especially if a number of graduates are entering the job market, will establish their own job placement center. The system appears to be very successful. In 1965 the school was the source of information that led to a job for 38.5% of those surveyed, though for job search after the graduation period schools played a much smaller role. (Evans, 1973:161). In 1980 the combination of public employment service and school programs claimed to have placed 75% of that year's new school graduates [Umetani and Reubens, 1983:193] and The Public Employment Office for 1984 reported a placement rate of 99.2% for male middle school graduates and a 99.5% rate for females. For high school graduates the rates were 99.2% and 99.1% [Yearbook, 1985:36]. These rates probably claim credit for some placements whose real informational patterns were quite different, though nominally they may have gone through the local Public Employment Office or the High School.

In 1984 in Japan the largest number of high school graduates were hired in establishments of 1,000 and more workers, 26.6% of the male graduates and 25.6% of the females (Yearbook, 1985:37). Those employed in the larger firms would enjoy a wage advantage over those in the smaller ones. In 1981, 18-19 year old male high school graduates earned 7% more in firms with 1,000 employees than in ones with 10-99. When semi-annual bonuses are included the differential widens to 9%. These differentials remain about constant until workers are in their early 30's when they begin to

widen (Evans, 1984:25). Comparable data are not available for the United States as size of firm differences has never been a primary concern to government officials and academics in the United States. Recent unpublished data from the Current Population Reports suggests that certain basic patterns, well known in Japan, are to be found in the United States as well [Hashimato and Raisian, 1985:727]. Yet when a variety human capital of variables, education, years of experience, etc., are held constant, there are significant differences in the pattern of differentials between the two countries (Evans, 1985:28).

E. Summary

The basic pattern of job finding in Japan and the United States is very similar. An exception is the pattern for those individuals who enter the labor market following graduation from high school. In the United States, because a much higher proportion of students have held a number of part time jobs, a number of students return full time to these employers. Others look for work in ways similar to non-graduating individuals, and largely without formal institutional assistance. In Japan because of the concept of life time commitment, this immediate post schooling job placement is very important, and both the Public Employment Office and the local high schools are extensively involved.

## IV. Jobs and Training

### A. The Connection between Jobs and Training

One thinks of individuals obtaining education for specific occupations in order to move into certain jobs. Or conversely one thinks of holders of particular jobs having had some specific prior education or training. Yet these situations are often not the case. As can be seen in Table

XIV, "Skill Acquisition by Craftsmen," only about two-thirds of white and three-quarters of black craftsmen had formal training. Conversely, some 40% of those who had not worked in a craft area had received formal training for one of those areas. The proportion of craftsmen who have been formally trained appears to be low but it is perhaps 15 percentage points higher than it was twenty years ago when the Bureau of Labor Statistics concluded that 51% of 22-34 year old craftsmen had been formally trained [Hills, 1982].

A similar pattern can be seen in Table XV, "Occupational Classification of Most Recent Job." Among men, 65% of those who participated in vocational training in trade and industry categories held jobs that utilized skills obtained in their training. At the same time 59% of graduates who had not studied in trade and industry programs had obtained jobs as craftsmen. For men, the field of agriculture demonstrated the strongest links between training and employment. Almost all men who were employed as farmers or farm managers had been concentrators in vocational education. For craftsmen, 32% of male vocational concentrators held jobs as craftsmen compared to only 14.8% of those who were non-vocational graduates. For women the link between vocational training and related employment appears to be much stronger. In distributive education, health occupations, and office occupations vocational involvement dramatically increased the probability of employment in those areas. The pattern for trade and industry training was similar to that for men. There was little increase in employment for women due to training in these skills.

Over time the source of training for skilled manual workers has changed. As the number of men and women in the military has declined its role as

a trainer has declined as well. More surprising, so too did the role of high school preparation, dropping from 29.5% for craftsmen in 1963 to 16.12% for whites and 22.1% for blacks in the late 1970's. Marked increases in utilization of apprenticeships were recorded, up to 19.6% for whites and 13.9% for blacks compared to an average of 11.7% for the two combined in 1963. Company training which accounted for only 7.5% of training in 1963 amounted to 18.5% for whites and 15.1% for blacks currently [Hills, 1982:209].

The apparent high rate of training which did not result in specific training-related employment may reflect a variety of factors. Some formal training, especially in high school, may have involved very few courses taken as an experiment rather than because of a mature decision that the student wished to work in that area (Table XVI) "High School Vocational Credits".

An alternative way of viewing jobs and training is to look at the distribution of occupations for a sample of 17-21 year old high school graduates divided by their degree of involvement with vocational education (Table XVII) "Vocational Preparation and Jobs". A comparison of the columns for concentrators and non-vocational students highlights the differences. For males one sees the emphasis we have already noted on preparation for craft type jobs and for females the importance of business training. For men, except for craftsmen, the other difference is that there are more service and professional and technical jobs for the non-vocational concentrators. For women there are greater differences in type of training and type of job: clerical service, professional and technical, sales and operatives.

In seeking post high school training related to specific occupations crafts occupations for men and clerical for women were the students' major goals, with 42% of the men in a craft area and 37% of the women in clerical. These were few racial differences. About a quarter of both men and women took training to prepare themselves for professional, technical, and kindred occupations and 25% of the women had goals in the service area. For these goals and training the major racial differences were that there were significantly fewer hispanics in the professional, technical and kindred category made up by relatively more of them in the service area [Crowley, 1983:137]. These emphases on technical and service occupations are quite consistent with the data on the distribution of student subject areas (Table V).

Another view of the need for training in particulr occupations and the alternative sources of that training comes from a recent study. Table XVIII "Sources of Skill Acquisition" shows what proportion of individuals in different occupations said they needed to have had specific training for their current positions, and where they obtained that training. Not surprisingly professional and technical jobs appeared to have required the most training and laborers and farmers the least. Schooling and informal company training were the principal sources for training. In Table XIX, "Skill Acquisition by Type of Schooling" shows for some selected occupations the proportions of individuals in narrowly defined occupations who utilized a particular type of schooling. The pattern is consistent with earlier tables and indicates the wide number of alternatives available for some jobs.B. Changing Patterns

The post war years have been witness to many changes in the provision of vocational and occupational education. In 1983 86% of those ages 25-29

had at least graduated from high school. This was a more than doubling of the high school graduation rate for 25-29 year olds in 1940 [Statistical, 1984:134].

Other changes include the decline in the number of students in private non-collegiate post secondary schools. Richard Freeman estimated that in 1969 there were 446,000 students in business colleges and 320,000 in barber and beauty colleges [Freeman; 1974:310]. Yet, according to the Statistical Abstract, in 1981 there were only 194,900 business school students and 144,600 in Cosmetology [1984:160]. These declines were made up in part by marked increases in junior college students. In 1970-71 there were 307,880 such students, about one half of whom were in occupational programs and the other half in general arts and science. By 1981-82 the number of students had grown to 560,694. Almost all of the growth took place in the vocational and occupational programs. The annual growth rate for arts and science students was less than 1% a year while occupational program students increased at various rates. Programmers grew by almost 5 times while "other" engineering - technical little more than doubled [Occupational, 1984:440].

Japan has experienced similar shifts. In 1955 42% of junior high school graduates left school to go to work and 55% of high school graduates sought employment. In 1981 99.6% of junior high graduates went on to high school. Despite this large increase in the number of high school graduates (a more than doubling) the proportion going directly to work declined to 41.1% in 1981 [Summary, 1982:37] and to 40.2% in 1983 [Yearbook, 1985:39]. In Japan Special Training Schools, the vast majority of which are privately owned, have grown dramatically in recent years. In 1976

there were 819 private schools, but 2,515 in 1983 and the numbers of students had increased from 131,000 to 512,000. While there are still a disproportionate number of women students in these special training schools, 60% in 1983, that is down considerably from 1976 when it was 79% [Japan, 1984:661]. This is in marked contrast to the United States where post high school private non-collegiate schools have declined in enrollment.

C. Summary

The Japanese labor market differs from that in the United States in a number of fundamental ways. The most important one is that there is an expectation in Japan that, once hired, the individual worker will stay for a long but definite period. Men are expected to stay until retirement, women until marriage or the birth of a first child. In the United States the expectation is one of mobility. Since workers in Japan are expected to remain with the employer for a long time, a very large share of specific occupational and vocational education is provided by the employer. What the employers expect the workers to bring is a high level of general education. Conversely, in the United States, because workers move between employers so easily, the skills a worker brings become an attribute of value and workers are encouraged to obtain many occupational and vocational skills on their own before employment. As a consequence, we see marked divisions in the timing of occupational education and in the allocation of responsibility for the provision of that education.

## IV. The Economic Gains from Vocational Education for Graduates

The economic gains from education in general, a question which initially was thought to have a relatively straightforward answer, is now recognized to raise very complex issues for evaluation. Similarly there are complex

issues associated with an evaluation of vocational education. Initially comparisons of labor market experience (jobs held, wages received, weeks of unemployment, etc.) were made between those with and without vocational education. These comparisons involved limited controls for personal differences among the individuals. Now we realize that there are serious conceptual and empirical problems associated with these studies.

In order to analyze the impact of vocational or occupational education upon the labor market experience of graduates it is necessary to know what skills were obtained by the student and how these have affected the employer's perception of the individual as an employee. Have the skills obtained augmented an individual's human capital, making him or her a more efficient and productive employee? Will the employee's command of the skills reduce the employer's future need to provide on-the-job training? Or has the time spent in vocational courses been a substitute for general training which the employee must then replace through company activities and training? We know that vocational courses substitute for regular academic courses in high school but we don't know how this substitution affects the skills and competence demanded by employers. In addition, are the personal characteristics of students who choose vocational courses different from those who take regular academic or general curricula in ways that affect subsequent labor market experience (jobs held, wages received, months of unemployment)? If unmeasured personal differences strongly affect labor market results, then these could mask any positive or negative contributions of vocational and occupational training. We might find that vocational graduates did or did not receive high wages and conclude that this result was related to the type or level of education.

In fact, however, some personal characteristic, for example motivation, might really be the source of the results which we observed. Certainly there are personal differences, as Table II demonstrates, among those who participate in different types of training. Our difficulty is that we don't know if or how these differences affect the analytical results. If there are labor market advantages and benefits to specific training, will they apply to all graduates or only those whose initial labor market experiences coincide with particular business cycles? Differential results depending on when individuals entered the labor force can be seen in the experience of veterans of different wars. A study of the wage premium earned by veterans compared to non-veterans in 1977 determined that Vietnam era veterans suffered a wage loss compared to men of similar age, education, and other characteristics. Korean War and World War II veterans received higher wages than comparable non-veterans. Their average wages were 3.9% and 3.4% higher. The veterans who did best were peacetime veterans who had a 6.5% wage gain [Berger, 1983:476]. Clearly the time when one was a veteran was relatively more important for its impact on wages than merely being a veteran. Or consider studies of the difference in weekly earnings for women graduates of high schools. If one looks at 21 year olds in 1972, white female business/commercial program graduates appear to have earned $31.80 more per week than general or academic course graduates, a result that was statistically significant [Gustman, 1982:78]. The data used to reach this result were also available for seven years in the period 1968-1977, and for each age cohort of women of ages 18-24 in 1968. Consequently, a total of 74 equations to determine the wage advantage, if any, of being a business/commercial graduate could be and was estimated. Only

16 of these relationships indicate a significant and positive weekly wage advantage for the occupationally trained graduates. The best year was 1972 when for 6 of the 10 age cohorts the estimates were significant and positive. The best age group was the cohort which had been 21 years of age in 1968. For these women, there were positive and significant returns to their vocational preparation in 5 of the 8 years 1968-1977. If 1972 was a good year for business/commercial preparation, 1973 was a strange one. In that year those who were 26 years old and vocationally trained had a statistically significant wage advantage over regular graduates of $53. Those who were one year older, 27 years of age, had a statistically significant wage disadvantage of $38.62 per week. Given such variations any conclusive statements concerning wages or other economic advantages received or not received by vocational graduates must be treated with caution.

Over what period of the individual's working life should an advantage be expected to be maintained? If the training was quite narrow in scope and range, any advantage may depreciate to zero within a few years. Alternatively, if there are positive and significant wage or employment advantages to particular courses of instruction, one could expect a labor supply response to the advantage. The expected response would be an increased number of individuals obtaining the particular training and entering the relevant occupations. This in turn would tend to depress wages in the relevant occupations and in time one would no longer observe individuals with that particular training obtaining a wage or employment advantage relative to those without the specialized training except for the cost of training. Yet the training would still be very effective [Gustman,

1982:75]. A. The Literature:

An examination of reviews of the literature on the possible economic advantage or return to those who have obtained a vocational and occupational education suggests that there is little support for the idea that these graduates have received positive advantages over regular graduates in terms of higher wages, less unemployment and better jobs.

Recently Michael B. Tannen noted that a number of major studies: Grasso and Shea [1979]; Gustman and Steinmeier [1982]; Meyer and Wise [1982] etc., had concluded that the evidence did not support the idea that there were economic advantages [1983:369]. Susan Sherman has written about other studies and she reported mixed results. There were mixed but generally positive findings concerning the effectiveness of secondary vocational education in increasing the number of weeks worked per year for graduates. The findings were inconclusive, sometimes even contracdictory regarding earnings with some studies suggesting that obtaining occupational and vocational education led to lower wages than for graduates of general programs [Sherman, 1983:37].

Similar inconclusive overall results apply to Japan's experience. Umetani comments that basic vocational training (a one year course) does not assure higher earnings when compared to those who came immediately to a firm, though for perhaps one half of those who are employed in firms of less than 500 employees it did yield higher wages in 1966 [1980:66,70]. This is consistent with Rohlen's observation that in 1955 vocational schools were difficult to enter and that their diplomas meant better pay and employment, but that by the mid 1970's companies had little respect for public vocational schools and their graduates [1983:39].

Vocational and occupational education after high school may offer greater success. In 1984 Arvil Adams and Stephen L. Mangum reported on the post school training benefits obtained by men 24-34 in 1976 who were not enrolled in formal schooling in the years 1974-76. Forty-seven percent of the white males and 33% of black males had participated in occupational training with company provided training being the source of one-third of this education. After controlling for a variety of factors it appeared that managerial training provided the largest increase in wages, $1873 for whites and $1947 for blacks while professional and technical training yielded $834 for whites and $1255 for blacks. Among sources of education only company training demonstrated a significant impact, a fact that tends to underscore the importance of training when it is used in subsequent employment [1984:126]. We need not repeat a complete review of the various contrasting and contradictory studies but a few illustrate some central issues and should be commented upon. These selected studies will be examined under three headings: The Military, Replications, and Repeated Observations.B. Selected Studies

1. The Military:

John E. Friedland and Roger D. Little investigated the long term impact of military training. They looked at the 1966 hourly pay and earned income for men ages 45-49 years of age. They concluded that those men who used their military training received a salary premium of 12%, but for those who did not use their military training, that training yielded no long term economic value. This seems reasonable. Why would my accountant friend who flew Liberators during WWII receive a wage premium as an accountant, though he might have received one if he had continued to fly in civilian

life. Those who had received professional and managerial training in the military compared to their non-veteran counterparts earned markedly more than individuals with other types of training [Friedland, 1980:57,60,63]. The experience of Vietnam veterans has been less positive according to Berger and Hirsch. In their study the analytical issue was not so much the contribution to civilian wages of specific military training as it was that the men had veteran status. Only for veterans with 8-11 years of schooling were wages higher for veterans than for non-veterans. That there was a premium only for the 8-11 years of schooling group supported the the authors' idea that for this group of veterans military service was seen by employers as a substitute for high school graduation [Berger and Hirsch, 1983:477]. Another study which considered veterans' status only for those men 24-34 years of age who had held jobs as craftsmen concluded that military experience contributed an 8% wage advantage to veterans over non-veterans [Hills, 1982:229].

2. Replication:

In 1980 Brian Becker and Stephen Hills investigated the long run impact of teenage unemployment on those individuals' future wages. They looked at the 1975 wages of men 24-29 years of age compared to their participation in the labor market and their extent of unemployment in 1967 when they had been 16-19 years of age and not in school. In addition to the unemployment experience the authors were interested in the impact of post high school training (business school, correspondence study, military service, apprenticeships, etc.) on an individual's 1975 wages. They concluded that months of additional training, though not actual high school graduation, did have a significant and positive impact on wages [1980:364]. The same

authors replicated the study using 1976 data for a sample ch included three groups, those who were in school one year and out the next for 1966, 1967; 1967, 1968; and 1968, 1969. For these young men, weeks of training made no contribution to higher wages [Becker, 1983:207]. This variation in results obtained by moving the dependent variable data from one year to another is similar to the results reported above for women in commercial positions.

3. Repeated Observations:

A recent analysis by Robert H. Meyer of the annual (1972-1979) wage advantage associated with increased vocational coursework for those members of the high school class of 1972 who had 12 and only 12 years of schooling found as of 1976 higher weekly wages and more weeks worked per year for those with more vocational education than for those without such an education. The differences were more marked in 1972 than in 1979 [1984:95]. When the data was analyzed in a multi variable model, only women with commerical training and men with industrial arts training enjoyed positive and statistically significant annual income benefits from their training. For women with commercial education the gain was quite large, about a 15% differential. About one-third of the additional income was due to their receiving higher wage rates and the rest to the fact that they worked more hours per year than did the non-vocational graduates. For trade and industrial arts educated men the proportional gain was much smaller, 3.32%, about three-fourths of which was associated with higher wages [Meyer, 1984:113,122].

An earlier longitudinal survey for high school graduates involved Project Talent, whose first survey was in 1961. In that first year vocational graduates had higher wages, took less time to find a job, and had fewer

weeks of unemployment. Five years later the vocational graduates had an approximate $9 per week wage advantage, but by the 11th year, 1971, the advantage had declined to less than a dollar a week. In the first and fifth year multiple regression analysis determined that the wage advantage was statistically significant for those whose high school vocational education involved technical skills, but was not significant for those whose preparation had been in commercial and business studies. For post-high school education, the author determined that Project Talent students with apprenticeships, formal on-the-job training, and other post secondary vocational and occupational training had significantly higher earnings than did those members without additional training [Tannen, 1983:370,374,365,377,379,380]. In a study of graduates from the high schools of Worcester, Massachusetts, researchers found that male graduates from different high school tracks including vocational ones obtained different kinds of jobs. In addition the research design looked at the size of the employers with whom the graduates found employment, one of the very few to do so. The study concluded that the type of high school education did not influence the size of the initial employer. For women, only about one-quarter of the vocational graduates held white collar jobs, but three-quarters of non-vocational female graduates held white collar jobs. Despite these modest labor market differences neither men nor women vocational graduates received significantly different wages than general graduates. Eight years later, 44% of the women were in the labor force and about three-fourths of them full-time. The highest proportion of women who were in the labor force came from those with business training and the lowest percentage from those with a vocational, non-business background. For women's wages, there was no

difference based upon high school program, though women with business training had higher job status scores, and, when all of the data were standardized for personal characteristics, it was still clear that a vocational diploma did not yield a current wage advantage or an advantage in wage growth [Olszewski and Mass, 1984:145,151,155.158,168].

A study of post school occupational training received by young men from 1966 to 1976 obtained positive results. A year of training resulted in a 5% increase in annual income, half the value of an additional year of formal schooling. The greatest increase in income was associated with company training, while among different types of training the most beneficial was managerial training [Rumberger, 1874:781]. Such results must be treated with caution for the personal characteristics and work testing of the individual which caused him or her to be selected for the managerial training may be the key to the observed relationship, not the training.

C. The Locus of Advantage

In the discussion of the value of military training it was noted that only military training that was subsequently used in a civilian occupation appeared to have monetary value. Consequently, if we look only at those vocational graduates who have taken significant vocational studies and who are working in areas which use that knowledge, we ought to find some positive results. Daymount and Rumberger have done that in two publications (1982, 1984). They have concluded that in the cases where vocational training was in a specific program, then the pay-off was the highest, [1982:300;1984:178] and that among specific programs looked at with 1979 data, the best results were found in office occupations [1982:300]. These results are consistent with the positive returns to commercial courses,

at least for the first decade after high school, reported by Robert Meyer [1984:101]. This importance of reasonable amounts of training, and employment that uses that training in generating benefits to vocational and occupational training is supported by Stephen Hills' conclusions concerning the very positive value of apprenticeships (15% on earning) in construction employment [1982:230], Freemen's study of proprietary schools, where he noted that training was effective for the two-thirds of the sample who were employed in the area trained [1974:315],and Rumberger's results for post school training which found company training to provide the best results.V Conclusion

American vocational and occupational education takes place in a variety of settings, high schools, junior colleges, apprenticeships, proprietary schools, special government programs, the military, and civilian employers. Employers not only provide short term training themselves, they also encourage and subsidize employees in their attendance at outside educational institutions. In some instances employers own and operate their own colleges and universities. There are some 18 known examples of this which range from General Motors Institute which was started in 1926 to the more recent Wang Institute of Graduate Studies [Eurich, 1985: 88-95]. In Japan too, many corporate training programs are in-house universities. Nippon Telegraph and Telephone enrolls some 77% of its employees in at least one course while Hitachi spends on training about two thirds as much as it does on advertising. By any accounting these thousands of educational units and millions of students form a major activity and force in our economy. Based upon a recent survey it appears that some 13% of all American adults engage in adult education, about 60% of which was occupationally oriented. Over time an even higher proportion of all

adults will have engaged in some post-school occupational and/or vocational education.

During the post war years there has been an almost doubling in the proportions of young people who have obtained at least a high school education. Similarly in Japan there has been a vast increase in the number of individuals going on to obtain a high school diploma. In the immediate post war years the middle school graduate was the mainstay of the blue collar work force. In 1950 only 45% of middle school graduates proceeded on to high school. Today 94% do so. In Japan middle school graduates who go into the workforce are accepted as a legitimate group, though their marriage prospects are said to be dim since mothers seek more educated husbands for their daughters. In the United States such individuals, about 30 of each 100 eighth graders, are considered to be drop-outs and their status is looked down upon. Continuation rates to colleges in the two countries are relatively comparable, though the limited number of women attending four year colleges in Japan distinguishes Japan from the United States.

Vocational education is provided to students in both countries through a complex pattern of approaches. At the high school level a significant portion of American vocational education is provided in comprehensive high schools. The rest is provided in specialized vocational high schools. In Japan differentiated high schools are the more common approach to the provision of vocational education. Beyond high school both in the United States and in Japan there are specialized proprietary schools which seem to provide a similar range of courses in the two countries. In the United States, junior colleges and public post high schools provide significant

amounts of technical and vocational education. These two do not seem to have counterparts in Japan. In the United States formal apprenticeship programs and education and training within the military are examples of specialized training provided by employers. Employers in the United States also provide a wide range of on-the-job and specialized training, but not necessarily to new employees. In Japan employers are responsible for significant amounts of occupational training and new employees are a prime target for that training.

Immediate post high school employment for many Americans is with firms with which they had an affiliation while they were in high school, either through after-school work or formal co-operative programs. In addition some vocational and occupational counseling is available within high schools and there are some contacts with the United States Employment Service. Yet, as was seen in Table XIII, high schools are not widely seen by graduates as effective sources of job information. In Japan the inter-relationship between the employment service and the schools is much greater. The Employment Service takes credit for achieving essentially complete placement of new school leavers in Japan.

Since a basic concept of Japanese employers is life-time commitment the initial placement after school is seen as very important for both student and employer. Thus it is a more focused and structured activity than it is in the United States. In addition, because of the concept of life-time commitment the emphasis of major Japanese employers is upon general education more than specific vocational preparation. This in turn has lead to a greater emphasis upon training within the firm as opposed to outside training. In the United States where higher levels of employee

mobility are expected especially among younger workers, there is less emphasis upon employer training and more upon the individual employee's responsibility to obtain specific occupational and vocational education.

Despite the emphasis upon life time commitment in Japan, there is some mobility of workers in the immediate period after school leaving. As in the United States the levels of mobility do decline with age. Though some would claim that there is sufficient mobility in general, and among the young in particular, to negate the concept of life-time commitment as a central element in industrial relations, it is not evident among the larger employers and has yet to have an important impact upon the transition to work and the expected source of training for the labor force. In the United States a great deal of training is most productive for workers when it is directed toward skills which are known to be in demand. This has meant that employer sponsored or conducted training is perhaps as important here as in Japan.

We have a system of occupational and vocational education but the individual units do not appear to interact in a very systematic way even at the state level. Perhaps in part this is because of a genuine difficulty in understanding employer needs for newly trained individuals. This in turn reflects the dynamic nature of the economy, the differing attributes of a skilled job, and the fact that a significant number of individuals who hold skilled jobs do not appear to have received formal training for those positions.

There have been many studies of the impact of various types of training on the subsequent labor force experience of students. At best the results appear to be mixed. While there are theoretical complexities

which make interpretation of results difficult, several facts seem clear. There does not seem to be a positive labor market impact to generalized vocational and occupational education. When, however, one looks only at those individuals who have had a significant involvement with occupational and vocational education and who are employed in areas which use those skills, some results have been quite positive. Such individuals clearly have gained from specialized education. Among the types of specific vocational education the best results seem to be for programs preparing female clerical workers, but even there the results are not unanimous. Overall, the best results have been obtained by those who have received managerial training, though this may reflect prior selection more than the wonders of training. Still it seems clear that policies designed to improve the nation's occupational and vocational education must be targeted to specific situations.

TABLE I

Participation and Unemployment

(Out of School Individuals October, 1982)

| | Participation Rate | Unemployment Rate |
|---|---|---|
| Male | | |
| 16-19, no H.S. | 78.0 | 38.8 |
| 20-24, no H.S. | 88.1 | 27.1 |
| 16-24, H.S. | 92.5 | 17.3 |
| 16-24, 1-3 years of College | 94.7 | 11.7 |
| 16-24, 4 years of College and + | 98.0 | 8.4 |
| Female | | |
| 16-19, no H.S. | 48.6 | 38.9 |
| 20-24, no H.S. | 46.5 | 29.5 |
| 16-24, H.S. | 75.6 | 17.2 |
| 16-24, 1-3 years of College | 84.4 | 11.2 |
| 16-24, 4 years of College or more | 93.0 | 9.8 |

Source: Anne McDougall Young, "Students, Graduates, and Dropouts, October 1980-82", Special Labor Force Report, U.S. Dept. of Labor, Bureau of Labor Statistics, 2192, December 1983, p. 1.

TABLE II

Adult Education
(Participation, by Selected Characteristics and Provider of Instruction: 1981)

(For year ending in May. Includes all participants in adult education 17 years old and over regardless of their enrollment in high school or college

| Item | Total[1] | Male | Female | White[2] | Black[2] |
|---|---|---|---|---|---|
| Participants in adult education(1000) | 21,252 | 9,358 | 11,893 | 18,674 | 1,298 |
| Percent of population | 12.8 | 12.0 | 13.6 | 13.8 | 7.5 |
| | | | PERCENT OF POPULATION | | |
| Age: | | | | | |
| 17-34 years | 16.2 | 14.6 | 17.7 | 17.8 | 9.3 |
| 35-54 years | 15.1 | 14.1 | 16.0 | 16.4 | 8.2 |
| 55 years and over | 5.3 | 5.0 | 5.5 | 5.7 | 2.5 |
| Highest level of education: | | | | | |
| Eight years of school or less | 2.2 | 2.2 | 2.2 | 1.7 | 1.9 |
| 1 to 3 years of high school | 5.6 | 4.9 | 6.1 | 5.9 | 4.2 |
| 4 years of high school | 11.1 | 9.7 | 12.1 | 11.5 | 7.6 |
| 1 to 3 years of college | 19.6 | 17.2 | 21.8 | 20.5 | 13.0 |
| 4 years of college | 26.1 | 23.4 | 29.2 | 26.9 | 20.0 |
| 5 or more years of college | 31.1 | 28.4 | 36.0 | 31.4 | 30.1 |
| Annual family income: | | | | | |
| Under $7,500 | 6.3 | 5.2 | 7.0 | 6.8 | 4.6 |
| $7,500-$9,999 | 8.1 | 6.6 | 9.3 | 8.7 | 4.5 |
| $10,000-$14,999 | 11.0 | 8.6 | 13.0 | 11.6 | 7.8 |
| $15,000-$19,999 | 13.2 | 11.7 | 14.6 | 14.0 | 9.7 |
| $20,000-$24,999 | 15.1 | 14.5 | 15.8 | 16.0 | 9.8 |
| $25,000-$49,999 | 18.3 | 17.1 | 19.5 | 18.8 | 14.0 |
| $50,000 and over | 18.8 | 17.7 | 20.1 | 18.8 | 15.5 |
| Not reported | 7.5 | 6.7 | 8.1 | 7.5 | 5.6 |
| Courses taken (1,000) | 37,381 | 16,182 | 21,199 | 32,859 | 2,340 |
| | | | PERCENT DISTRIBUTION | | |
| Main reason for taking course: | | | | | |
| Job related reasons[3] | 60.3 | 69.2 | 53.5 | 60.7 | 61.5 |
| To get a new job | 11.8 | 10.5 | 12.7 | 11.3 | 17.0 |
| To improve/advance in current job | 44.6 | 54.1 | 37.3 | 45.5 | 38.8 |
| Non-job related reason[3] | 39.4 | 30.6 | 46.2 | 39.1 | 38.2 |
| General education | 9.6 | 9.3 | 9.9 | 8.8 | 17.1 |
| Personal/social reasons | 27.3 | 18.6 | 33.9 | 27.9 | 18.4 |
| Provider of instruction: | | | | | |
| Elementary, junior, or high school | 6.8 | 4.5 | 8.6 | 6.4 | 7.0 |
| 2-year college or voc-tech institute | 18.8 | 16.3 | 20.7 | 18.3 | 19.6 |
| 4-year college or university | 19.2 | 19.8 | 18.6 | 19.5 | 19.1 |
| Vocational, trade, or business school | 9.1 | 8.2 | 9.8 | 9.0 | 10.5 |
| Tutor or private instructor | 4.4 | 3.1 | 5.4 | 4.7 | 1.8 |
| Business or industry | 13.7 | 19.6 | 8.2 | 14.4 | 8.7 |
| Labor organization/professional assoc. | 5.0 | 6.6 | 3.7 | 5.2 | 3.5 |
| Government agency | 7.8 | 9.1 | 6.9 | 7.6 | 13.0 |
| Private community organization | 8.5 | 5.8 | 10.5 | 8.7 | 5.6 |
| Other | 6.7 | 7.0 | 6.5 | 6.3 | 11.2 |
| Employer provided course for employee | 24.8 | 31.1 | 19.9 | 24.9 | 28.2 |

[1] Includes other races, not shown separately. [2] Non-hispanic. [3] Includes other reasons, not shown separately.

Source: U.S. National Center for Education Statistics, Participation in Adult Education, 1981, and unpublished data. As reported in The Statistical Abstract of the United States, 1985, p. 161.

TABLE III

Enrollments in Vocational Education 1980-1981
(Numbers in Thousands)

| Program Area | Total | Secondary | Postsecondary and Adult |
|---|---|---|---|
| All programs | 16,861 | 10,466 | 6,396 |
| Agriculture | 883 | 664 | 179 |
| Distribution | 930 | 378 | 551 |
| Health occupations | 950 | 192 | 757 |
| Nonoccupational home economics | 3,189 | 2,550 | 640 |
| Occupational home economics | 574 | 377 | 197 |
| Industrial arts | 1,900 | 1,894 | 5 |
| Office occupations | 3,615 | 2,081 | 1,534 |
| Technical | 506 | 34 | 472 |
| Trade and industrial | 3,222 | 1,344 | 1,877 |
| Other | 1,134 | 952 | 182 |
| All occupationally specific programs | 5,793 | 2,858 | 2,935 |
| Agriculture | 376 | 304 | 73 |
| Distribution | 560 | 287 | 273 |
| Health occupations | 455 | 96 | 359 |
| Occupational home economics | 256 | 167 | 89 |
| Office occupations | 1,969 | 1,043 | 925 |
| Technical | 389 | 20 | 369 |
| Trade and industrial | 1,728 | 904 | 825 |
| Other | 60 | 37 | 23 |

NOTE: Occupationally specific enrollments include students above grade 10 enrolled in programs designed to train individuals for specific occupations, data from National Center for Education Statistics, Vocational Education Data Systems.

Source: Susan W. Sherman (ed.), Education for Tomorrow's Jobs (Washington: National Academy Press, 1983), p. 84.

TABLE IV

Enrollment in Occupationally Specific Instructional Programs, 1979-80a

| Program Area | Black not Hispanic | | Hispanic | | White not Hispanic | |
|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female |
| Agriculture | 19,710 | 4,602 | 8,548 | 2,771 | 241,642 | 68,038 |
| Distribution | 31,985 | 39,848 | 15,897 | 19,008 | 198,812 | 248,279 |
| Health Occup. | 8,220 | 48,786 | 4,487 | 17,208 | 49,246 | 295,692 |
| Home Ec. Total | 12,352 | 44,557 | 3,068 | 12,973 | 27,973 | 126,827 |
| Office Occup | 79,234 | 224,070 | 33,746 | 105,205 | 354 508 | 1,055,290 |
| Technical | 29,659 | 11,052 | 15,864 | 4,208 | 229,895 | 54,646 |
| Trade & Ind. Occup. | 188,304 | 49,620 | 96,038 | 22,707 | 1,068,187 | 230,480 |
| Other Nec. | 12,392 | 19,280 | 2,281 | 6,832 | 44,917 | 57,498 |
| Total | 381,856 | 441,815 | 179,929 | 190,676 | 2,215,180 | 2,136,750 |

a. Preliminary data from the National Center for Education Statistics, Vocational Education Data System (VEDS), 4 May 1982.

Source: Stephen J. Franchok, "Factors Influencing Vocational Educational Program Decisions"in Robert E. Taylor, Howard Rosen and Frank C. Pratzner (eds.), Responsiveness of Training Institutions to Changing Labor Market Demands (Columbus: The National Center for Research in Vocational Education, 1983), p. 270.

TABLE V

Trained New Editions to the Labor Force 1980-81

| | Completions in Public vocational program | Completions and left with marketable skill from non collegiate post secondary schools | Associate degree plus other formal recognition |
|---|---|---|---|
| Agriculture | 139,975 | 4,159 | " |
| Distribution | 189,356 | 200,240 | " |
| Health | 167,881 | 99,270 | 65,716 |
| Home Economics | 88,632 | 5,455 | " |
| Office Occupation | 576,846 | 215,621 | 104,637 |
| Technical | 97,798 | 74,131 | 119,532 |
| Trade & Industrial | 563,490 | 383,340 | " |

Source: Occupational Projections and Training Data 1984, U.S. Department of Labor, Bureau of Labor Statistics Bulletin 2206, May, 1984, p.p. 97-101, 105-106.

TABLE VI

Students in Special Training Schools: Japan 1983

| | Total | Female |
|---|---|---|
| Agriculture | 304 | 39 |
| Distribution | ... | ... |
| Health | 124,020 | 103,598 |
| Home Economics | 13,744 | 13,299 |
| Office Occupations | 46,358 | 27,019 |
| Technical | 67,449 | 9,484 |
| Trade Industrial | 11,860 | 43 |

Source: Japan Statistical Year Book, 1983, p. 662.

TABLE VII

High School Credits by Graduation Status,
Self-Reported Program and Curriculum Area, 1980[a]

| Curriculum area | College prep | Graduates: Vocational | Graduates: General | Graduates: Total | Dropouts | Total |
|---|---|---|---|---|---|---|
| Academic | 9.87 | 7.01 | 7.75 | 7.95 | 2.59 | 7.06 |
| Language arts (05) | 3.13 | 2.70 | 2.84 | 2.86 | .99 | 2.54 |
| Foreign Languages (06) | .77 | .24 | .29 | .37 | .05 | .32 |
| Mathematics (11) | 1.67 | .96 | 1.09 | 1.16 | .43 | 1.04 |
| Natural sciences (11) | 1.81 | .94 | 1.10 | 1.19 | 44 | 1.07 |
| Social sciences (15) | 2.49 | 2.16 | 2.43 | 2.37 | .67 | 2.09 |
| Vocational | 2.16 | 5.08 | 3.14 | 3.49 | .98 | 3.05 |
| Agriculture (01) | .06 | .16 | .25 | .19 | 14 | 18 |
| Distributive ed. (04) | .11 | .24 | .16 | .17 | 06 | .16 |
| Health occupations (07) | .05 | .08 | .05 | .06 | .02 | .05 |
| Home economics (09) | .63 | .80 | .80 | .77 | .24 | .65 |
| Office occupations (14) | 1.01 | 2.11 | 1.17 | 1.40 | .20 | 1.20 |
| Tech., trades and industry (16,17) | .30 | 1.70 | .70 | .90 | .32 | .80 |
| Other | 3.56 | 3.51 | 4.29 | 3.93 | 1.86 | 3.61 |
| Business (03) | .18 | .23 | .22 | .22 | .06 | .19 |
| Industrial arts (10) | .46 | .78 | .89 | .78 | .40 | 71 |
| Art, music (02,12) | .90 | .66 | 1.02 | .90 | .34 | 81 |
| Miscellaneous (08,18-22) | 2.03 | 1.82 | 2.16 | 2.05 | 1.06 | 1.91 |
| Total | 15.60 | 15.59 | 15.18 | 15.38 | 5.42 | 13.72 |

a. Tabulations based on a weighted sample of 17 to 21 year olds who were not enrolled in school full-time in the winter of 1980, who had completed 9 to 12 years of school, and for whom complete transcript data were available (N=1857). One credit corresponds to a standard, full-year course. Only credits for courses taken in grades 10-12 are included. Numbers in parentheses refer to major curriculum areas designated by the Office of Education.

Source: Russell W. Rumberger and Thomas N. Daymont, "The Economic Value of Academic and Vocational Training Acquired in High School" in Michael E. Borus (ed.), Youth and the Labor Market (Kalamazoo: W.E. UpJohn Institute for Employment Research, 1984), p.p. 162-3.

TABLE VIII

Vocational Courses and Post Secondary Alternatives

| Vocational Course proportions | College | | |
|---|---|---|---|
| | White Male | Hispanic Male | Black Male |
| 0-20% | 53.89 | 26.47 | 34.02 |
| 20-35% | 28.69 | 20.11 | 19.86 |
| 35% - | 10.87 | 11.67 | 13 41 |
| | White Female | Hispanic Female | Black Female |
| 0-20% | 47.62 | 23.65 | 34.90 |
| 20-35% | 22.40 | 16.75 | 23.84 |
| 35% - | 7.24 | 7.89 | 17.26 |
| | Never in School | | |
| | White Male | Hispanic Male | Black Male |
| 0-20% | 24.02 | 39.71 | 43.65 |
| 20-35% | 43.56 | 49.16 | 57.39 |
| 35% - | 65.48 | 63.33 | 63.53 |
| | White Female | Hispanic Female | Black Female |
| 0-20% | 28.62 | 54.73 | 38.41 |
| 20-35% | 49.75 | 52.36 | 45.98 |
| 35% - | 71.27 | 61.84 | 55.08 |

Source: Robert Meyer, "An Economic Analysis of High School Education", in National Commission for Employment Policy Special Report 39, (Washington: November, 1984), p.p. 61-62.

Table IX

Occupational Mobility 1980-81

| Not in School | Same occupation | | Different | | Unemp | | Not in Labor Force | |
|---|---|---|---|---|---|---|---|---|
| | male | female | male | female | male | female | male | female |
| Age 18-19 | 43.3 | 37.8 | 21.4 | 21.8 | 8.5 | 8.9 | 26.8 | 31.4 |
| 20-24 | 63.5 | 61.9 | 19.3 | 18.0 | 7.1 | 6.0 | 10.1 | 14.2 |
| 25-34 | 82.4 | 73.8 | 11.6 | 11.9 | 3.2 | 3.9 | 2.7 | 10.4 |

Source: Nancy F. Rytina, "Occupational Changes and Tenure, 1981" in Job Tenure and Occupational Change, 1981," Special Labor Force Report 2162. U S Department of Labor, January 1983, p.5.9

TABLE XI

Occupations of New Graduates, Japan 1980

| | Senior High School | |
|---|---|---|
| | Male (%) | Female (%) |
| Professional and Technical | 3.0 | 3.8 |
| Managers and officals | ... | ... |
| Clerical and related | 11.0 | 54.3 |
| Sales | 17.6 | 17.9 |
| Farming, Fish and Mine | 3.4 | .3 |
| Transport and Commerical | 4.7 | .6 |
| Craft and operators | 46.8 | 12.9 |
| Protective Services | 5.9 | .3 |
| Services | 5.8 | 9.2 |
| Other | 1.7 | .7 |

Source: Shunichiro Umetani and Beatrice G. Reubens, "Youth Employment in Japan" in Beatrice G. Reubens, Youth at Work (Totowa, N.J.: Rowman and Allanheld, 1983), p. 201.

Table X

Distribution of Occupations

October 1982

| | Male | | | Female | | |
|---|---|---|---|---|---|---|
| | H.S. gra.1982 | H.S. gra.1981 | Drop Out 1981 | H.S.82 | H.S.81 | Drop out 1981 |
| White Collar | 11.0 | 16.0 | 10 4 | 48.3 | 52.0 | 10.10 |
| Professional & Technical | .4 | 1.6 | ... | 1.0 | 3.6 | --- |
| Managers and Administrators | 2.9 | 5.4 | 1.1 | .7 | 2.1 | 1.1 |
| Sales | 4.5 | 3.8 | 2.3 | 9.8 | 9.0 | 2.3 |
| Clerical | 3.2 | 5.3 | 7.0 | 36.8 | 37.2 | 7.0 |
| Blue Collar | 55.2 | 58.6 | 66.6 | 14.7 | 13.8 | 66.6 |
| Craft&Kindred. | 15.6 | 16.8 | 19.9 | 2.1 | 1.0 | 19.9 |
| Operatives except Transport | 13.3 | 17.1 | 19.1 | 7.7 | 10.4 | 19.1 |
| Transport operatives | 4.4 | 3.8 | 1.4 | 1.6 | 1.3 | 1.4 |
| Non-farm laborers | 21.8 | 20.8 | 27.2 | 4.2 | 2.2 | 27.2 |
| Service | 22.3 | 19.3 | 21.0 | 35.2 | 33.9 | 21.0 |
| Farm | 11.5 | 6.1 | 2.1 | 1.9 | .3 | 2.1 |

Source: Anne M. Young, "Students Graduates and Dropouts" Special Labor Force Report 2192, U. S. Department of Labor, December 1983, pp. 24-25.

Table XII

JOB SEEKING METHODS

| Characteristic Employed May 1976 | Job Seeking Method ( % using) Employer Directly | Friends Relatives | School | Public Employed Agency | Priv. Empl. Agency | Want Ads | Other |
|---|---|---|---|---|---|---|---|
| 16-19 years old | 74.3 | 20.4 | N/C | 9.9 | 2.4 | 20.1 | 7.5 |
| 20-24 years old | 72.1 | 20.0 | N/C | 11.2 | 4.5 | 25.0 | 7.1 |
| 25-44 years old | 69.1 | 15.9 | N/C | 8.7 | 7.8 | 26.9 | 8.1 |
| Found a Job in 1972 | | | | | | | |
| All Persons | 66.0 | 50.8 | 12.5 | 33.5 | 21.0 | 45.9 | 11.8 |
| Men 16-19 | 64.4 | 65.8 | 12.1 | 27.3 | 9.7 | 37.1 | 12.5 |
| Men 20-24 | 69.1 | 59.2 | 17.1 | 41.9 | 18.1 | 46.7 | 10.4 |
| Women 16-19 | 62.8 | 59.7 | 12.5 | 24.3 | 18.1 | 40.8 | 10.4 |
| Women 20-24 | 64.8 | 56.1 | 21.2 | 31.2 | 30.2 | 51 0 | 13.1 |
| Looking for Work Because Left School (M&F) | 66.2 | 58.5 | 38.2 | 29.3 | 23.8 | 40.9 | 11.4 |
| All ages: 8 or less years education | 68.9 | 47.1 | 2.0 | 33.6 | 8.5 | 29.4 | 10.8 |
| 1-3 years high school | 67.1 | 53.1 | 9.7 | 31.9 | 10.6 | 40.7 | 10.7 |
| High school only | 63.9 | 51.5 | 7.3 | 35.9 | 19.1 | 48.9 | 11.7 |
| 1-3 years college | 65.3 | 51.2 | 12.0 | 35.0 | 29.6 | 53.4 | 10.7 |
| College and more | 69.4 | 48.0 | 38.4 | 29.1 | 24.1 | 43.3 | 14 6 |

Source: Carl Rosenfeld, "The Extent of Job Search by Employed Workers", Special Labor Force Report 202, U.S. Department of Labor, 1977, p.61; Job Seeking Methods used by American Workers, Bulletin 1886, U.S. Dept. of Labor, Bureau of Labor Statistics, 1975, pp.20,21,27,28.

TABLE XIII

Effectiveness and Job Seeking Methods *

Effectiveness of Method of Job Seeking (persons obtaining job be method ÷ by persons using the method)

| | Employer Directly | Friends Relatives | School | Public Employment | Priv. Emp. | Want Ads | Other |
|---|---|---|---|---|---|---|---|
| 8 years or less education | 57.2 | 79.2 | 0.0 | 18.9 | 5.3 | 23.1 | 36.8 |
| 1-3 years H.S | 49.3 | 26.1 | 20.0 | 15.0 | 14.4 | 27.9 | 31.1 |
| High School | 47.3 | 21.9 | 17.2 | 15.4 | 29.2 | 25.4 | 36.9 |
| 1-3 years College | 45.3 | 21.7 | 31.2 | 11.2 | 27.8 | 24.5 | 41.4 |
| 4 & more years college | 44.3 | 20.0 | 21.0 | 6.5 | 18.5 | 15.6 | 52.5 |
| Age 16-19[b] | 50.9 | 29.1 | 28.4 | 15.5 | 22.9 | 20.8 | 33.9 |
| Age 20-24 | 51.5 | 19.2 | 26.8 | 15.2 | 26.9 | 20.9 | 45.3 |
| All Ages | 52.8 | 24.4 | 24.0 | 15.2 | 26.6 | 26.6 | 44.0 |
| Looked for work because left school | 47.7 | 21.1 | 27.3 | 15.0 | 21.8 | 14.7 | 48.2 |

b) Calculated from tables in the report. For unknown reasons such calculations are not equivalent to those obtained for categories for which effectiveness tables were presented.

Source: Job seeking Methods Used by American Workers, Bulletin 1886, U.S. Dept. of Labor, Bureau of Labor Statistics, 1975, p. 42, 27, 36.

TABLE XIV

Skill Acquisition by Craftsmen

| Ages | % of those who had worked in crafts' jobs who had formal training | % of those who had not worked in crafts' jobs who had formal training |
|---|---|---|
| White | | |
| 24-25 | 61.9% | 37.4% |
| 26-28 | 66.0 | 44.3 |
| 29-31 | 67.4 | 44.1 |
| 32-34 | 72.4 | 46.1 |
| Black | | |
| 24-25 | 54.2 | 38.7 |
| 26-28 | 59.6 | 37.2 |
| 29-31 | 60.8 | 29.3 |
| 32-34 | 58.0 | 35.3 |

Source: Stephen M. Hills, "How Craftsmen Learn Their Skills: A Longitudinal Analysis" in Robert E. Taylor, Howard Rosen and Franck C. Pratzner (eds.), Job Training for Youth (Columbus: The National Center for Research in Vocational Education, 1982), p. 207.

TABLE XV

Occupational Classification of Most Recent Job
(17 to 21 Year Old High School Graduates) May 1980

| Sex and Occupation | Secondary Vocational Education Participation Pattern | | | | | |
|---|---|---|---|---|---|---|
| | Concentrator | Limited Concentrator | Concentrator/ Explorer | Explorer | Incidental/ Personal | Non-vocational |
| | Percentage Distribution | | | | | |
| Males, all occupations | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Professional & technical | 5.7 | 7.8 | .9 | 5.1 | 9.1 | 10.2 |
| Managerial | 6.6 | 4.0 | 3.2 | .0 | 5.4 | 5.0 |
| Sales | 5.5 | 4.9 | 5.0 | 9.7 | 5.0 | 7.2 |
| Clerical | 6.8 | 10.5 | 17.3 | .0 | 11.9 | 13.7 |
| Crafts | 32.5 | 24.3 | 24.7 | 9.7 | 15.9 | 14.8 |
| Operatives | 17.5 | 20.9 | 19.1 | 40.2 | 21.0 | 21.6 |
| Laborers | 12.3 | 15.4 | 14.6 | 3.8 | 14.6 | 11.0 |
| Farmers & farm managers | 3.1 | .8 | .0 | .0 | .1 | .0 |
| Farm laborers | 3.7 | 1.8 | 2.9 | 5.3 | 2.0 | .9 |
| Service | 6.4 | 9.6 | 12.3 | 26.3 | 15.2 | 15.6 |
| Household service | .0 | .0 | .0 | .0 | .0 | .0 |
| Sample size | 115 | 200 | 99 | 19 | 508 | 368 |
| Females, all occupations | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Professional & technical | 2.3 | 4.8 | 3.8 | .0 | 7.4 | 19.8 |
| Managerial | 4.5 | 3.4 | 4.4 | .0 | 4.1 | 3.6 |
| Sales | 5.4 | 6.6 | 10.7 | 9.9 | 6.5 | 10.9 |
| Clerical | 60.8 | 53.3 | 38.9 | 35.5 | 40.0 | 36.8 |
| Crafts | .0 | .3 | 3.1 | .0 | .4 | .0 |
| Operatives | 10.0 | 6.3 | 13.6 | 28.7 | 6.8 | 4.6 |
| Laborers | 1.7 | 2.9 | .9 | .0 | 2.7 | .1 |
| Farmers & farm managers | .0 | .0 | .0 | .0 | .9 | .0 |
| Farm laborers | .9 | .6 | .8 | .0 | .0 | .0 |
| Service | 14.1 | 21.0 | 23.7 | 28.0 | 30.1 | 23.2 |
| Household service | .3 | .8 | .3 | .0 | 2.0 | 1.1 |
| Sample size | 195 | 307 | 193 | 26 | 520 | 207 |

[1] High school transcripts were obtained in May of 1980 for a subsample of 17 to 21 year old high school graduates who had been employed during the previous year. This subsample included civilian respondents for whom course information for grades 9 through 12 was available. A case was eliminated from the subsample if a respondent was not interviewed in 1980, was serving in the military, had completed less than 12 years of schooling, or had an incomplete transcript.

Source: The Ohio State University, National Center for Research in Vocational Education. Influences of High School Curriculum on Determinants of Labor Market Experiences, 1982.

TABLE XVI

High School Vocational Credits
(By Graduation Status, Program, and Curriculum Area)

| Vocational curriculum area | Graduates | | | | Dropouts | Total |
|---|---|---|---|---|---|---|
| | Academic | Vocational | | General | | |
| | | Specific[a] | Total | | | |
| Percent with some credits | | | | | | |
| Agriculture | 4 | 75 | 9 | 13 | 11 | 10 |
| Distributive education | 7 | 71 | 11 | 11 | 7 | 10 |
| Health occupations | 3 | 43 | 3 | 2 | 1 | 2 |
| Home economics | 44 | 81 | 50 | 60 | 19 | 46 |
| Office occupations | 56 | 96 | 59 | 61 | 21 | 53 |
| Tech., trades & ir .s. | 11 | 67 | 38 | 24 | 14 | 24 |
| Percent with 3 or more credits | | | | | | |
| Agriculture | 1 | 56 | 2 | 4 | 1 | 3 |
| Distributive education | 1 | 40 | 4 | 2 | 1 | 2 |
| Health occupations | 1 | 32 | 1 | 1 | 1 | 1 |
| Home economics | 5 | 56 | 8 | 8 | 0 | 6 |
| Office occupations | 13 | 78 | 4 | 15 | 0 | 17 |
| Tech., trades & indus. | 5 | 54 | 7 | 12 | 6 | 13 |
| Percent with 6 or more credits | | | | | | |
| Agriculture | 0 | 10 | 0 | 0 | 0 | 1 |
| Distributive education | 0 | 8 | 1 | 0 | 0 | 0 |
| Health occupations | 0 | 20 | 1 | 0 | 0 | 0 |
| Home economics | 1 | 27 | 12 | 1 | 0 | 3 |
| Office occupations | 1 | 31 | 14 | 2 | 0 | 4 |
| Tech., trades & indus. | 1 | 32 | 15 | 4 | 1 | 6 |

a. Students whose specific vocational program corresponded to the vocational curriculum areas that are listed.

Source: Russell W. Rumberger and Thomas N. Daymont, "The Economic Value of Academic and Vocational Training Acquired in High School" in Michael E. Borus (Ed.), Youth and the Labor Market (Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research, 1984), p. 165.

TABLE XVII
Vocational Preparation and Jobs[a]

| Vocational and occupational area studied (No. of students in program)[b] | Job used specific vocational program participation | |
|---|---|---|
| | Yes | No |
| | **Males** | |
| Agriculture (40) | 42 | 17 |
| Distributive education (16) | 38 | 27 |
| Health occupation (0) | - | 5 |
| Home economics (13) | 4 | 6 |
| Office occupation (16) | 54 | 19 |
| Trade and industry (191) | 65 | 59 |
| | **Females** | |
| Agriculture (9) | 3 | 7 |
| Distributive education (16) | 66 | 28 |
| Health occupation (16) | 40 | 6 |
| Home economics (97) | 15 | 13 |
| Office occupation (248) | 60 | 25 |
| Trade and industry (34) | 26 | 32 |

a. For example, the entry in the top row in the left hand column indicates that 42 percent of students who participated in an agricultural vocational program obtained an occupation that utilizes skills developed in an agricultural vocational training program. The entry in the top row in the right hand column indicates that 17 percent of students who did not participate in an agricultural vocational program (i.e., either participated in another vocational program area or did not participate in any vocational program) obtained an occupation that utilizes skills developed in an agricultural vocational training program.

b. The entries for the number of students in a program are unweighted while the main entries are weighted percentages.

Source: Thomas N. Daymount and Russell Rumberger, "Economic Value of Academic and Vocational Training Acquired in High School", in Michael E. Borus (ed.), Youth and the Labor Market (Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research, 1984), p. 179.

TABLE XVIII

Sources of Skill Acquisition

| | % who needed Training[a] | School | Company Formal | Company Informal | Military | Other |
|---|---|---|---|---|---|---|
| Occupation | 55 | 29 | 10 | 28 | 2 | 4 |
| Executives | 71 | 43 | 12 | 39 | 3 | 4 |
| Professional | 93 | 82 | 9 | 22 | 2 | 4 |
| Technicians | 85 | 58 | 14 | 32 | 5 | 4 |
| Sales | 43 | 15 | 12 | 28 | 1 | 4 |
| Clerical | 57 | 33 | 7 | 31 | 1 | 2 |
| Service | 36 | 13 | 9 | 18 | 1 | 2 |
| Farming | 28 | 8 | 1 | 16 | ... | 11 |
| Craftsmen | 65 | 16 | 17 | 40 | 5 | 10 |
| Operators | 37 | 6 | 6 | 26 | 1 | 3 |
| Transport | 36 | 2 | 8 | 26 | 2 | 5 |
| Laborers | 16 | 2 | 2 | 13 | 1 | 1 |

a) Answered yes to a question as to whether they needed specific training to obtain their current job.
b) Sources will sum to more than the percentage who needed training due to multiple answers.

Source: Department of Labor, How Workers Get Their Training, Bureau of Labor Statistics, Bulletin 2226, February, 1985, p. 21.

TABLE XIX

Skill Acquisition by Type of Schooling
(Selected Occupations)[a]

| Occupation | High School Vocational | Priv. Post High Vocational | Public Post High Vocational | Jr. College | 4 year College | Formal Company |
|---|---|---|---|---|---|---|
| Secretary | 35.1 | 6.1 | 3.8 | 14.1 | 7.1 | 4.0 |
| Auto Mechanics | 12.8 | 3.1 | 4.2 | 7.0 | ... | 14.7 |
| Electricians | 9.3 | 3.3 | 5.9 | 8.2 | ... | 31.6 |
| Hairdressers | 7.0 | 45.0 | 10.8 | 12.3 | ... | 22.3 |
| Barbers | ... | 30.8 | 15.7 | ... | ... | ... |
| Machines | 9.6 | ... | 4.7 | ... | ... | 23.5 |
| Nursing Aides | 4.1 | 5.6 | 5.4 | 11.0 | ... | ... |
| Registered Nurses | ... | 6.1 | 3.4 | 28.9 | 45.4 | ... |
| Computer Programmers | ... | ... | 3.7 | 18.5 | 39.6 | ... |

a) The occupations were selected from those twenty five occupations which had the largested number of individuals who utilized the various schools to obtain vocational training.

Source: Department of Labor, How Workers Get Their Training. Bureau of Labor Statistics, Bulletin 2226, February, 1985, pp. 25-28.

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