THE COSTS OF DROPPING OUT OF SCHOOL

AND

THE PRODUCTIVITY BENEFITS OF RETURNING AND GRADUATING:

A SURVEY OF IOWA'S ALTERNATIVE SCHOOL GRADUATES

FROM 1987 TO 1989

EXECUTIVE SUMMARY

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CHAPTER 1

PRODUCTIVITY AND THE STUDENT AT-RISK

Introduction

As the title of this report indicates, the purpose of this research study was two-fold: (1) to assess the costs of dropping out of school and (2) to survey the productivity benefits of returning and completing a high school education in an alternative school. Available government data was used to study the cost factors. Graduates of Iowa alternative schools during 1987-89 were randomly selected and surveyed by telephone to study the productivity benefits. In addition, employers of a small subsample of these graduates were surveyed by questionnaire regarding the graduates' productivity.

Reasons for the Study

The two issues — the costs of dropping out of school and the benefits of returning and graduating — are two sides of the productivity "coin." The first question is important for gaining an understanding of the dimensions of the dropout problem. The dropout rate in Iowa has increased gradually but steadily during the past several years (Iowa Department of Education, 1990a). (See Figure 1.)

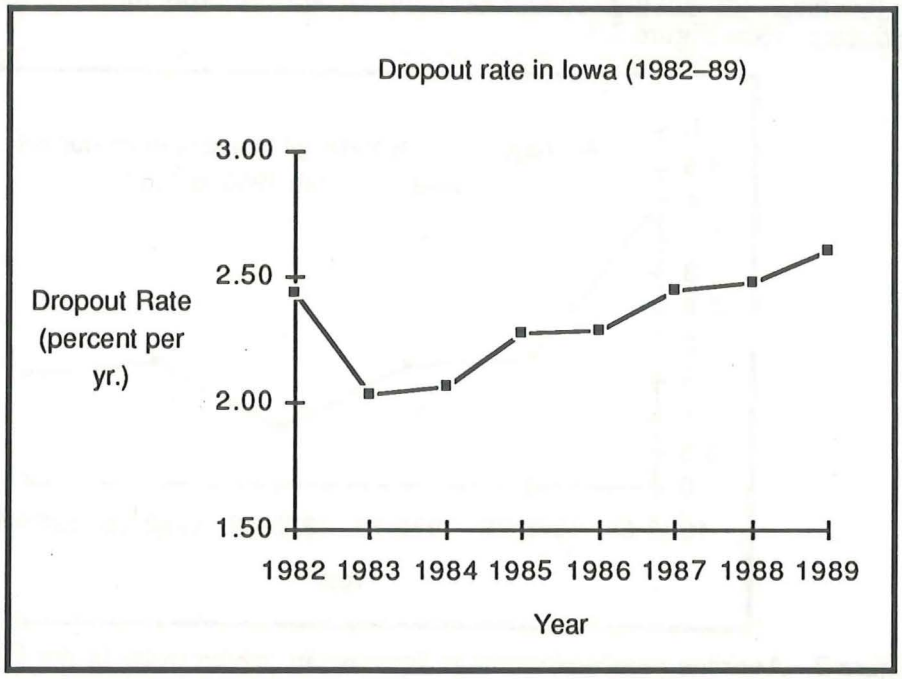

Figure 1. Iowa dropout rate (dropouts as percent of annual 7-12 enrollment in Iowa).

The costs of dropping out of school include (1) loss of personal income and state revenue, (2) increased welfare burden to the taxpayers, (3) increased risk of incarceration, (4) deceleration of personal growth and human potential, and (5) reduced sense of control over one's life. These should be viewed as "opportunity costs", which can be turned into savings and benefits through programs to educate dropouts to high school completion. The alternative schools of Iowa constitute one such program. The productivity benefits of this dropout remediation program is the second issue addressed in this study.

The issue of productivity benefits has special significance because of mounting

criticism of public education in this country. The business community has been particularly critical of public schools of late. For example, some company leaders claim that about half of their applicants lack the basic skills in math and English necessary to take advantage of their training programs (Fiske, October 1989). Many companies have started their own "schools" to remediate new employees in these basic skill areas (Charlier, February 9, 1990). American business reportedly spends $30 billion annually on such remediation programs (Harris, May 29, 1989). It is hoped that the survey results of this study will shed some light on whether or not these concerns are justified for alternative school graduates.

Historical Perspective: Productivity, Poverty, and the Student At-Risk

A brief historical analysis may help to understand the importance of the productivity issue as it relates to the at-risk student[1], in particular, the high school dropout. The aforementioned increase in the dropout rate in Iowa has occurred during a period of rising poverty and homelessness (Wright & Wright, 1989). This increase in poverty is no doubt the result of the confluence of many factors. These include the farm crisis of the mid-1980s, the scarcity of low income housing, and staggering national debt. Perhaps more critically, this rise in poverty has been linked to the drop in national productivity (total GNP divided by the cost to produce it), which occurred in the late 1960s and early 1970s (Catterall & Cota-Robles, 1989). This drop in productivity occurred during the years when the parents of present high school age children were entering the work force as high school graduates. (See Figure 2.)

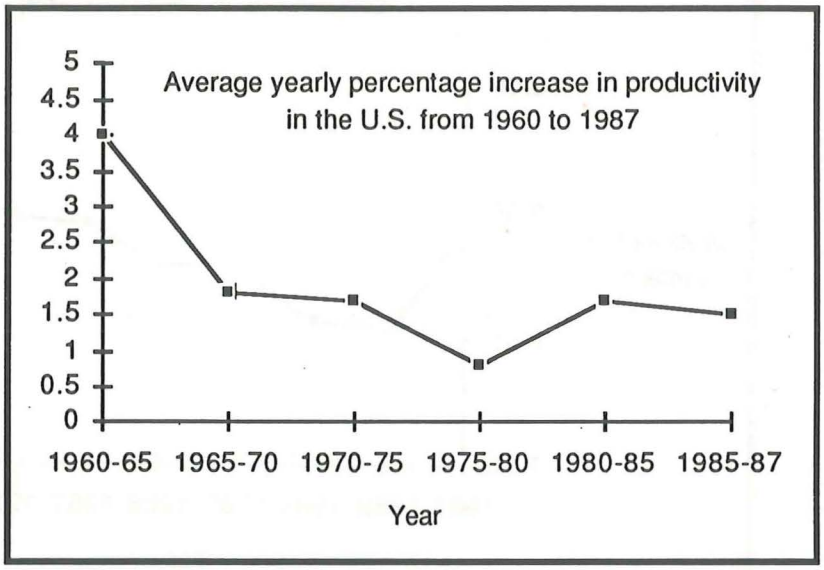

Figure 2. Average yearly percentage increase in productivity in the U.S. business sector between 1960 and 1987.

[Note: These percentages were based on five-year increments, except for 1985 to 1987, the last year such data were available (U.S. Bureau of Labor Statistics, 1989a).]

[1] The definition of at-risk students used by the Iowa Department of Education includes the following categories: (1) those not meeting the goals of an educational program, (2) those not completing high school (dropouts), and (3) those not becoming productive workers. This study focuses on persons who were formerly in the second at-risk category, but who returned and completed their high school educations. It addresses the extent to which these former students have successfully avoided the third at-risk category, i.e., the extent to which they have become productive workers (and citizens).

The reasons for the drop in productivity during 1965-75 are many and varied. Michael LeBoeuf (1982) provided twelve "pieces of the productivity puzzle," which include the following:

1. Slowing of the movement of workers from farms to factories (and the reduction in the gains in productivity associated with this historical shift);
2. Vast increase in the numbers of workers during this period, due to (i) more women entering the work force and (ii) the coming of age of the post-World War II "baby boom" generation;
3. Changing nature of the U.S. economy, from manufacturing and products to information and services.

By the late 1960s, due to over a century of agricultural research and technological advancements, less than 5% of the U.S. labor force was involved in agricultural production. This compares with about 17% in 1940, 38% at the turn of the century, and 70% in the early part of the 19th century. Since, in 1970, only about three U.S. workers in 100 were involved in agricultural production, there was little more to be gained, in terms of increased productivity, from the farms-to-factories migration. (This factor may have affected Iowa workers less, since about 10% of the gross state product is from farms and about 75% of the jobs are agriculture-related (Wright (1989), p. 149).)

The new workers of this period ("baby boomers" and women) were, at that time, relatively inexperienced. With their vast numbers, they outgrew the economy's ability to create new capital, resulting in a reduction in productivity. The change from a manufacturing to an information/service economy has also contributed to a reduction in productivity, as well as a lowering of the standard of living in this country. The productivity of workers in the service sector is more difficult to measure precisely, but it is generally considered to be lower than that of manufacturing (Monks, 1985). In general, service jobs tend to be lower paying than manufacturing jobs.

To these three factors, one must add the Vietnam War, which spanned this ten-year period. Nearly 58,000 American lives were lost in this conflict. Seven times this number were wounded or captured, but survived — in many cases with severe impairment. Many soldiers were exposed to Agent Orange, a chemical herbicide linked to cancer and other disorders, while many others came back addicted to opium and/or heroin. According to a Veterans Administration psychiatrist, seven hundred thousand Vietnam veterans suffer from "post-traumatic stress disorder" — the modern term for "shell shock" or "battle fatigue" (Karnow, 1983). About 10,000 left the country to avoid the draft and, despite the 1977 amnesty, many have chosen not to return. The war polarized the country, alienated a generation of college students (especially after the Kent State killings), and was generally considered to be a disaster for the U.S. economy, costing over 120 billion dollars from 1965 to 1973 (ibid.). It was, by all measures, a sad waste of our most vital resource — human capital.

The war in Vietnam was just one example of the paucity of leadership during this period. It ended with an administration in shambles, a Vice President forced to resign (later convicted for accepting bribes), a President also forced to resign rather than face impeachment (for obstruction of justice, abuse of power, and contempt of Congress), and a controversial pardon granted to him by his appointed Vice President who acceded to the presidency. This lack of leadership made it difficult to develop a national commitment to productivity (LeBoeuf, 1982).

Productivity continued to worsen in the late 1970s, with runaway inflation ("stagflation") and the second oil shock of the decade in 1979 brought about by the hostage crisis in Iran. Although productivity rebounded somewhat during the 1980s, the changes in the structure of the U.S. economy, from manufacturing to generally lower paying service jobs, resulted in a reduction in real income from 1970 to 1987 of nearly 10% (Wright (1989), p. 298). The economic recovery of the 1980s was bought, in part, by

corporate "downsizing," a reduction in labor union membership, unfriendly takeovers and leveraged buyouts, a reduction in low income housing, and an increase in the national debt from 900 billion dollars to 2.7 trillion dollars. All of these factors are generally considered harmful to long term economic growth and social well-being. Moreover, these factors produced an economic configuration of forces that was diametrically opposed to the average wage earner. Many of these wage earners have high school age children. Some of these children have already dropped out of school; others are at-risk or may drop out in this decade.

Future Outlook

Factors likely to exert a positive influence on productivity and economic growth in this decade include the following:

1. Increased emphasis on quality control and quality improvement in U.S. industry, necessary to maintain international competitiveness (Deming, 1986);
2. Increasing numbers of "hustling mini-companies" with high growth rates (Peters, 1987);
3. The rise to power of the highly educated post-World War II "baby boom" generation;
4. The increased involvement of women, many highly educated, in the work force;
5. Postponement of childbirth by many "baby boomers".

Due to increasing international competition, American industry has taken a renewed interest in quality control and process improvement. The Iowa Quality Consortium actively promotes the use of such methods in business and industry in this state. Small, innovative firms with "niche" or specialty markets are putting these and other progressive management concepts into effect and achieving high growth rates (Peters, 1987).

The postwar "baby boom" generation of workers has brought many changes in the economic landscape. Originally considered to be a negative productivity factor (due to the inexperience of these workers), this vast group of men and women have matured, gained experience, become highly educated, and are now moving into positions of economic power. The postponement of childbirth ("baby bust") by members of this generation should improve productivity in the long term, since these couples tend to be highly educated and their childlessness leaves them with more time and energy to devote to their careers. This postponement should also have a mitigating effect on the problem of at-risk youth, since these couples should be better equipped to provide and care for their children when they arrive (than those who have children in their teens or twenties).

The present demographic trends are, however, somewhat disturbing. In particular, birthrates among Hispanics and Blacks — groups with traditionally high dropout rates — are much higher than those of Whites. The U.S. Bureau of the Census projects population growth rates for Hispanics and Blacks of 38.6% and 14.6%, respectively, compared with only 3.2% for Whites during the period from 1990 to the year 2000 (Wright (1989), p. 233). Moreover, about 23% of Whites, 35% of Blacks, and 45% of Hispanics, ages 18 to 19, did not complete high school in 1986 (National Center for Educational Statistics, 1989). The cultural minority groups are also those most affected by poverty, with 33% of Blacks and 28% of Hispanics living below the poverty line, compared with 10.5% of Whites (U.S. Bureau of the Census, 1988). Thus, the cultural subgroups which are growing the most rapidly are also those with the greatest impoverishment and the highest dropout rates. (See Figure 3.)

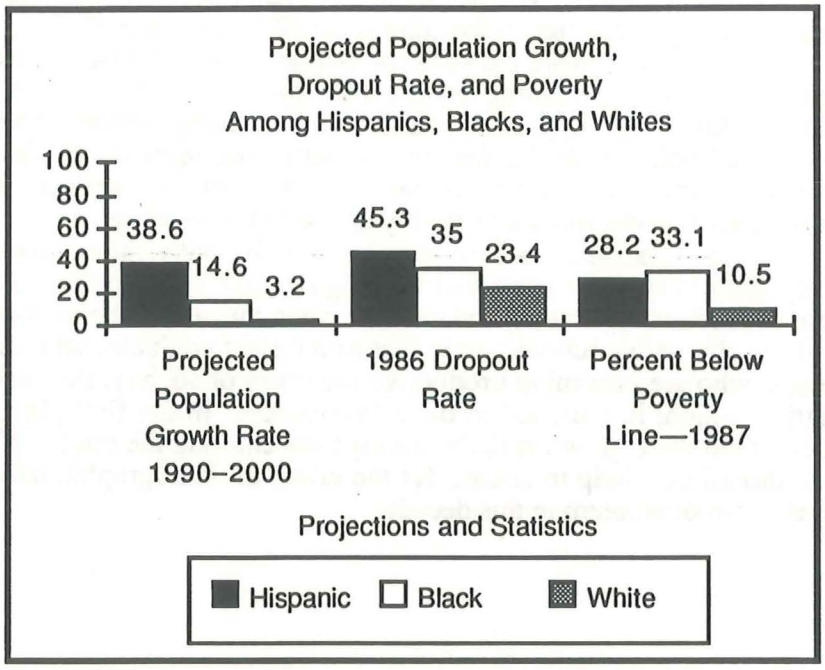

Figure 3. Projected Population Growth, Dropout Rate, and Poverty Among Hispanics, Blacks, and Whites (in percent within subpopulations).

An additional subpopulation causing concern with regard to the issue of the at-risk student is that of White, single parent families, in most cases headed by a female (Catterall & Cota-Robles, 1989). Nationally, the number of such families has almost doubled in the past 15 years and over half of those with related children under eighteen lie below the poverty line (National Center for Educational Statistics, 1989). The rise in teen pregnancy and out-of-wedlock births have contributed to this phenomenon. In Iowa, the rate of live births to teenage mothers increased to 10.3% in 1989 after holding fairly steady at about 9.3% for the previous five years. Out-of-wedlock births in Iowa have increased by about a percent a year from around 5% in 1975 to just under 20% in 1989 (Source: Department of Health, State of Iowa). A survey conducted by the National Center of Health Statistics in 1982 indicated that women who came from single parent families were more likely to begin having sexual intercourse (and to marry) at earlier ages than women who had lived with both parents (Wright (1989), p. 241). Available data thus indicate that this subpopulation will continue to grow. Moreover, because of their members' high rate of poverty, this subgroup may be expected to add to the growing dropout/at-risk problem in Iowa.

Children suffer most from poverty. This can take the extreme form of malnutrition, the lack of proper shelter or decent clothing, and child abuse. Homeless children may be the most likely to be affected by poverty in this manner. In less extreme situations, this suffering includes the lack of educational materials and facilities in the home, family stress leading to distraction from the child's educational objectives, and the lack of academic role models. The latter can be a serious problem for minority group children, exacerbated by cultural differences that exist between them and the majority group, which often controls the educational system in the district. Moreover, "cultural bias" — a distortion of the measures of an individual's achievement due to characteristics of test items, the instructional program, or the testing situation which affect different cultural group members differently — can occur in educational assessment (Veale & Foreman, 1983). Such distortions can seriously impede the diagnosis of learning difficulties among minority students (Foreman & Veale, 1988). Differences in language backgrounds, e.g., standard

English and Black English Vernacular (sometimes called "street language") can also cause misunderstanding which makes learning difficult for minority students (Orr, 1987).

Unless schools make the kinds of changes needed to encourage students of various cultural backgrounds, learning styles, and career interests to stay in school and learn marketable skills, we may look forward to an increasing number of students who "just say no" — to school. With the increasing skill requirements of the "information age", these demographic and institutional factors represent serious impediments to the improvement of productivity and quality of life in this country.

If the alternative schools of Iowa are merely "baby sitting" incorrigible students and allowing them to graduate upon their putting in a sufficient amount of time, they will likely become unproductive workers and citizens when they enter the market place. On the other hand, if the alternative schools are in fact turning out graduates with marketable knowledge and skills, who are becoming productive members of society, this will help to turn around a situation which, in part, led to their "at-riskness" in the first place — the reduction in productivity in the U.S. when their parents were entering the market place roughly 20 years ago. It should also help to counteract the effect of demographic trends which threaten to add to the at-risk problem in this decade.

CHAPTER 2

THE COSTS OF DROPPING OUT OF SCHOOL IN IOWA

The costs — to society, business, and the individual — of dropping out of school are many and varied. These costs include behavioral and human qualities as well as economic variables such as income, revenue, public assistance, and penal system involvement. More specifically, five factors are considered here including the following:

1. The reduction in personal income and loss in state revenue;
2. The increase in the welfare burden due to higher unemployment rates (among dropouts);
3. Increased risk of incarceration;
4. Deceleration in human growth and potential;
5. Reduced sense of control over one's life.

Cost Factor 1: The Reduction in Personal Income and Loss in State Revenue

The research literature provides estimates of the personal income sacrificed (in part) by dropping out of school. Nationally, the Bureau of the Census estimates that male dropouts earn about $260,000 less over their lifetimes than male graduates; for females, the difference is estimated to be $170,000 (McDill, Natriello, & Pallas, 1987). If the distribution of males to females is 1:1 (equal numbers), the average income loss would be estimated to be $215,000. In Iowa in 1988-89, the ratio of male to female dropouts is 57:43, so the average income loss would be estimated to be

$$(.57)\ ($260,000) + (.43)\ ($170,000)$$

or $221,300 — assuming the national figures can be applied to Iowa in 1988-89.

Another way of looking at patterns across groups is ratios (rather than differences). Nationally, the ratio of average lifetime income for dropouts to that of graduates is

$$\frac{\$601,000}{\$861,000}$$

or 0.698 for males, and

$$\frac{\$211,000}{\$381,000}$$

or 0.554 for females (ibid.). The average ratio of dropout to graduate lifetime income is

$$(.57)\ (.698) + (.43)\ (.554)$$

or 0.636 for the state of Iowa, assuming the national ratios given above hold for this state in 1988-89. Thus, dropouts sacrifice about one-third of their personal income over their lifetimes.

> [Note: This assumption might be more reasonable than the assumption of constant differences, since inflation will affect differences more than ratios. For example, a 50% inflation factor applied to incomes of $1,000 and $4,000 yields $1,500 and $6,000, respectively. The ratio of 4:1 is unchanged under the inflated incomes ($6,000 divided by $1,500 equals $4,000 divided by $1,000), but the original difference of $3,000 is inflated to $4,500 ($6,000 minus $1,500). Since Iowa is a medium income state, the national statistics — both differences and ratios — should hold fairly well. Ratios are preferred in order to control for inflation, since the national figures are about ten years old.]

The average yearly income in the state of Iowa in 1988 is $20,763 — the most recent income data available (Department of Revenue and Finance, State of Iowa, 1989).

Applying the dropout/graduate lifetime income ratio (0.636) to this figure, one obtains

(.636) ($20,763)

or $13,205 — the estimated average income of dropouts in the state of Iowa in 1988. Assuming a 45 year working lifetime for the dropouts and graduates, this yields an estimated loss in personal lifetime income of

(45) ($20,763 - $13,205)

or about $340,000.

The tax rate for an income of $13,205 in Iowa is estimated to be about 2.5%. This yields an estimated state tax of about $330. The average state tax paid in Iowa in 1988 was $689 (per individual). The loss to the state treasury which could be attributed to the reduced revenue payments of all 5,652 dropouts in Iowa in 1988-89, is therefore

(5,652) ($689 - $330)

or $2,029,068. Over the working lifetime (about 45 years) of the average dropout and graduate, this loss to the state treasury becomes

(45) ($2,029,068)

or $91,308,060 — about 91.3 million dollars.

This figure may be viewed as an "opportunity cost" — the amount of potential increase to the state treasury if all dropouts were educated to high school completion. This revenue enhancement would not come without a price tag. The state cost to educate a pupil for the 1988-89 year was $2,683, according to the Iowa Department of Education. Based on dropout figures for the state of Iowa, broken down by grade level (year the person dropped out), the average dropout in 1988-89 would need about 2.44 years of additional schooling to graduate (Iowa Department of Education, 1990a). Using these figures, the estimated total cost to educate all 5,652 dropouts in Iowa in 1988-89 to high school completion is

(5,652) (2.44) ($2,683)

or $37,000,931 — about 37.0 million dollars. This would be a "one time" cost to the state for these dropouts.

The potential net increase to the state treasury, accumulated over the lifetime of the dropout-turned-graduate would therefore be the difference between the $91.3 million opportunity cost and the $37.0 million total state cost for educating the dropouts — about 54.3 million dollars. This estimated net increase to the state treasury in 1988 dollars is the net gain due to educating all of the previous year's dropouts to high school completion. This amount would be accumulated over the working lifetimes of the dropouts-turned-graduates. This works out to be about 1.2 million dollars per year.

> [Note: It may be argued that not all of the above loss in personal income ($340,000) and state revenue ($91.3 million) is due to the educational status of the individuals concerned, namely that of "dropout." It may be due to other factors such as ability, socioeconomic status, race, etc. Regarding ability, educating dropouts to high school completion should improve their ability or skill level. The effects of SES and race may be more difficult to overcome — due to bias and discrimination which still exist to some degree. However, the $689 average state tax payment for Iowans in 1988 includes payments made by dropouts as well as graduates. This figure would surely be higher if only graduates were included. Hence, the above figure for loss in state revenue might actually be conservative.]

On the other hand, it is probably overly optimistic to assume that any program to

educate all such dropouts to high school completion would be 100% successful. However, even if it were only 50% successful, this would result in a net gain for the state treasury. Moreover, it would surely result in other types of savings, such as reduced welfare dependency, reduction in number and severity of crimes, as well as gains in revenue from increased productivity. (See Cost Factors 2, 3, and 5.)

Cost Factor 2: The Increase in the Welfare Burden Due to Higher Unemployment Rates

The second type of cost factor is that of the increased welfare burden due to dropping out of school. Though state statistics are not available on unemployment levels for dropouts, national statistics tell us that dropouts tend to have unemployment rates which are about twice those of graduates (U.S. Bureau of the Census, 1987). Iowa's unemployment rate averaged about 4.5% during the first six months of 1990 (Department of Employment Services, 1990). Assuming the national unemployment ratio of 2:1 holds in Iowa, the dropout unemployment rate is estimated to be 9.0%.

The estimated cost of increased welfare payment of the 5,652 dropouts in 1988-89 is:

$$(5{,}652)\ (.090 - .045)\ (\$795)\ (12)$$

or $2,426,404 — about 2.4 million dollars per year. This assumes that all unemployed dropouts are receiving some form of public assistance which averages $795 per month — the state average of ADC (Aid to Dependent Children), food stamps, and Medicaid (Source: Department of Human Services, State of Iowa).

If, in addition, it is assumed that educating all dropouts to high school completion would result in a reduction in the unemployment rate to that of the general population of Iowa in 1990, the above cost figure can be converted to a savings for the State of Iowa — and the Iowa taxpayers. Thus, it is estimated that about 2.4 million dollars could be channelled into other programs, e.g., dropout prevention, or into deficit reduction.

> [Note: This estimate is also probably very optimistic, since it assumes the dropout education program to be 100% successful. A program which is only 50% successful would save the state $1.2 million. On the other hand, the actual unemployment rate for dropouts in Iowa may be greater than 9.0% and the average payout to dropouts may exceed that of the population at large ($795). Thus, the savings could be even greater than those estimated in the above calculations.]

Cost Factor 3: Increased Risk of Incarceration

Dropouts are more likely than graduates to be in trouble with the authorities. The tenth most popular reason for dropping out of school, given by those who were motivated to return to an alternative school, was that "discipline and punishment were unfair to me" (Morley, 1989). About 43% of the dropouts who return to an alternative school in Iowa were apparently involved in disciplinary actions (which they felt were unfair) prior to dropping out of school (ibid.). The percentage for dropouts who do not return to school might be assumed to be as high or higher.

Such interactions with school authorities are indicative of a propensity for behavior which may later lead to incarceration. In Iowa in May of 1990, there were 1,252 inmates in Adult Corrections Facilities with less than a high school education, out of a total of 2,511, excluding those with GEDs (1,167) and whose educational level was unknown (119) (Source: Iowa Department of Corrections). Thus, the proportion of inmates who are dropouts out of the total number whose educational level is known (excluding GEDs) is

$$\frac{1,252}{2,511}$$

or 0.499 — just under 50%.

The relative risk (R) of incarceration for dropouts compared with graduates may be computed as follows:

$$R = \frac{P \text{ (incarceration given that person is a dropout)}}{P \text{ (incarceration given that person is a graduate)}}$$

$$= \frac{P \text{ (dropout given that person is incarcerated)} / P \text{ (dropout)}}{P \text{ (graduate given that person is incarcerated)} / P \text{ (graduate)}}$$

$$= \frac{(.499) / (.15)}{(.501) / (.85)}$$

$$= 5.64,$$

where "P ( )" denotes the probability of the event in the parentheses. This follows by Bayes' theorem from probability theory (e.g., Kazmier & Pohl, 1984). Thus, dropouts are about 5.6 times as likely to become incarcerated as graduates. This assumes that the probability of a randomly selected student in grades 7-12 in Iowa becoming a dropout is 0.15, i.e., about 15% of 7th grade students in Iowa drop out before completing high school. A risk of 5.6 may be compared with the risk of developing lung cancer from smoking cigarettes or the risk of contracting AIDS from having unprotected sexual intercourse with someone whose HIV status you do not know — both, reportedly, around 10 times that of individuals who do not engage in those activities.

> [Note: The dropout rate may be somewhat inflated due to students' re-entering after dropping out the previous year. A fairly liberal estimate of this adjustment is 5%, which brings the dropout rate down to 10% (R. Morley, personal communication, September 1990). Using this figure, i.e., P(dropout) = 0.10, the relative risk of a dropout becoming incarcerated becomes 8.96, which is even greater than the previous estimate.]

GEDs were excluded from these calculations because it wasn't clear just how they should be classified if they were to be included. Some may have obtained their GEDs while they were incarcerated. Moreover, there is no general agreement concerning whether or not the GED is equivalent to a high school diploma. For example, some branches of the U.S. military do not presently accept the GED in place of a diploma. If all GEDs were assumed to have been obtained prior to the recipient's incarceration and if the recipient of a GED is considered to be the equivalent of a high school graduate, the risk of incarceration for dropouts compared with graduates works out to be 2.92. Thus, even if we include the GEDs as graduates, dropouts are nearly three times as likely to become incarcerated as graduates.

The above statistics on incarceration are critical to any analysis of cost of dropping out of school. The cost of keeping a person incarcerated for one year in Iowa in 1990 is $18,506 (A. Hills, Iowa Department of Corrections, personal communication, September 1990). In contrast, according to the Iowa Department of Education, the state cost to educate a student for one year is presently $2,978. Educating a dropout the estimated average of 2.44 years to high school completion would cost $7,266 — less than 40% of the cost of incarceration of a prisoner for one year. Of course, the cost of incarceration doesn't include court costs, damage to property, loss in productivity, increase in insurance rates, loss of human life, incapacitation, and/or hospital costs for the victim due to the criminal act. Levin (1972) estimated that as much as 25% of all costs associated with

criminal activity could be attributed to undereducation (not completing a high school education).

Cost Factor 4: Deceleration in Human Growth and Potential

The costs in terms of human growth and potential include the following:

1. lower cognitive skill level;
2. reduced options to economic progress;
3. restricted social network.

Many dropouts cannot read a map or perform calculations necessary to balance a check book (National Center for Educational Statistics, 1987). They have fewer options to programs which promote economic progress. For example, post-secondary educational institutions and the military both require a high school diploma or equivalency (GED). Proportionately speaking, business and labor have invested very little to date in training their employees and tend to select the best among these for the training and mentoring that is done. Those with the least amount of education or ability (in math and reading) are often discounted or passed up as new opportunities arise (Iowa Department of Education, 1990b and U.S. Department of Labor, 1989b).

The dropout's social network is likely to become restricted to others of similar educational status. The topics of social discourse between dropouts and graduates will naturally become fewer as the educational gap between them widens. Since conversation and dialogue are important for social and human development, dropouts will likely be stunted in this regard, *inter alia*.

Cost Factor 5: Reduced Sense of Control over One's Life

Dropouts project a more external "locus of control" than do graduates (Wehlage & Rutter in Natriello (Ed.), 1987). In other words, dropouts have a reduced sense of control over conditions which affect their lives. Things happen to them which they feel they cannot control. They tend to be more likely to feel that luck is more important than hard work in obtaining success in life.

This cost could have been included under Cost Factor 4. However, the implications of this result concerning locus of control may be somewhat different than those of human growth and potential. For example, a person with a reduced sense of control over her/his life might be less likely to become involved in the political process. In addition, he/she might be less likely to participate in volunteer activities or to take responsibility and initiative in the work place. A person with less feeling of control over her/his environment will probably be less likely to participate in activities to change that environment. This cost could thus manifest itself in the reduction of an individual's productivity, as measured by citizenship and volunteerism, as well as performance in the work place.

In all, these five costs of failing to educate our youth to high school completion (and hopefully, beyond high school) provide a compelling case for social innovation. These costs can be turned into savings or gains in state revenues, with appropriate and effective social programs. If viewed over the lifetime of the student, these savings may be quite impressive — both in quantitative and human terms.

CHAPTER 3

THE RESEARCH METHODS

Utilization-Focused Research: A Practical, User-Oriented Approach

In order to maximize the use of the results of this study, a "utilization-focused" approach, championed by Michael Quinn Patton (1982), was adopted. In this approach, all major information users were identified and organized into task forces to help with the design of the study and the development of the instruments. The utilization-focused approach as applied to this study of the productivity of alternative school graduates in Iowa, is diagrammed in Figure 4. With this approach, the following outcomes are likely:

1. Questions deemed important to information users will be posed.
2. Instruments will include these questions and will be developed with a format and language appropriate to the subjects.
3. Validity, reliability, and utilizability of the data should be high.

Meetings were held with representatives of the Area Education Agencies (AEAs) in Iowa and the Job Training Partnership Act (JTPA) employment coordinators. The primary task force consisted of members of the Iowa Association of Alternative Schools (IAAS). Members from the Fort Dodge and Waterloo alternative schools and the representative from the University of Iowa were particularly active in this task force. Their input was crucial in defining the parameters of the research, posing the specific questions to be studied, and in the development of the survey instruments.

The Productivity Conference

In February of this year, experts from various segments of the economy were invited to attend a conference in Des Moines on productivity and the alternative school graduate. The participants included leaders from private enterprise, labor, state government, academe, and consulting. The participants included:

Mr. Aaron Doolin, JTPA Coordinator, Cedar Rapids

Mr. Stan Eckert, Industrial Union Council and union leader at Firestone, Des Moines

Ms. Mary Finn, President of CHART Services, Ltd., Des Moines

Mr. Howard Flatt, Building and Construction Trades Council, Des Moines

Mr. Tom Glenn (moderator), JTPA/Labor Liaison: South Central Iowa Federation of Labor/AFL-CIO, member of state school board, Des Moines

Dr. Charles Greenwood, Associate Dean of the School of Education, Drake University and Founder and former Director of the Greater Des Moines Education Center (first alternative school in central Iowa)

Mr. Oliver Himley, Bureau Chief, Iowa Department of Education, Des Moines

Mr. Bill Hood, Deputy Regional Administrator, Department of Labor, Kansas City

PRODUCTIVITY OF ALTERNATIVE SCHOOL GRADUATES: 1987-89
UTILIZATION-FOCUSED RESEARCH

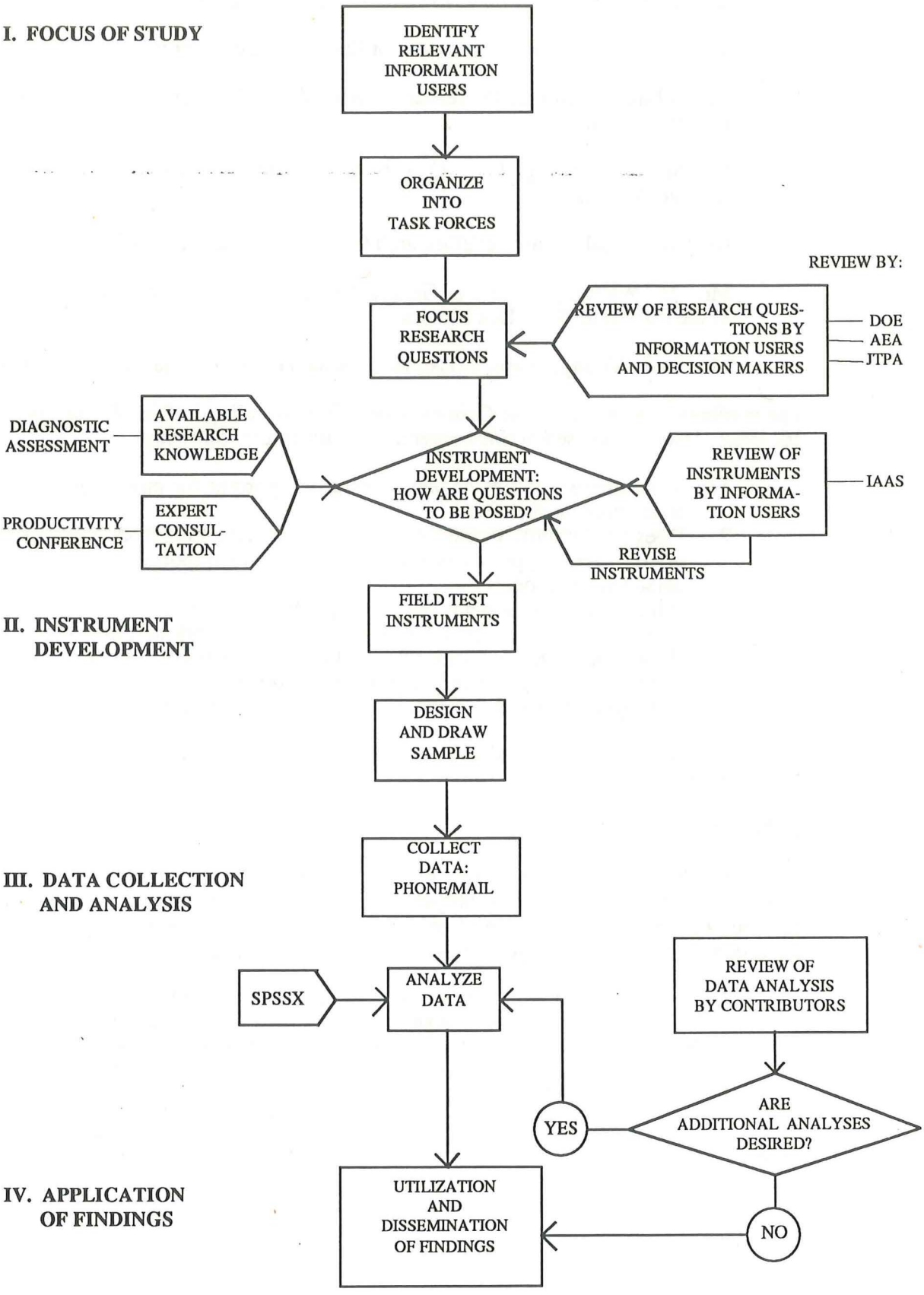

Figure 4. Flow Diagram of the Study.

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The conference was held in the Grimes State Office Building in Des Moines, on February 26, 1990. Issues discussed at this conference included the following:

1. What characteristics or behaviors are important for employees in becoming productive workers?
2. Does productivity in school have anything to do with productivity in the work place? What types of skills or behaviors are important to assess while the person is in school?
3. What are the components of being a productive *citizen?*
4. Should we have the graduates assess their own work in terms of productivity? How should they be assessed (questions and format)? Should we measure the degree of "congruence" or agreement between the graduate's and her/his employer's assessments and, if so, how can this be accomplished?

The conference was highly productive and very helpful in developing the final form of the survey instruments.

Definitions

Productivity is defined here as a multi-dimensional construct consisting of the *output* of an individual in various projects or activities. This is an extension of the common economic definition — the state of being engaged in the creation of economic value, i.e., the production of goods and services — to activities other than those purely economic.

[Note: The technical definition of productivity is output divided by input or cost, e.g., GNP divided by the labor hours consumed to produce it. Input is not directly incorporated in the definition used here. Thus, "output" might have been a more technically correct term. We shall use the (extended) common economic definition and hope that this will not be confusing to those familiar with the technical definition.]

The following *components* are included in the definition of productivity used in this study:

1. income generated by employment
2. post-secondary education
3. volunteer activity

4. participation in the political process
5. homemaking/child rearing
6. talents and skills not used in job
7. public assistance involvement
8. penal system involvement

The first six components are positively associated with productivity; the last two are usually considered to be negatively related to productivity. For example, post-secondary education is likely to increase a person's marketability and her/his ability to perform in the work place (positive), while involvement in public assistance generates no output, *per se*, and requires input in the form of government expenditure (negative).

The above eight components include economic factors (1 and 2, 7 and 8), as well as social (3), political (4), family (5), and personal growth (2 and 6) factors of productivity. It is seen to provide a more informative and complete picture of a person's productivity than the usual government index (GNP divided by cost to produce it).

The following *behaviors* were determined to be critical in assessing the productive propensity of individuals:

1. punctuality
2. work attendance
3. responsibility
4. quantity of work
5. quality of work
6. customer orientation
7. initiative
8. flexibility
9. cooperation
10. ability to learn
11. potential for advancement
12. verbal communication skill
13. written communication skill
14. nonverbal communication skill

Although these behaviors were developed with the work place in mind, they are also appropriate for assessing productive propensity with respect to the positive, non-employment components of productivity (components 2 through 6). For example, with regard to participation in the political process, e.g., voting in elections, punctuality is important in order to get to the polling place before it closes, responsibility is important in making the decision to vote, initiative is required to register to vote, ability to learn is important for educating oneself about candidates and issues, and verbal communication skill is required for discussing these issues with others, as well as communicating with the person in charge at the polling place.

The above 14 behaviors may be useful in assessing the development of productivity in students. Presently, the only behaviors assessed in school are punctuality, attendance, and cognitive skills. Whether assessing the productive propensity of students or employees (in graduate follow-up studies like this one), it is important to assess these behaviors diagnostically — so that information on specific development needs can be obtained. This requires careful instrument design and development.

Instrument Design and Development: Graduate Interview Form and Employer Questionnaire

Two instruments were developed — the graduate interview form and the employer questionnaire (for mailout). The graduate interview form included questions concerning

the eight components of productivity and the 14 behaviors, as well as questions concerning the graduate's feelings about the alternative school attended. It also included background questions concerning the graduate's marital status, age, living arrangement, parents' education, etc. The employer questionnaire included questions on the behaviors, as well as background questions about the company or organization and about the graduate's job. (The two instruments are presented in Appendixes A and B.)

The instruments were reviewed by a testing and measurement expert (Dr. Dale Foreman). The interview form was tested by the interview process. The employer questionnaire was field tested by administering it to twelve pairs of supervisors in a variety of organizations in the Des Moines metropolitan area. These included a hospital, restaurants, a high school, a nursing school, an asbestos-removal firm, and the National Guard. These supervisors were asked to use the instrument to evaluate an employee over whom they both had supervision. The degree of agreement between the supervisors of each employee was considered a measure of the reliability of the instrument. The proportions of agreement were significantly above those expected by chance in most of the questionnaire items. (See Appendix C for the statistical data.) Comments from the participating supervisors indicated that the instrument had content validity.

The format of the items measuring the behaviors of productivity is multiple-choice with diagnostic descriptors. This format is preferred over Likert or numerical rating formats since it provides greater information for formative assessment. For example, consider the item which measures the graduate's responsibility (item 5 on the employer questionnaire):

ITEM: How would you rate the graduate in terms of RESPONSIBILITY taken in his/her work? (check one)
____ often breaks company's rules
____ abides by rules; does his/her job
____ takes responsibility for quantity and quality of his/her work

Ideally, most employers will select the third option ("takes responsibility . . ."). This option describes an internalized sense of responsibility with respect to both quantity and quality of work produced. If a large proportion of employers are selecting the second option, this indicates that their employees are following orders and doing their jobs. Their work is "just a job" and they have probably not internalized a sense of responsibility thereto. A large proportion of responses to the first option would indicate a serous lack of responsibility and discipline. The response data can thus be used to diagnose weaknesses and strengths — the touchstone of formative assessment.

Sampling Design: Population, Target Sample, Respondent Sample, and Employer Subsample

The population consisted of all graduates from twenty alternative schools in Iowa for the three year period from 1987 through 1989. These were schools which were independently run, provided the opportunity for earning a diploma, focused on educating the high school dropout, and required some attendance. Typically, these schools were more loosely structured than regular schools, allowing students to learn at their own pace, but which maintained the basic structure of a school. Thus, GED preparation programs, "schools within a school," and alternative schools with no attendance requirements were excluded from this study." The sampling frame (population) consisted of about 1,230 graduates. The majority of the graduates were from schools in central and eastern Iowa. (See Figure 5 and Appendix D.)

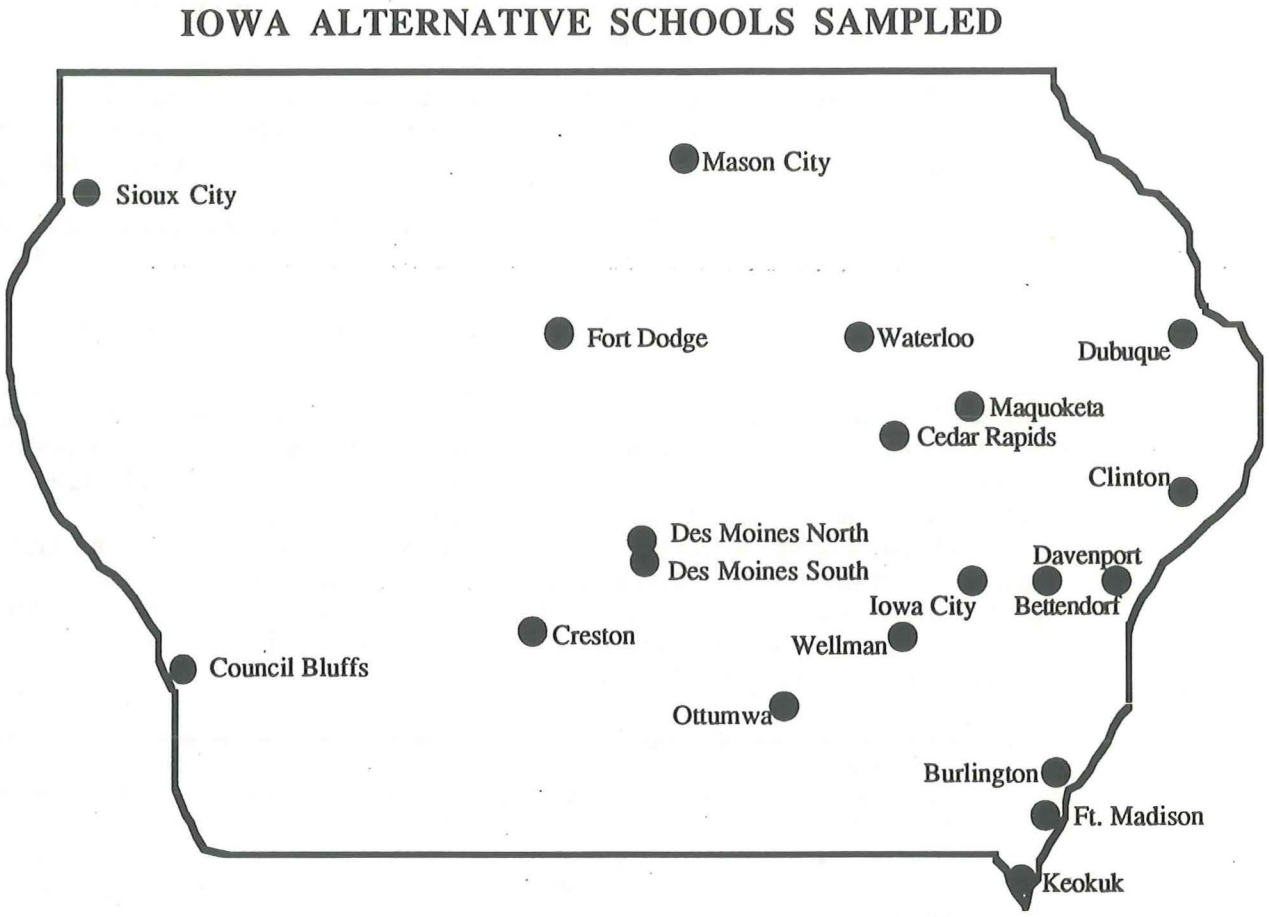

Figure 5. Map of Alternative Schools Sampled in Iowa.

A systematic random sample of the graduates was selected using every third graduate. A "random start" was selected between 1 and 3, inclusive, and every third number was selected thereafter. (Each graduate was assigned a serial number.) This provided an exact representation of the schools in the population. Moreover, this method of sampling is comparable in precision to simple random sampling and is much easier to apply.

The target sample consisted of 413 graduates, distributed over the 20 cooperating schools. The telephone interview process yielded 206 in the respondent sample — about a 50% response rate. Of the respondents, 55.8% were female. This compares with 54.6% females in the target sample — a deviation of only 1.2%, which is not statistically significant. Moreover, schools were represented fairly proportionately. For example, 16 graduates from Des Moines North Alternative School were interviewed — 7.8% of the 206 respondents. This compares with 30 graduates selected from that school in the target sample — 7.3% of the 413 sampled. Such deviations were also not statistically significant. Thus, although nonresponse bias is a possibility, the sample of respondents is representative of the target sample (and thus, the population) with respect to both sex and school attended, variables which will be seen to be important in several of the components of productivity considered in the study. (See Chapter 4.)

[Note: The sample of respondents (206) includes about 10 parents or relatives of graduates who were not available by phone. This included graduates who were on ships (in the Navy) or overseas and one who was partially disabled in an auto accident. It was

felt that such data, though less complete than that obtained from the graduate, were sufficiently reliable to use as partial information.]

Of those graduate respondents who had income-generating employment (full-time, part-time, or military), 36 gave written permission to their employer to release information regarding their productivity. Thirty of these employers responded to a questionnaire mailout. Formal permission was required since the employers' responses were linked to the graduates. This was done in order to study and measure the congruence between the graduate's self-assessment and the employer's assessment of the graduate's productivity.

Data Collection Procedures: The Telephone Interview and Questionnaire Mailout

The majority of the telephone interviews of the graduates were conducted by the author of this report. Others were conducted by interviewers trained in telephone survey methods, using a packet of materials supplied by Dr. Paul Lavrakas of Northwestern University. This included training in the use of call-sheets, fallback statements, and techniques for dealing with refusals or difficult respondents (Lavrakas, 1987).

Questionnaires were sent to the employers of the 36 graduates who granted their permission for the release of employer information on their productivity, along with a cover letter. The questionnaires were number-coded in order to link the employer's responses to a graduate (since no names were put on the questionnaires). The graduates were also sent a questionnaire for their perusal.

[Note: In one case, the employer wrote on the questionnaire that the graduate no longer was employed in their company. In another, the graduate apparently passed along her/his questionnaire to the employer, since it came back without a number code. Thus, there are effectively 29 responses which could be used for descriptive statistics concerning the employers' assessment of the graduates' productivity and 28 employer-graduate pairs of responses which were used to measure the congruence between employers' and graduates' assessments.]

The responses obtained from the graduates during the interviews were recorded on the interview forms. Then this information and the questionnaire data were entered into the Vax computer at Drake University. This data file was later used in conjunction with SPSSX — a statistical analysis package available on that computer.

Data Analysis

Most of the statistical/data analysis consisted of simple frequency distributions, summary statistics, pie charts and bar charts, and crosstabulations. Chi-square tests were applied to statistically assess the effects of JTPA involvement, geographic region, dropout rate, and sex on the various components and behaviors of productivity.

CHAPTER 4

RESULTS OF THE SURVEY

Background Characteristics

The age distribution of the graduates is presented in Table 1 below.

Age	Frequency	Percent	Cumulative Percent
17	1	.5	.5
18	8	4.0	4.5
19	36	17.9	22.4
20	53	26.4	48.8
21	44	21.9	70.6
22	34	16.9	87.6
23	12	6.0	93.5
24	4	2.0	95.5
25	3	1.5	97.0
27	1	.5	97.5
29	1	.5	98.0
31	2	1.0	99.0
36	1	.5	99.5
42	1	.5	100.0
missing	5	----	-------

Table 1. Age distribution of graduates.

The mean age is 20.995, the mode (most frequent value) is 20, and the median (middle value) is 21. Three percent of the sample are graduates over 25 years of age. Most of these older graduates were from an alternative school program where the adult education graduates were included with "traditional" alternative school graduates. Since the number of such students was low and most of the variables studied were categorical (grouped into categories), they were included in most of the analyses.

About 62.2% of the alternative school graduates are single, 24.9% are married, 10.0% are living with a significant other, while 3.0% are divorced or separated. (See Figure 6.)

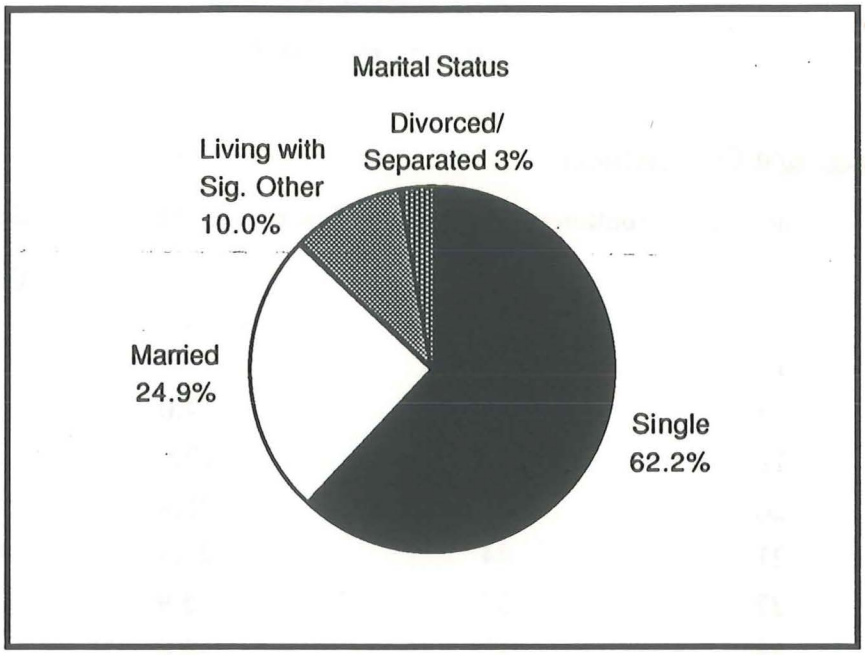

Figure 6. Marital status of graduates.

Perhaps surprisingly, 66.0% of the graduates have parents both of whom graduated from high school or at least one of whom attended college. About 11.9% said "one (parent) has college degree," while 3.1% said "both have college degrees." Only 15.5% said that neither parent had graduated from high school. (See Figure 7.) Moreover, 90.4% said that their parents were employed while they were in school.

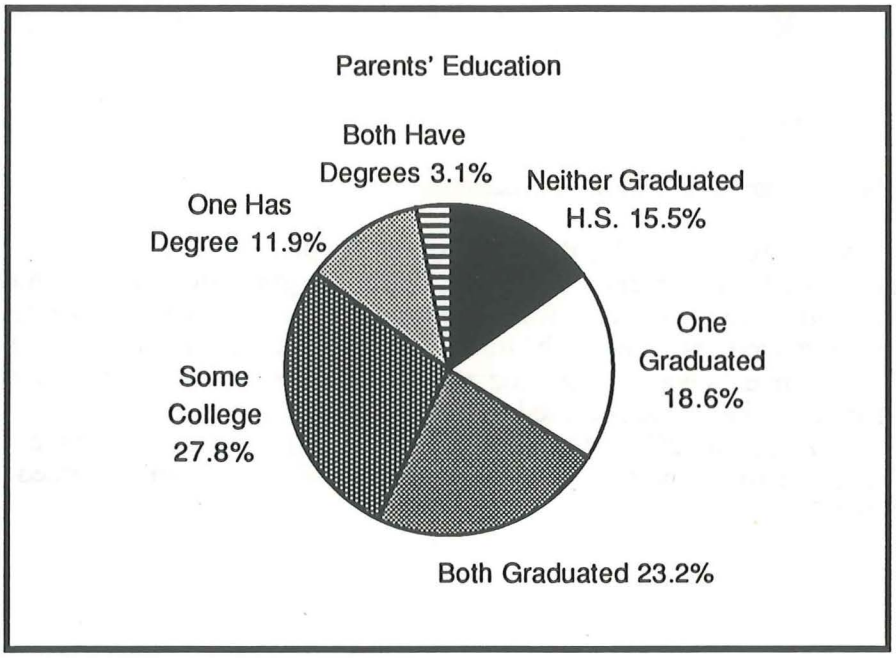

Figure 7. Education of graduates' parents.

As previously noted, about 55% of the graduates were female. About 53% of Iowa

dropouts in 1989 were male (Iowa Department of Education, 1990a). Thus, the alternative schools appear to be more successful in graduating females than they are in graduating males.

Productivity Component 1: Employment

Over half (54.4%) of the graduates indicated that they were full-time employed. another 13.2% said they were part-time employed. Thus, about two-thirds of the graduates were employed at the time this survey was conducted. — either part- or full-time. Another 17.2% classified themselves as homemakers, while 3.4% said they were college students and another 3.4% said they were in the military. This left 8.3% unemployed. (See Figure 8.)

[Note: The one "missing" datum (employment status not known) and one who said she was on pregnancy leave were excluded from these calculations.]

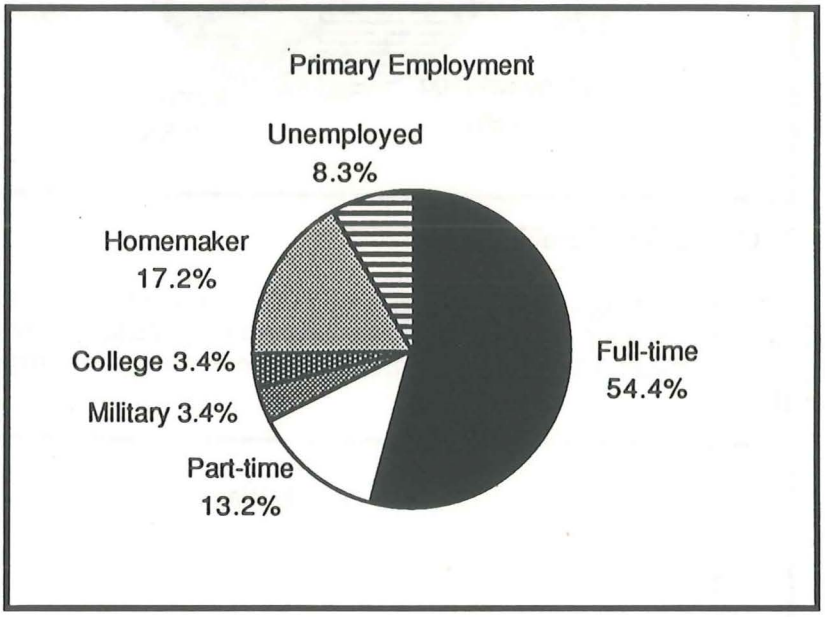

Figure 8. Employment status of graduates.

About 4.3% indicated that they were employed in more than one full-time job (e.g., one full-time and one part-time job). The national average for those working more than one job is 5% (Wright (1989), p. 300). Excluding homemakers, college students, and the person on pregnancy leave (those not employed or actively seeking employment), the rate of unemployment becomes 10.4%. This may be compared with 9.1% for the 16-24 age group projected for the state of Iowa in 1991. This difference is not statistically significant.

The largest category of employment was food services (19.9%), followed by manufacturing (14.9%), clerical (9.2%), human services and maintenance (8.5% each), and business (7.1%). (See Figure 9.)

[Note: These categories were similar to those used in a follow-up study of 1986-87 and 1987-88 graduates of the Des Moines South Alternative High School. Since most of the schools in the present study were also in urban centers, this classification was considered appropriate for this study. The human service area (day care, working with handicapped, etc.) was added as a separate category. "Manufacturing" includes the food processing industries, as well as non-food production industries.]

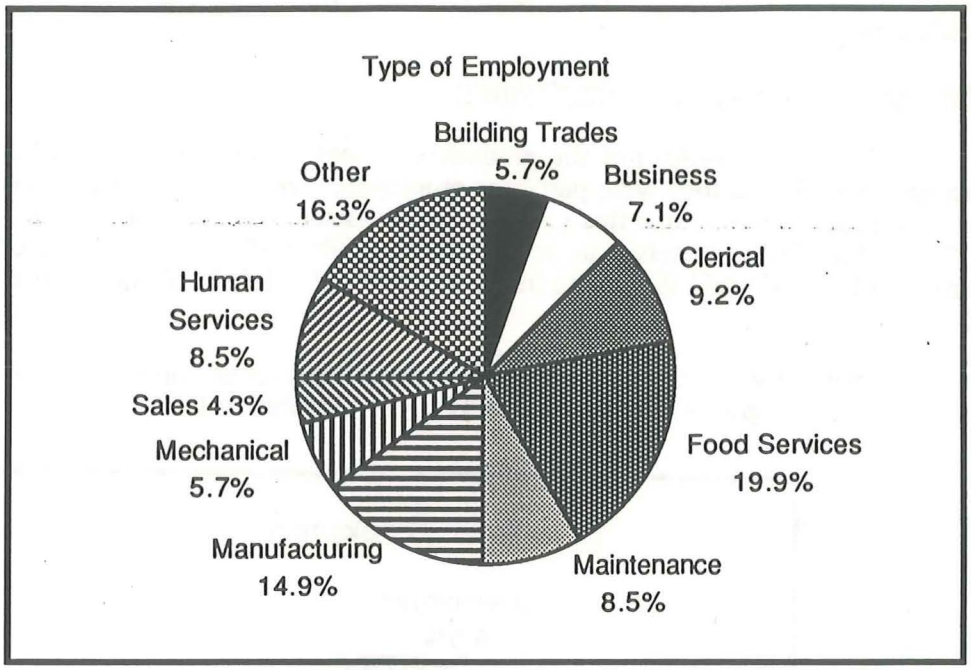

Figure 9. Categories of employment.

Of the 125 wage earners, most — 56.0% — are earning between $5 and $10 per hour, 32.0% are making between $3.85 (minimum wage) and $5 per hour, while 6.4% are making $3.85 or less. On the other hand, 5.6% are earning more than $10 per hour. (See Figure 10.)

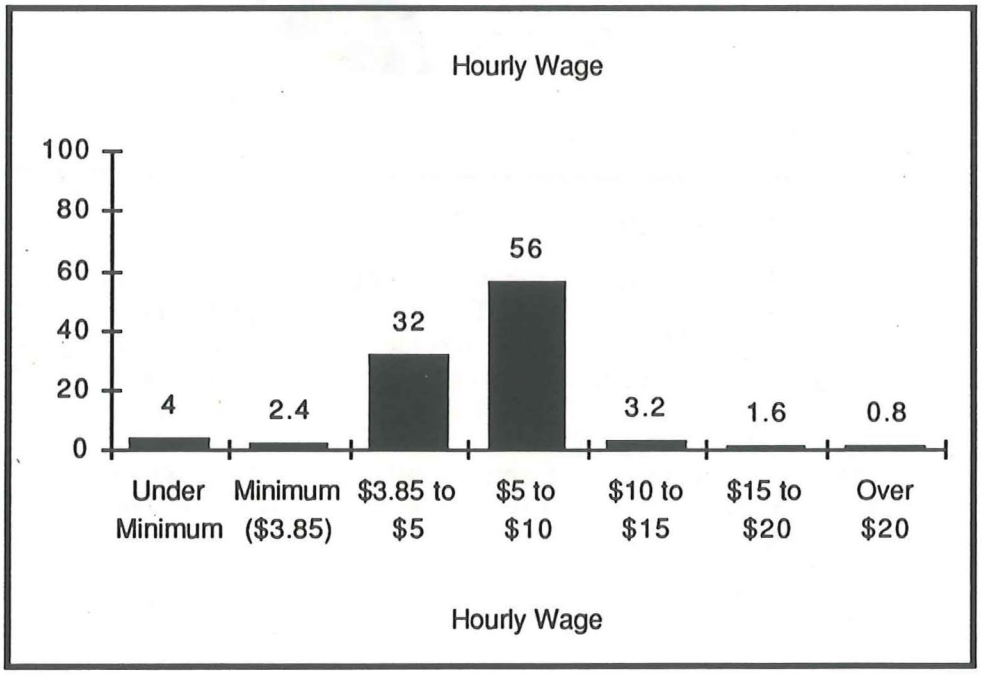

Figure 10. Wages of employed graduates (in percent by wage category).

The wage distribution is broken down by sex and geographic region[1]. These breakdowns are presented in Figures 11 and 12, respectively. Clearly, females are making less than males and the central region (Des Moines) graduates are making more than those in the other regions.

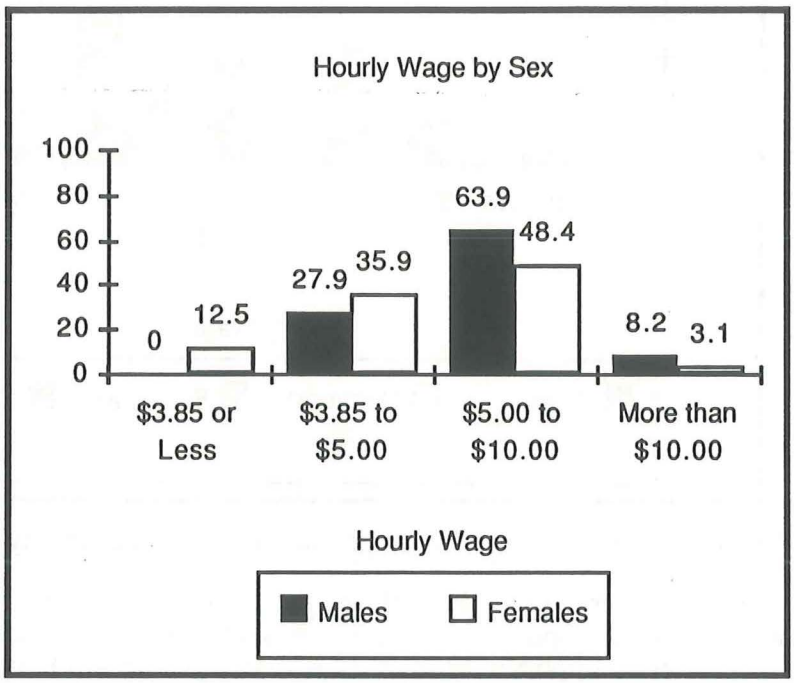

Figure 11. Wages broken down by sex (in percent by wage and sex).

Only 8.3% of the graduates were salaried (as opposed to wage earners). Of these (17), 35.3% were making under $10,000, 35.3% were making between $10,000 and $15,000, 17.6% earned between $15,000 and $20,000, and 11.8% (2 graduates) had salaries in excess of $30,000 per year. (Both of the high salaried graduates were self-employed.)

Over 60% of the graduates who are employed have been on their present jobs for more than 6 months; nearly 40% have been engaged in their present jobs for at least 1 year. The average number of previous full-time jobs is 0.808; the median number of such jobs is 1. The average number of previous part-time jobs is 0.488; the median number of such jobs is 0. These data indicate that graduates are not involved in an inordinate amount of "job hopping." Moreover, graduates who participated in JTPA work-experience programs were more likely to be employed for more than 2 years (34.4%) than those who did not participate in such programs (19.4%). (See Figure 13.)

> [Note: This marginally significant result cannot be explained by age differences between the two groups of graduates. No significant difference was found between the age of JTPA participants and the non-participants in JTPA.]

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[1] Four geographic regions were employed: (1) West (Sioux City, Council Bluffs, Fort Dodge, and Creston), (2) Central (Des Moines North and Des Moines South), (3) Northeast (Mason City, Waterloo, Cedar Rapids, Maquoketa, Dubuque, and Clinton), and (4) Southeast (Ottumwa, Wellman, Iowa City, Davenport, Bettendorf, Burlington, Fort Madison, and Keokuk).

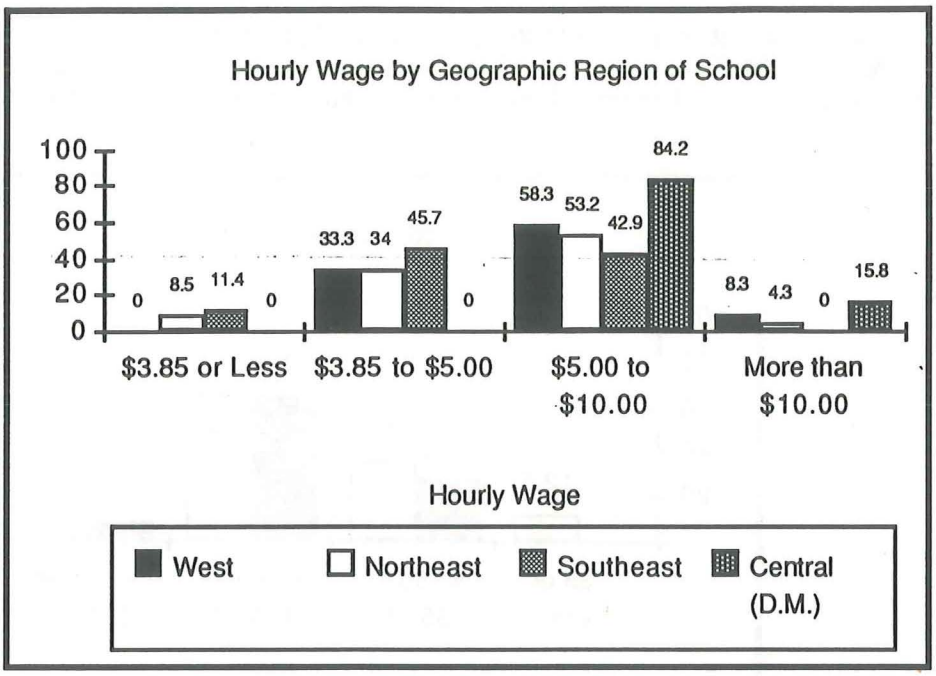

Figure 12. Wages broken down by geographic region (in percent by region).

Graduates were asked about their opportunity for advancement in their jobs. Of those employed who responded (137), 41.6% said there was "considerable" opportunity, 43.8% said "some" opportunity, and 14.6% said "none." Of those indicating either "considerable" or "some," who responded (108), 93.5% indicated that the opportunity was "higher pay," 71.4% indicated that the opportunity was "higher level position," and 43.5% said the opportunity was "educational."

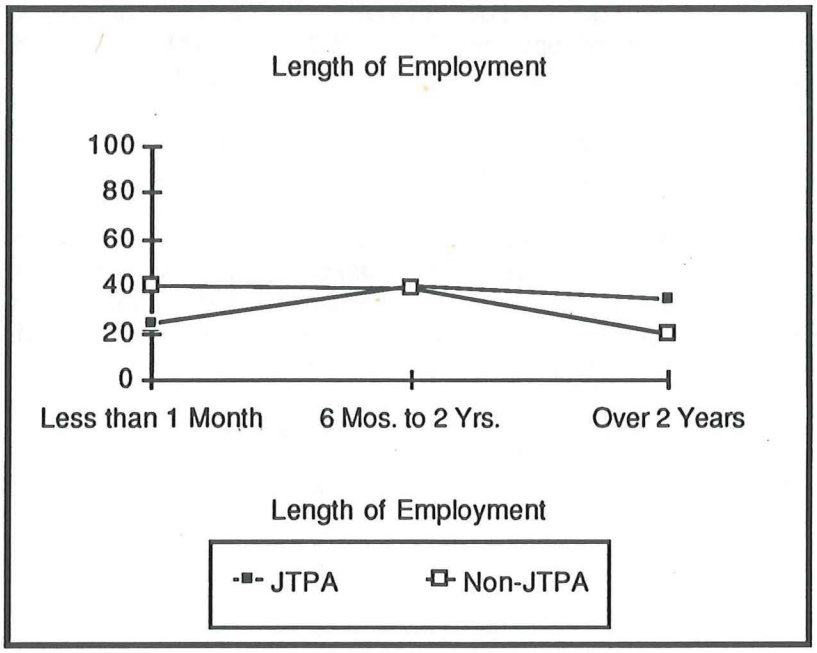

Figure 13. Length of present employment: JTPA participants vs. non-participants in JTPA (in percent by response categories).

Regarding job satisfaction, 45.3% indicated satisfaction with their pay, 28.1% said they were somewhat satisfied, while 26.6% said they were not satisfied with their pay. More satisfaction was indicated in other areas. Specifically, 82.0% indicated satisfaction with their working conditions, 85.6% said they were satisfied with the time of their work (i.e., day or night shift), 84.2% were satisfied with their number of hours, 94.1% said they get along with their co-workers, and 89.9% said they get along with their boss.

Many employers administer performance evaluations of employees' work. Of the employed graduates responding (128), 60.9% said they had been given a performance evaluation. Of these, 87.2% said they received diagnostic feedback on what they were doing that was right and what they were doing wrong, while 93.3% said that the evaluation was "fair."

Productivity Component 2: Post-secondary Education

Forty-five percent of graduates responding (202) said they had completed some part of a post-secondary education. Of these (91), 2.2% have completed more than 2 years of college, 7.8% have completed 2 years of college, 24.4% have completed 1 year of college, 25.6% have completed some college credit (less than a year), 6.7% had special training in the military, 11.1% had regular military training, 14.4% had completed a public and/or private vocational training program, while 25.3% had completed part of such a training program. Moreover, 78.5% indicated that they were planning some type of post-secondary education. (See Figures 14 and 15.)

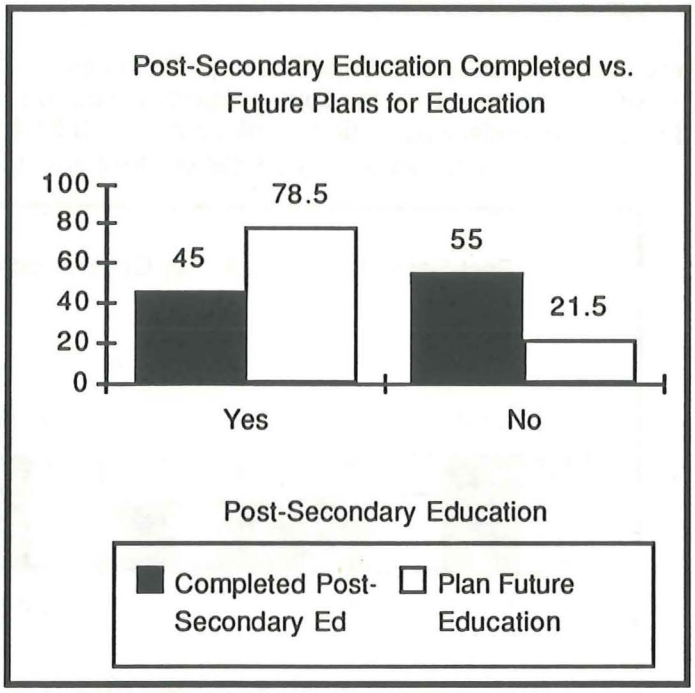

Figure 14. Post-secondary education: Completed some part of program vs. future plans (in percent by response categories).

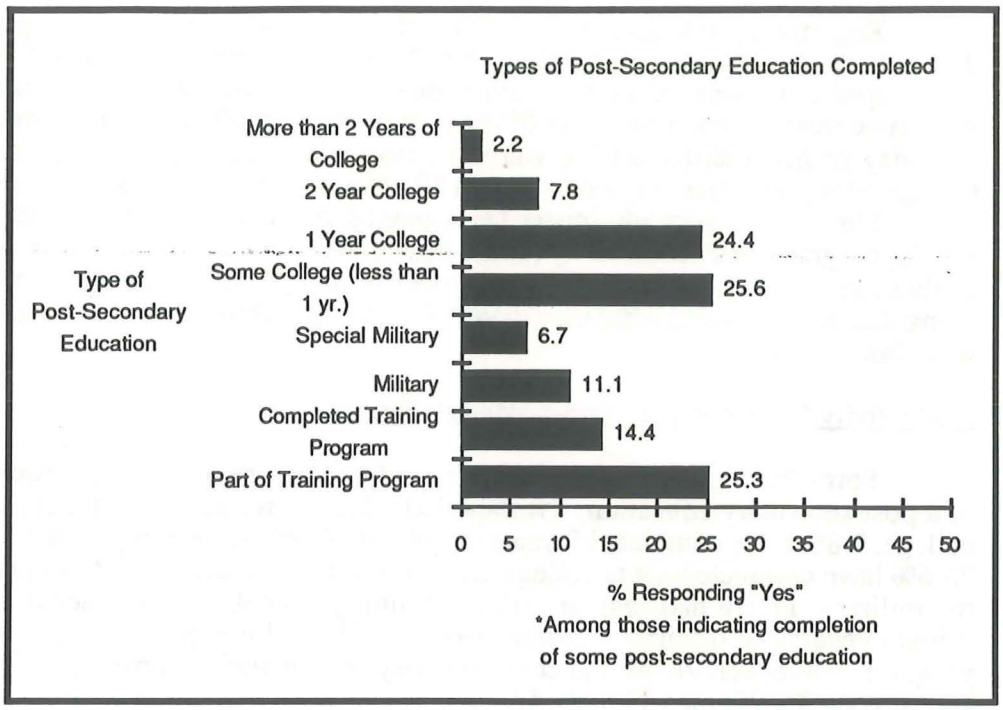

Figure 15. Type of post-secondary education.

There were statistically significant differences in post-secondary education involvement of graduates across the four geographic regions. Western Iowa alternative schools led in post-secondary education involvement, with 63.4% of their graduates having completed some part of a post-secondary education program. (See Figure 16.)

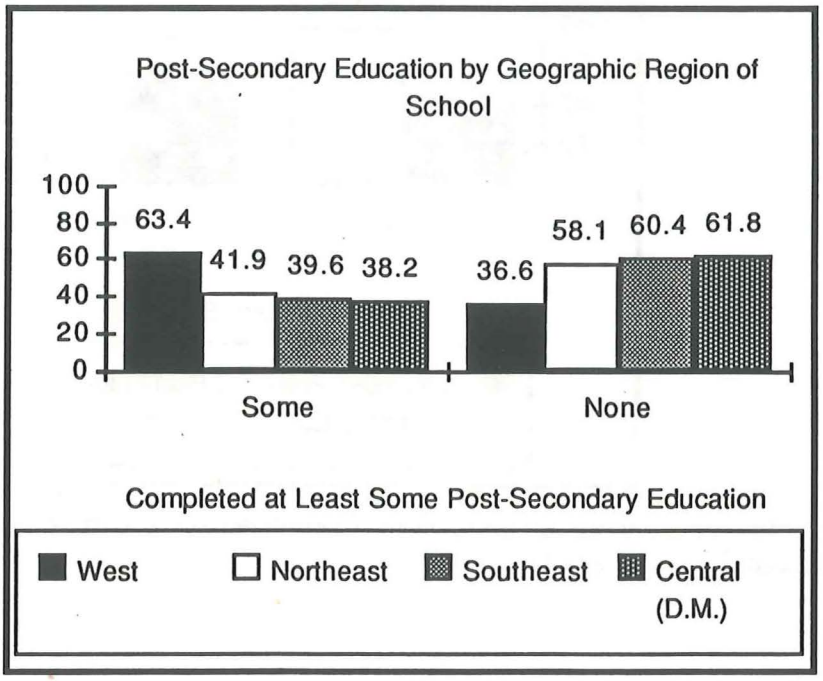

Figure 16. Post-secondary education of graduates by geographic region of school attended (in percent by region).

Productivity Component 3: Volunteer Work

Volunteer activity — service provided freely, without any financial remuneration — has been in short supply in the U.S. for about two decades. Such activity adds to productivity, since it increases the output of services, with the volunteer's time as the only input or cost. Of the alternative school graduates responding (197), only 23.4% answered "Yes" to the question of their involvement in any volunteer organizations or voluntary service activities. Those who indicated that they had helped friends or relatives, but had not been involved in any organized voluntary activity, were not counted in this figure. No comparative data were available for regular high school graduates or the population at large.

Of those answering "Yes" to the question, 6.5% said they were involved in community services, 21.7% said they were involved in church-related activities, 8.7% indicated involvement in school-related services, 6.5% indicated political activity involvement, while 63.0% said they were involved in various other activities, e.g., Big Brother/Sister, Red Cross, and "fixing up old buildings for the poor."

More females said they participated in volunteer work than did males — 28.1% of females and 16.9% of males answered "Yes" to the question regarding such involvement. (See Figure 17.) This statistically significant result may be related, in part, to employment differences between male and female graduates; e.g., 70.0% of males and 42.6% of females are full-time employed, while 12.2% of males and 35.7% of females are homemakers or unemployed.

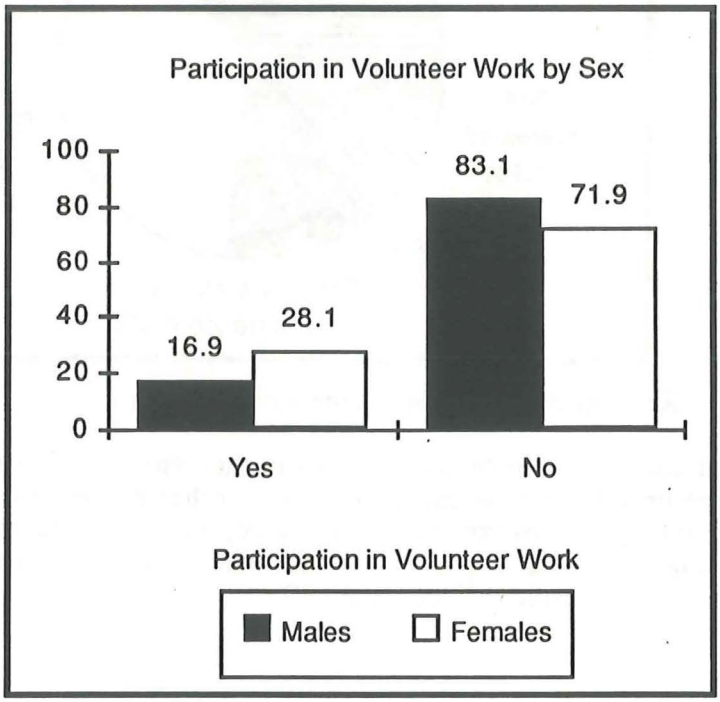

Figure 17. Participation in volunteer work: males vs. females (in percent by response category).

Productivity Component 4: Participation in the Political Process

Only about half of the voting-age population in the U.S. voted in the last presidential election. This percentage has declined fairly steadily since 1960, when 62.8% voted. The percentage of registered voters among the voting-age population has also

declined — from 75.2% in 1960 to 70.9% in 1988 (Wright (1989), p. 92). Thus, in addition to voter apathy, non-registration is an increasing problem in the U.S.

One measure of the productivity of alternative school graduates as citizens of our democracy is the percentage of voting-age graduates who voted in the last election. Excluding those who were not old enough to vote, 32.0% of the graduates voted in the 1988 election. This may be compared with 34.0% of their peer group of 18-24 year olds in Iowa (U.S. Bureau of the Census, 1988 and Iowa Department of State, personal communication, August 1990). This difference (2%) is not statistically significant.

Of those not voting, the most frequent reason given was "not registered" (37.2%). This would tend to confirm the claim that the registration process is not well understood by many entry level voters (Dr. F. Piven, political scientist, MacNeil/Lehrer Newshour, October 15, 1990). (See Figure 18.)

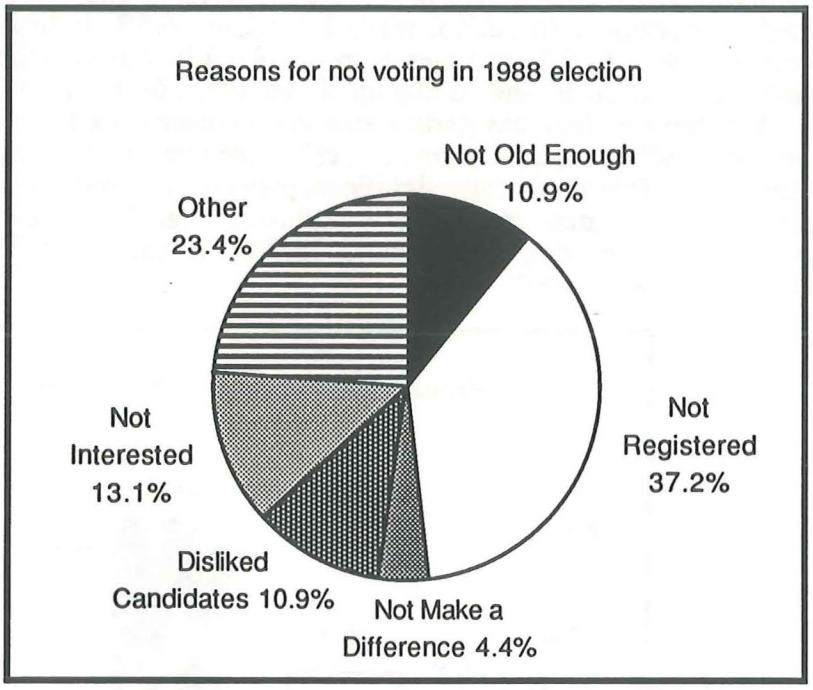

Figure 18. Reasons for not voting in the 1988 election.

Graduates of alternative schools in the central region (Des Moines) were more productive on this component than those in other geographic regions. About 47% of central region graduates voted in the last election. This percentage was very close to the national average for all voters. This difference may be, in part, due to the fact that Des Moines is the state capitol. (See Figure 19.)

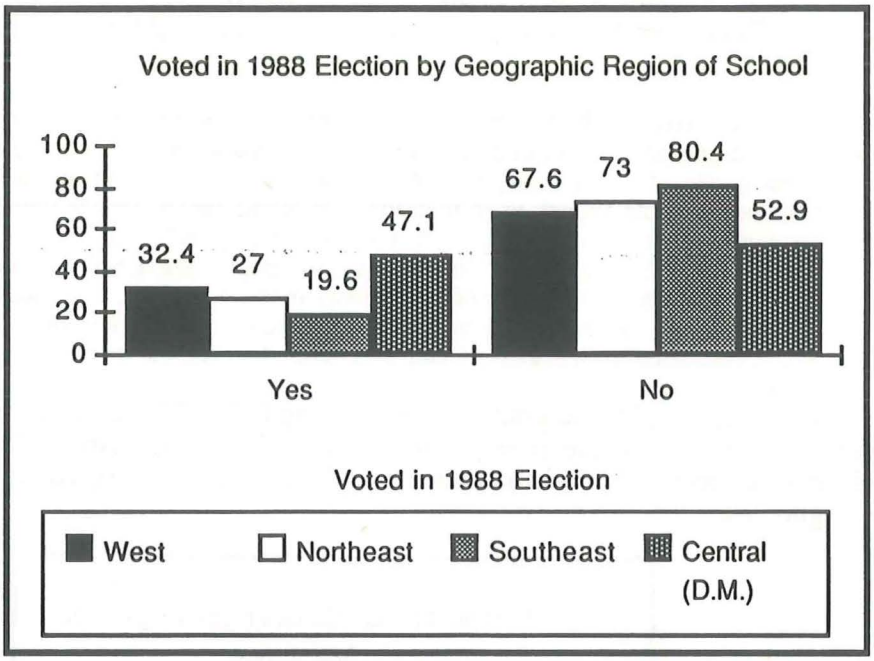

Figure 19. Voting in 1988 election by geographic regions (in percent by region).

Productivity Component 5: Homemaking and Child Rearing

Of the graduates responding to the question on employment (205), 17.1% classified themselves as homemakers. Not surprisingly, all are female. Of these (35), 54.3% were married or living with a significant other, 78.9% of these said their spouse or living partner was working. About one-fourth of the homemakers said they had sought employment. The average number of children living with homemakers is 1.3 and 82.9% have at least one child living with them.

Productivity Component 6: Talents and Skills Not Used in Job

The average tenure in occupations in the U.S. in 1990 is only 6.6 years (Wright (1989), p. 301). Most people change jobs several times over their lifetimes. Those with marketable talents and skills not used in their present job might be considered to have productive potential, beyond their productivity exhibited in their present employment and non-employment components. Perhaps more importantly, these talents and skills are evidence of human development, beyond that required by the market place, family, society, or the political process. Although this is not directly translatable into dollars and cents, it is considered an important part of the productivity picture.

Of those responding (186), 83.3% said they had some talents or skills that were not being used in their jobs. These included possibly marketable skills such as mechanical ability (mostly working on automobiles), musical, writing, math, and computer skills, as well as those unlikely to be marketable such as cake decorating and sports. Of those stating that they had talents or skills beyond those used in their jobs (155), 74.8% said they are continuing to develop these talents or skills and 60.0% feel that they are marketable.

Productivity Component 7: Public Assistance Involvement

The first six components are positive factors in that they involve output considered desirable, albeit at some cost. Public assistance involvement is a negative factor, since no

output, *per se,* is generated, but considerable input (cost) is required to provide this assistance. This input is in the form of government expenditure which, of course, comes from taxes.

> [Note: Although public assistance involvement is considered, generally, to be a negative factor of productivity, it can be positive when viewed in the long term. For example, a single parent with a child may need ADC, food stamps, and health coverage. When the child becomes old enough to go to school, the parent may be able to obtain some post-secondary education or training, so that he/she can eventually exit the welfare cycle and become gainfully employed. In this case, the public assistance involvement was a negative (but necessary) factor of productivity in the short term, but a positive factor in the long term. On the other hand, public assistance involvement over a lifetime, or across generations, is a negative factor in both the short and the long term.]

Overall, out of those graduates responding (197), 22.8% were receiving some form of public assistance at the time of the survey. By comparison, 18.1% of the parents received some form of public assistance while their children (graduates) were in school. (See Figure 20.)

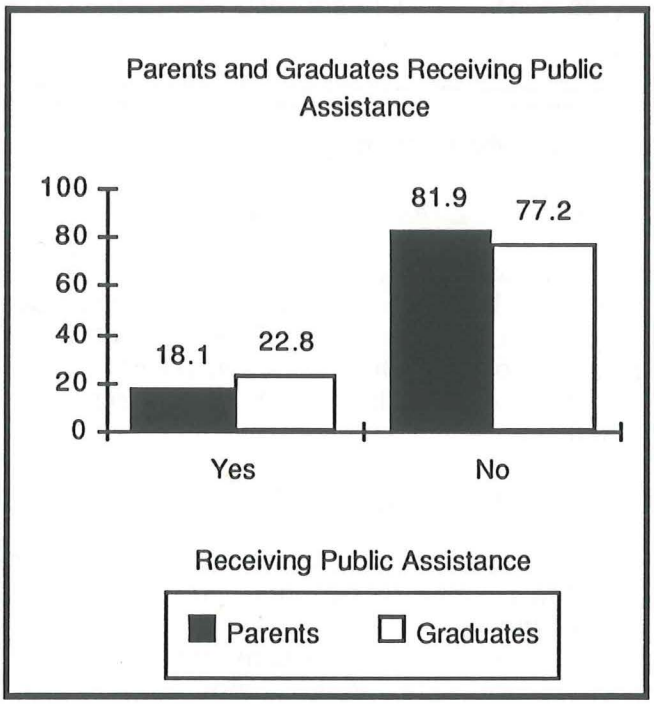

Figure 20. Public assistance involvement: parents vs. graduates (in percent by response category).

Among graduates whose parents were receiving some public assistance while the graduate was in school (36), 72.2% "broke the cycle," i.e., were not themselves receiving public assistance at the time they were interviewed. This is taken as evidence against the hypothesis that involvement in public assistance will be passed from one generation to another with this population. (See Figure 21.)

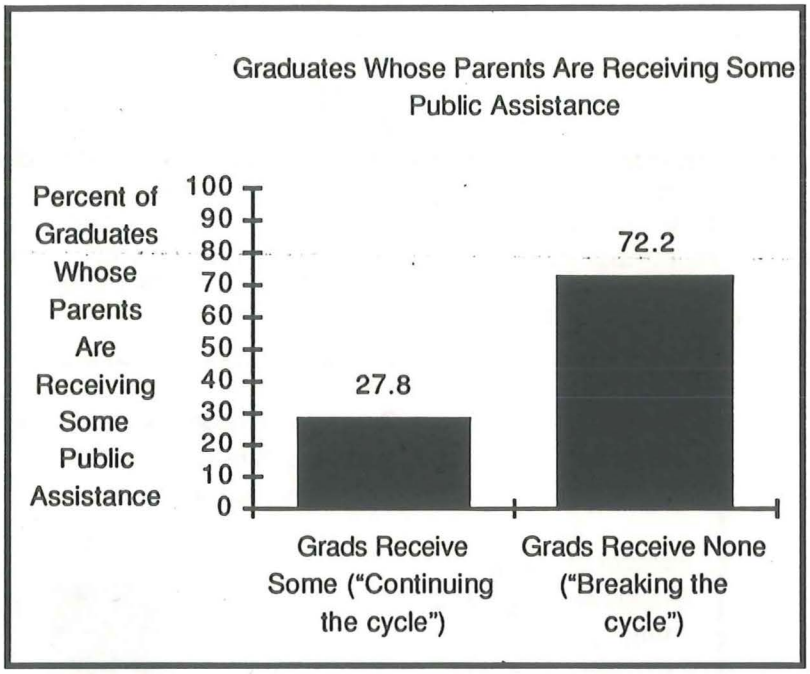

Figure 21. Public assistance involvement of graduates whose parents were receiving public assistance: "Breaking the cycle."

On the other hand, among those graduates whose parents were not receiving any public assistance while the graduate was in school (160), 21.9% "entered the cycle," i.e., were receiving some public assistance at the time they were interviewed. (See Figure 22.)

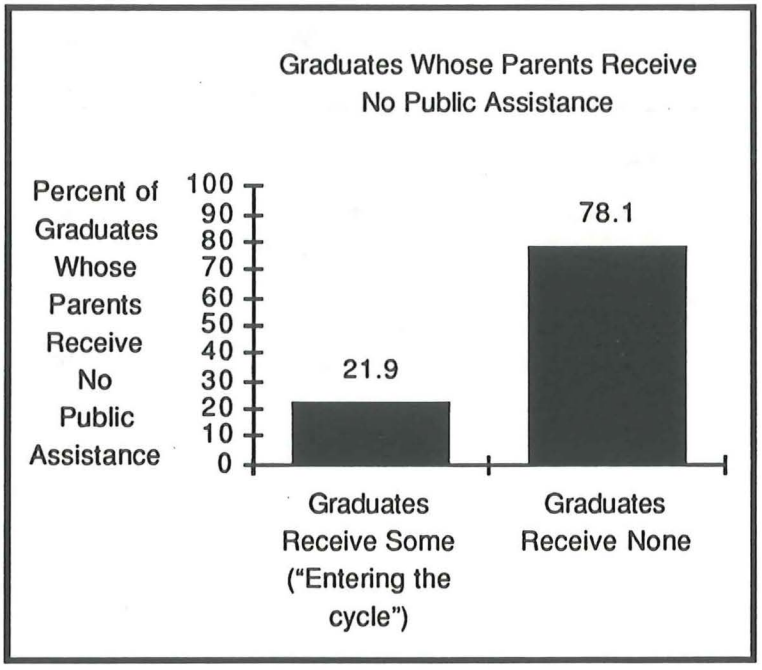

Figure 22. Public assistance involvement of graduates whose parents were not receiving public assistance: "Entering the cycle."

It was suggested that the sex of the graduates might be a key factor in understanding their involvement in public assistance (R. Morley, personal communication, April 1990). A statistical analysis[1] uncovered a marginally significant interaction between graduates receiving public assistance, their parents receiving public assistance, and the sex of the graduate. In particular, females are "entering the cycle" with much greater frequency than males. Among female graduates whose parents were not receiving public assistance (90), 35.6% were receiving public assistance when they were interviewed; among male graduates whose parents were not receiving public assistance (70), only 4.3% were themselves receiving public assistance when interviewed. On the other hand, the percentages of graduates "breaking the cycle" were much closer — 78.6% for males and 68.2% for females. (See Figures 23 and 24.)

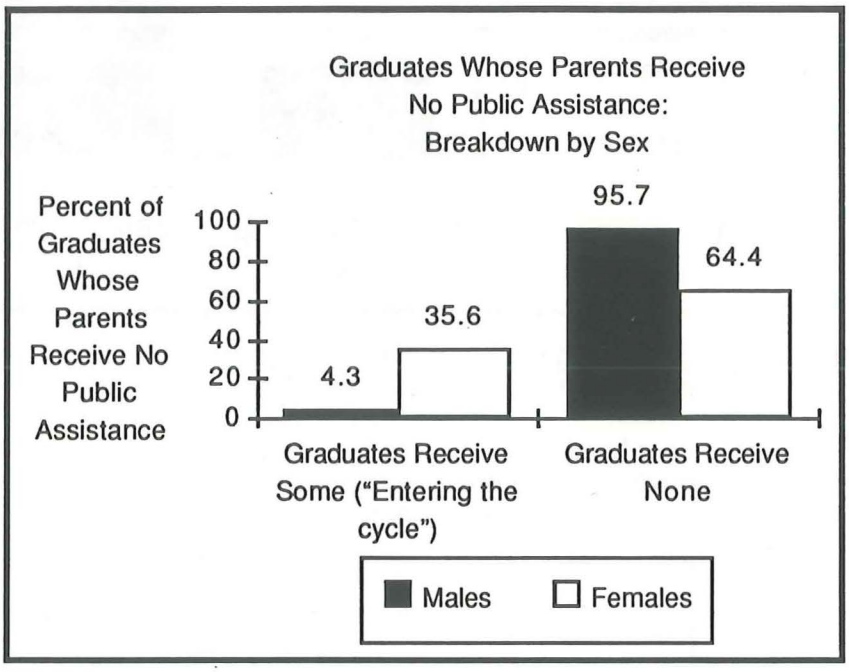

Figure 23. Graduates "entering the cycle" of public assistance: males vs. females.

[Note: The overall percentage of graduates on public assistance is based on the total number of graduates responding to the question — 197. This includes one graduate who was "not sure" if her/his parents were receiving public assistance while they were in school. Thus, the total number of graduates whose parents were receiving public assistance (36) and the total number whose parents were not receiving public assistance (160) sums to 196, one less than the total on which the overall percentage is computed.]

[1] A log-linear analysis using a "logit" model was performed. Graduates receiving public assistance (dichotomous) was the dependent variable, while parents receiving public assistance and graduate's sex were used as independent variables. The SPSSX procedure LOGLINEAR was employed.

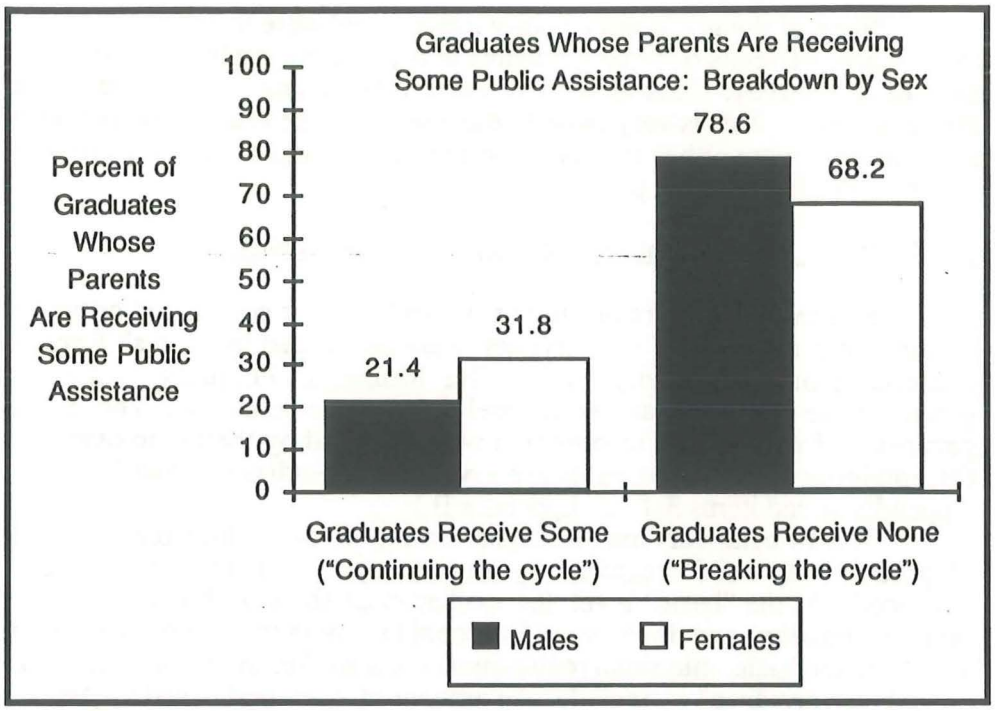

Figure 24. Graduates "breaking the cycle" of public assistance: males vs. females.

The difference between males and females in "entering the cycle" of public assistance may be, in part, explained by the problems of teen pregnancy and out-of-wedlock births. As noted earlier, teen pregnancy increased to 10.3% last year and out-of-wedlock births increased to about 1 in 5 — nearly four times the rate in 1975 in Iowa. An informal sampling of alternative schools showed that the percent of all female students entering those schools last year who were either pregnant or already mothers ranged from about 15% to 54%. In one school, 75% of those female students pregnant or already mothers were already on public assistance — 22% of the total female enrollment of this school.

Alternative schools have largely inherited this problem. Such schools are attractive to dropouts who are either pregnant or already mothers, since (1) personnel in these schools do not ostracize them or "put them down" for their condition or situation and (2) many have free day care centers at the school site. These female students, their children, and the state pay a considerable price for such pregnancies. One example of this is reduced productivity.

Productivity Component 8: Penal System Involvement

Involvement in the penal or corrections system is another negative factor of productivity. The costs of such involvement can be quite high — to federal, state, and local governments, as well as the victim, in terms of property, insurance rates, judicial proceedings, loss of productivity, and possible loss of life.

> [Note: Like public assistance involvement, penal system involvement could conceivably be a positive factor in the long term. In some cases, prisoners are rehabilitated and return to society to lead productive lives. The success rate of such rehabilitation in the U.S. is dismal, however. In 1986, 82% of all state and federal prisoners were recidivists — inmates who had committed crimes after serving a previous prison term or being on parole or probation (Wright (1989), p. 205).]

None of the graduates actually interviewed were incarcerated. However, I learned from school officials of three graduates in my target sample who were incarcerated at the time of this survey. This represents about 1.4% of the "augmented" sample (206 + 3 or 209 graduates). This is very close to the percent of the U.S. population in 1987 (about 243 million) who were either in prison, on parole, or on probation for criminal activity (3.46 million) (Wright (1989), p. 205).

The Fourteen Behaviors of Productivity: The "Needs Hierarchy"

Fourteen behaviors or dimensions of behavior considered critical in assessing the productive propensity of an individual were developed in the task force sessions and the conference on productivity held in Des Moines in February of this year. Employed graduates were asked to assess themselves on these behaviors. Those graduates granting permission for release of information were assessed by their employers. The instruments for obtaining these assessments are given in Appendixes A and B. (See item 7 (a-l) in Appendix A and items 3-14 in Appendix B.)

The 14 behaviors may be organized into a "needs hierarchy" according to the level of productivity needs required by an employer — from the most basic to the most advanced. At the "basic" level, the worker must show up for work (work attendance) on time (punctuality) and do the work in accordance with the company's rules (responsibility). These are the basic, minimum requirements of a worker in any organization. The next level — "job performance" — includes the amount of work performed (quantity), the number of errors or defects in the work (quality), drive or effort shown (initiative), and the ability to do more than one type of task (flexibility). These are the behaviors that are important in determining whether or not a worker receives a pay increase or gets promoted within her/his work unit (e.g., to a supervisory position).

The higher levels of productivity needs involve those behaviors which are likely to lead to advancement either within an organization or to another in which there is more opportunity. The "interactive" level includes the ability to communicate (verbal, written, and nonverbal skills), willingness and ability to work with others (cooperation), and responsiveness to the needs of the customer (customer-orientation). The "advanced" level includes the ability to develop new skills and acquire new knowledge (ability to learn) and the capacity for upward mobility in the organization (potential for advancement).

This needs hierarchy for assessing the behaviors of productivity may be useful in developing instructional modules and instruments for assessing a student's productive propensity at the secondary level. It is used here for descriptive purposes only. (See Figure 25.)

> [Note: Some of these behaviors could be broken down into more specific sub-dimensions of productivity. For example, potential for advancement could have been assessed more precisely as (1) capacity for leadership, (2) decisiveness, (3) ability to give (and take) criticism, (4) ability to analyze, (5) persuasiveness, and (6) innovativeness. Similar breakdowns are possible for other behaviors.]

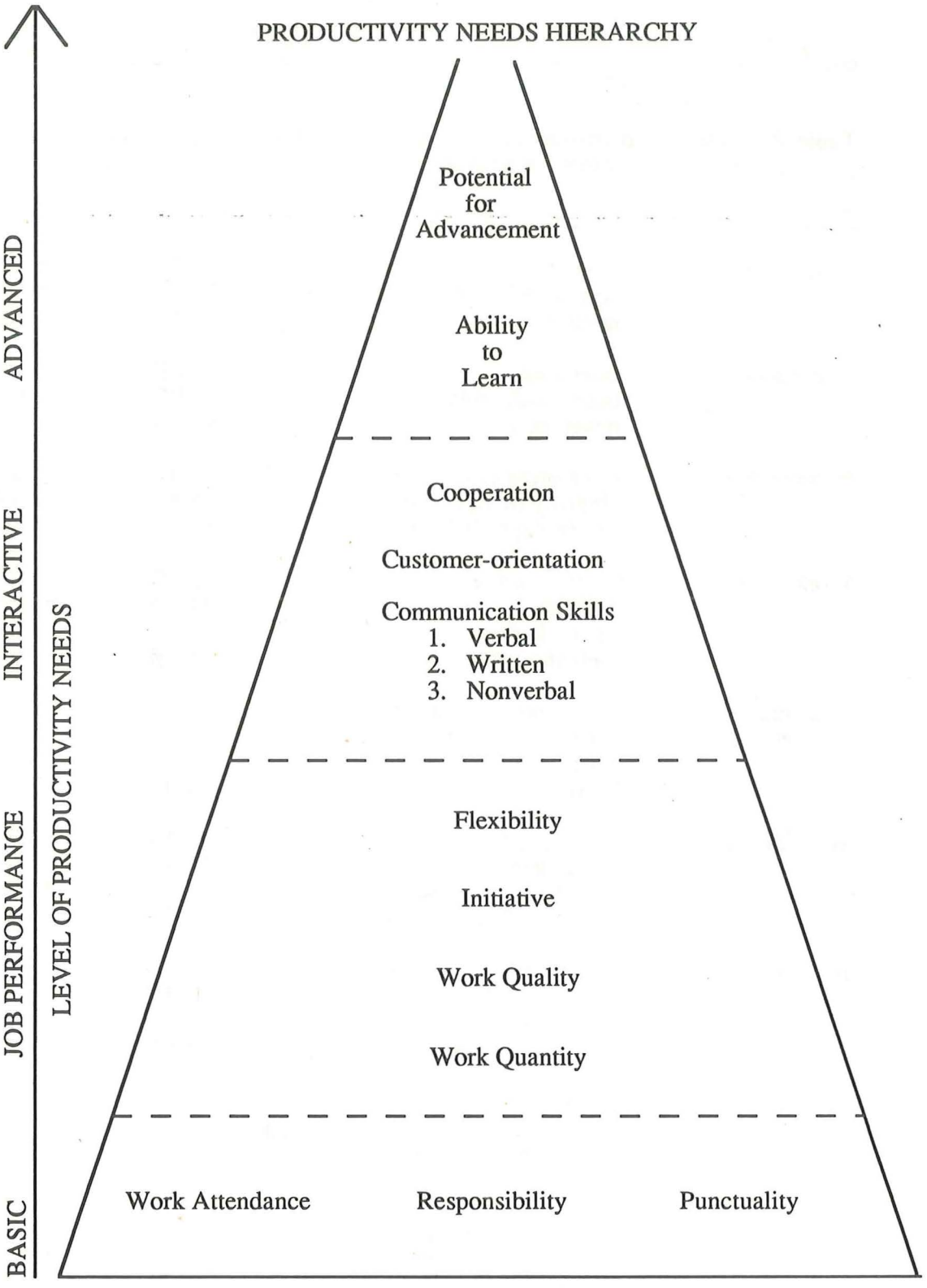

Figure 25. Hierarchy of productivity needs of an organization.

The following table includes the response distribution of (1) graduates and (2) employers over the diagnostic choices offered in the items used to assess the graduates on the 14 behaviors. (See Table 2.)

Table 2. Response distributions for graduates and employers on items assessing the graduates on the 14 behaviors of productivity. ("--" denotes not applicable for this group.)

Behavior	Diagnostic choices	Graduates	Employers
Punctuality	often late	0.7%	0.0%
	occasionally late	25.9%	34.5%
	never late	73.4%	65.5%
Attendance	often miss	0.0%	0.0%
	occasionally miss	5.0%	31.0%
	never miss	95.0%	69.0%
Responsibility	often break rules	0.0%	3.4%
	abide by rules; do job	15.8%	48.3%
	can be depended upon	84.2%	48.3%
Work quantity	below average	1.5%	3.4%
	average	34.3%	51.7%
	above average	50.0%	27.6%
	well above average	14.2%	17.2%
Customer orientation	don't know customers	11.5%	3.7%
	little or no concern	1.5%	3.7%
	some concern; friendly	16.9%	55.6%
	considerable concern	70.0%	37.0%
Work quality	many defects, errors	1.4%	0.0%
	some defects, errors	10.8%	10.3%
	few defects, errors	28.1%	55.2%
	very few defects, errors	59.7%	34.5%
Initiative	do as little as possible	0.7%	11.1%
	work fairly hard	6.5%	33.3%
	work hard; look for more	61.9%	48.1%
	will "go the extra mile"	30.9%	7.4%
Flexibility	can do only one type of job	2.2%	3.4%
	some ability to do more than one job	18.0%	34.5%
	can do many types of jobs	79.9%	62.1%
Cooperation	likes to work alone	14.1%	0.0%
	cooperates when asked	8.1%	24.1%
	cooperates even when not asked	41.5%	62.1%
	helps to build cooperation	36.3%	13.8%
Ability to learn	lacks basic skills	1.4%	0.0%
	has basic skills	28.1%	67.9%
	much skill, ability	70.5%	32.1%

Potential for Advancement	will stay at same level	17.0%	7.1%
	potential advancement in pay	17.8%	39.3%
	potential advancement in pay and responsibility	43.0%	50.0%
	excellent potential for advancement in company	22.2%	3.6%
Verbal skills	poor	1.4%	6.9%
	good	98.6%	93.1%
Writing skills	poor	11.7%	3.4%
	good	88.3%	55.2%
	can't tell	--	41.4%
Nonverbal skills	poor	2.9%	10.7%
	good	97.1%	53.6%
	can't tell	--	35.7%

[Note: The graduates' percentages were based on 130-140 graduates (numbers vary somewhat due to irrelevance of options or nonresponse in some cases. The employers' percentages were based on, at most, 29 responses.]

The agreement between graduates' self-assessments and their employers' assessments of their productive propensity was fairly high on some behaviors and low on others. For example, at the "basic" level, there was good agreement on punctuality (Figure 26), but some disagreement on responsibility (Figure 27).

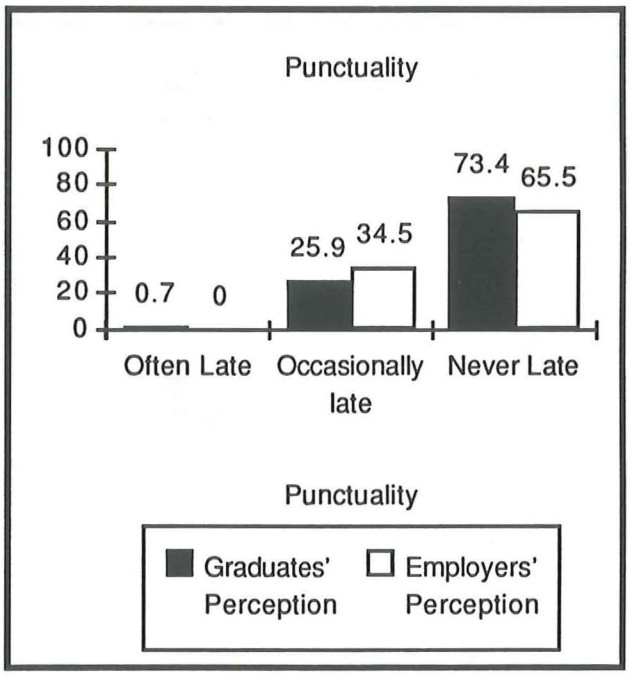

Figure 26. Graduates' self-assessment and employers' assessment of graduates' punctuality (in percent by response category).

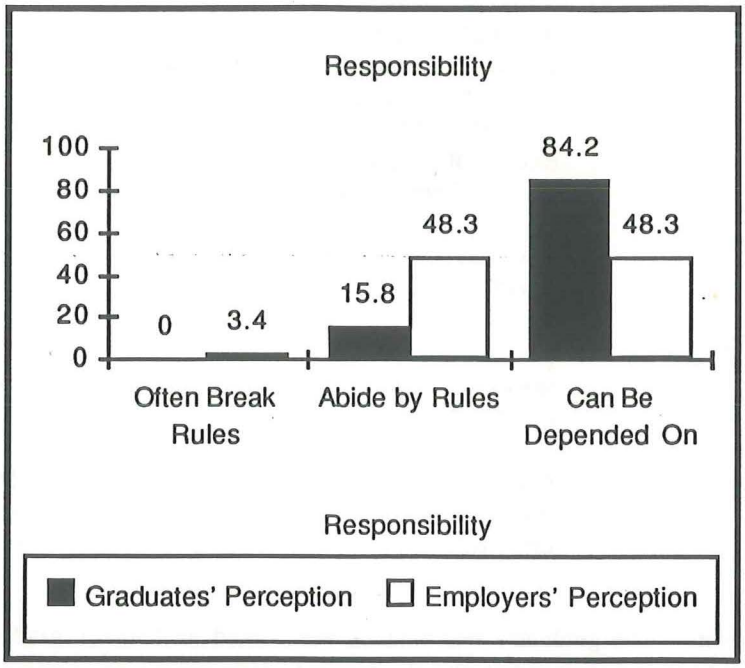

Figure 27. Graduates' self-assessment and employers' assessment of graduates' responsibility (in percent by response category).

At their "job performance" level, there was good agreement on graduates' flexibility (Figure 28), but at that "interactive" level, there was some disagreement on cooperation (Figure 29).

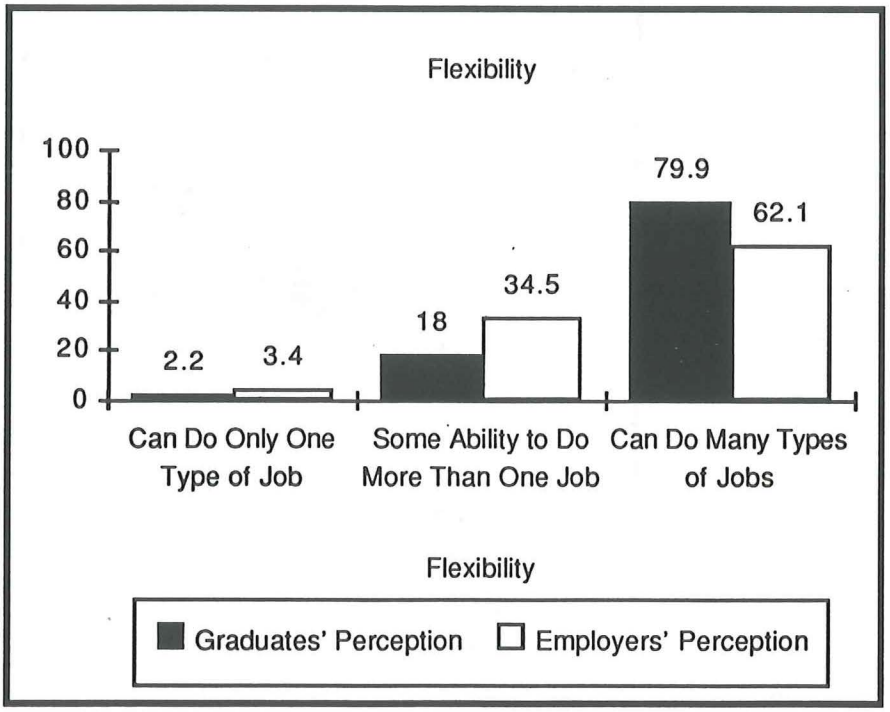

Figure 28. Graduates' self-assessment and employers' assessment of graduates' flexibility (in percent by response category).

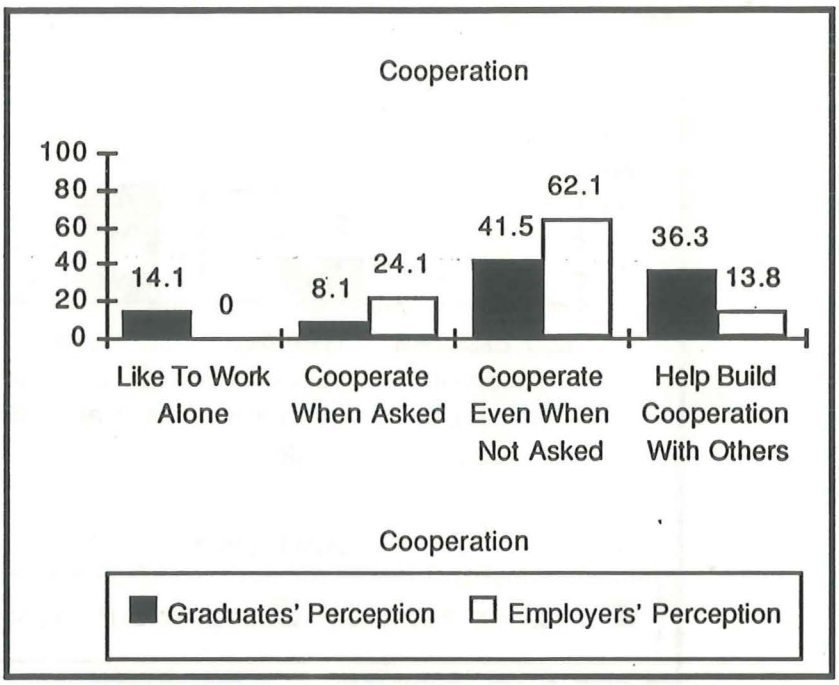

Figure 29. Graduates' self-assessment and employers' assessment of graduates' cooperation (in percent by response category).

Finally, at the "advanced" level of productivity needs, there was fairly good agreement on potential for advancement (Figure 30), but disagreement on ability to learn (Figure 31).

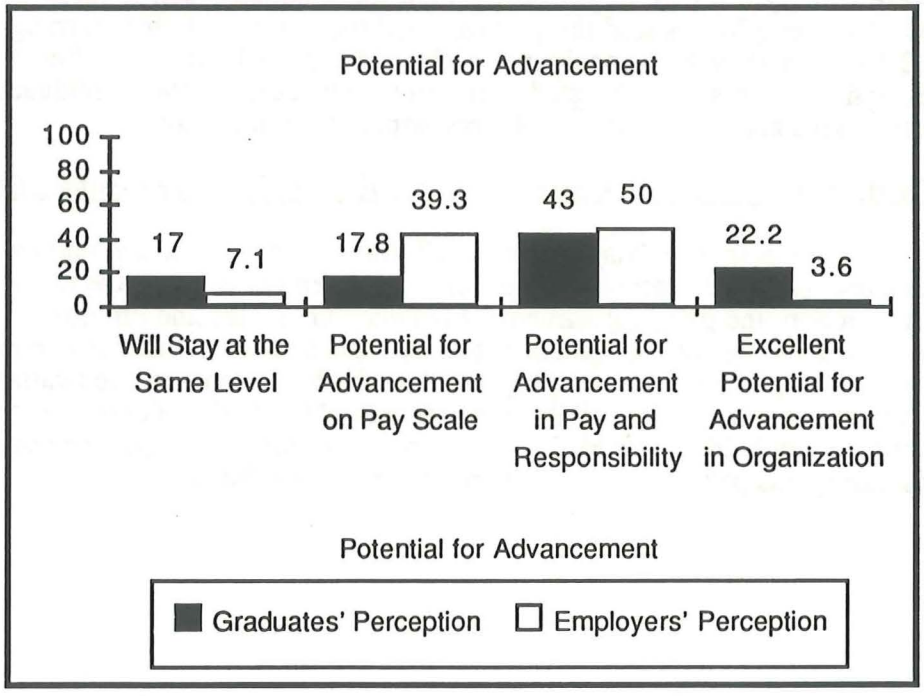

Figure 30. Graduates' self-assessment and employers' assessment of graduates' potential for advancement (in percent by response category).

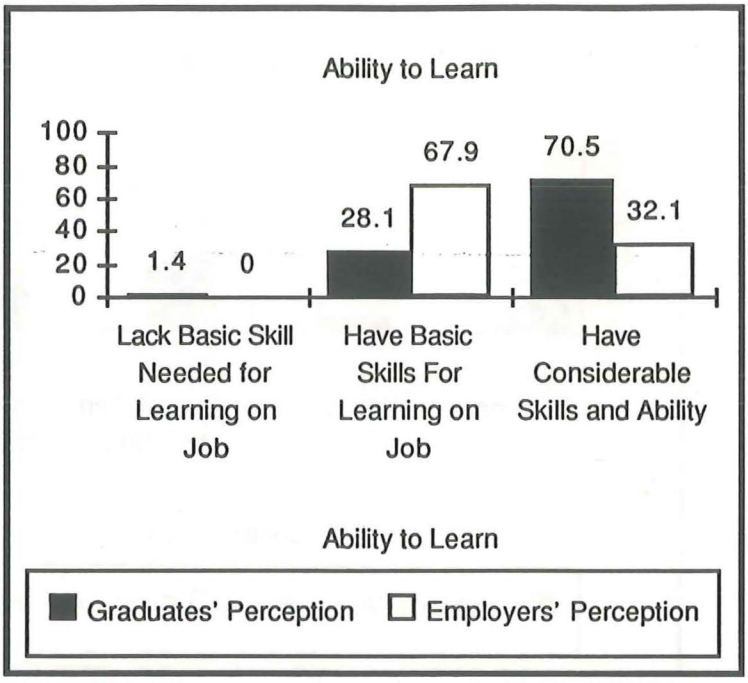

Figure 31. Graduates' self-assessment and employers' assessment of graduates' ability to learn (in percent by response category).

It should be noted that graduates tended to rate themselves a bit higher than their employers rated them. In addition, when there was disagreement, employers' ratings of graduates were usually not bad — just lower than the graduates' self-assessments. For example, 67.9% of employers said the graduate had the basic skills for learning on the job, while 32.1% said they had considerable skills for such learning. These percentages were essentially reversed by the graduates, but note that only 1.4% of graduates said they lacked basic skills and none of the employers responded in this way.

Graduate-Employer Congruence: Pairwise Agreement on the Fourteen Behaviors

The response data presented in Table 2 on graduates' and employers' assessment of graduate productive propensity reflects the agreement between the two groups of raters. In this section, the pairwise agreement between graduates and employers is assessed, using various measures of "congruence" between these raters. This pairwise agreement involves only those graduates and employers where both assessments are available. This analysis was suggested by one of the participants (Ms. Twila Young) at the conference on productivity held in Des Moines in February of this year. The summary statistics used in assessing this pairwise agreement are presented in Table 3.

Table 3. Congruence of Graduate and Employer Assessments of Graduate's Productive Propensity on the Fourteen Behaviors.

Behavior	P(agree)	P(near agree)	Cohen's kappa
Punctuality	71.4%*	100.0%*	.378
Attendance	64.3%*	100.0%*	-.069
Responsibility	53.6%*	96.4%*	.083
Work quantity	30.8%	88.5%*	-.078
Customer-orientation	40.0%*	80.0%*	.031
Work quality	25.0%	89.3%*	-.225
Initiative	42.3%*	73.1%*	.091
Flexibility	50.0%*	96.4%*	-.092
Cooperation	25.0%	82.1%*	-.200
Ability to learn	48.1%	96.3%*	.067
Potential for advancement	38.5%	80.8%*	.069
Verbal skills	89.3%*	89.3%*	-.050
Written skills	82.4%*	82.4%*	-.085
Nonverbal skills	77.8%*	77.8%*	-.091

[Key: "P(agree)" denotes the percent of agreements between graduate and employer, "P(near agree)" denotes the percent of "near agreements", Cohen's kappa is the classical nominal scale agreement measure (Cohen, 1960), and "*" denotes a percentage that is significantly greater than what one would expect by chance (raters guessing randomly).]

Generally speaking, the congruence or pairwise agreement was fairly high. This is particularly reflected in the proportion of "near agreements" (denoted "P(near agree)" in Table 3). A perfect agreement is where both members of the pair agreed on their assessments, e.g., both graduate and employer said the graduate's quantity of work was "average." This is a very stringent requirement. "Near agreement" allows some leeway in the degree of agreement between the raters. For example, a graduate assessing her/his work quantity as "above average" and the employer assessing it as "average" would constitute a near agreement. On the other hand, a graduate's assessment of her/his work quantity as "well above average" and the employer's assessment as "average" would constitute a disagreement. The definition of what constitutes a "near agreement" varies somewhat over the 14 behaviors. Generally speaking, if the responses are within one unit on the implied ordinal scale for the item, the agreement was considered "near" or approximate. (See Figure 32 on page 42.)

Feedback on How Graduates Feel About the Alternative School Experience

Of those responding (197), 92.4% said that the alternative school made a positive difference in their lives. Evidently, most graduates have a very positive view of their alternative school experience. Some examples of comments on how this experience helped them in their work follow:

"They helped me to feel good about myself."
"The school helped me to work harder and to stick with it."
"They taught me not to give up —best school I ever attended."
"It turned my life around . . . gave me a reason to go on."
"They taught you that you have a future."
"It provided a place to explore things I was interested in . . . helped me to learn who I was."

"I was a mess when I started (at the alternative school) . . . they helped me to grow up and learn responsibility."
"They helped with everything from getting to know people to working with people."
"The teachers cared more about the student and took more time with you . . . blueprint (class), wood shop, and metal shop helped in my work."
"They didn't just shove me off as another number. The school made me more independent . . . I looked forward to going to school. I called teachers by their first names. They cared."

On the critical side, one said the course she took at the alternative school was "third grade level." Suggestions for improvement included more "high tech" courses, more math and science, how to apply for a job, a course which teaches them to deal with the public, and harder courses. My favorite was "to have warned them what it would be like (in the real world)".

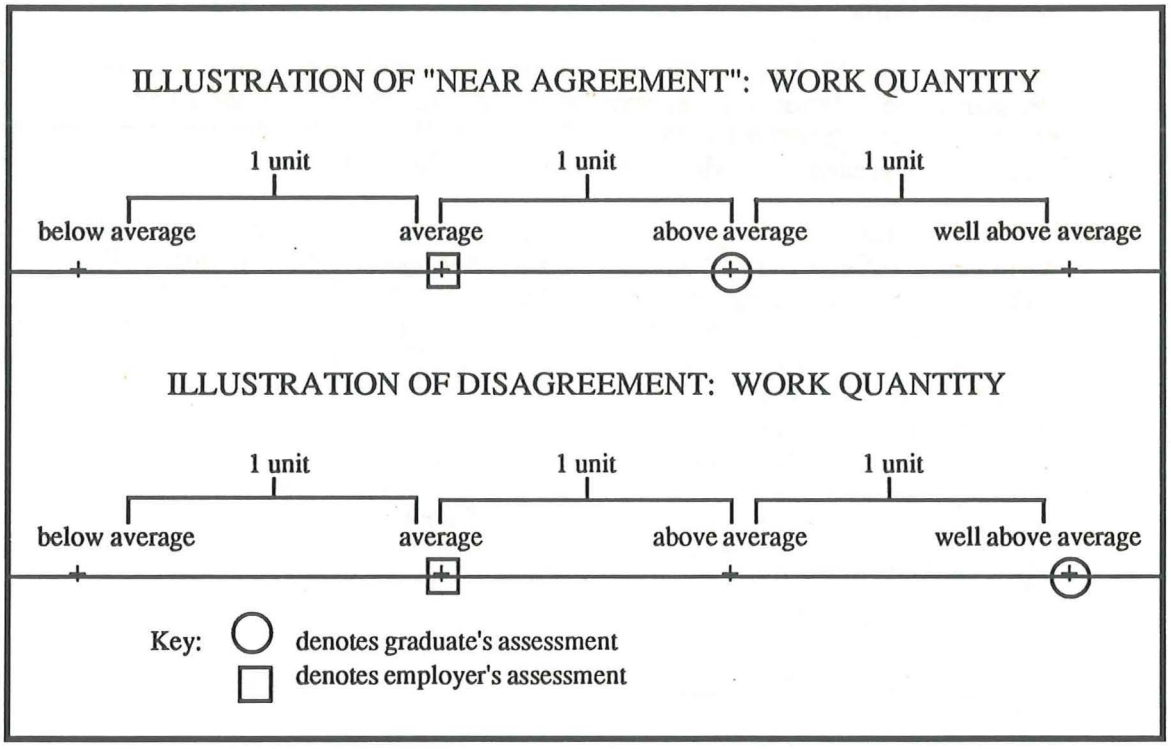

Figure 32. Graphical illustration of "near agreement" and disagreement with work quantity item.

CHAPTER 5

DISCUSSION, FUTURE DIRECTIONS, RECOMMENDATIONS, AND CONCLUDING REMARKS

Discussion

Graduates of Iowa's Alternative Schools from 1987 to 1989 are productively engaged in employment activities. Slightly more than 7 in 10 graduates have income-generating employment, another 3-4% are in college, while about 17% are homemakers. About 45% go on to pursue some type of post-secondary education or training, most homemakers are involved in child rearing activities, about 4 out of 5 have some talents or skills not used in their jobs, and very few are presently incarcerated. Areas which might be targeted for improvement are volunteer work and participation in the political process (voting in elections), as well as public assistance involvement among female graduates. Since the latter appears to be related to teen pregnancy and out-of-wedlock births, it may be difficult to make improvements in terms of public assistance involvement until these social problems are more effectively countered.

In terms of the 14 behaviors of productivity, the graduates rate themselves fairly high and are rated by their employers respectably high — albeit somewhat lower than they rate themselves. Behaviors which might be targeted for improvement are punctuality, responsibility, and cooperation. A little over one-quarter of the graduates admitted that they were occasionally late for work, while slightly over one-third of the employers responded in this way. Slightly less than half of the employers said that the graduates could be depended upon for high quality work — with or without supervision. Cooperation is a marginal problem, with about one in four employers responding that the graduate cooperates (only) when asked. Since cooperation is so important in the new management approaches in industry, one would prefer to see close to 100% in the response categories "cooperates with other workers even when not asked" and "helps to build cooperation with fellow workers" (Deming, 1986).

The graduates, generally speaking, have a very positive view of the alternative school experience. The strong points, according to the graduates, are in the affective areas — helping them to feel better about themselves, to work harder and not give up, to make friends and work better with people, and in helping them to learn who they are. (One student said the alternative school helped her to gain "definition.") Clearly, these areas are considered important to these graduates. Graduates' suggestions for improvement included (1) higher level courses, such as math, science, and "high tech" (e.g., computer programming) and (2) teaching practical skills like filling out applications and interviewing for a job.

Future Directions for Research

Further research regarding productivity and the at-risk student is needed. Some suggested lines of development follow:

1. Conduct case studies of individual graduates of alternative schools, to gain more in-depth knowledge of their work productivity and their school experience;

2. Develop a database for storing and accessing data on the productivity of graduates (e.g., up to 5 years following graduation) and related information;

3. Experiment with "multi-factor" or "matrix" measures of productivity, using the

8 components and/or the 14 behaviors introduced herein and a system of weights, so that an index of productivity could be computed for each graduate (Brinkerhoff & Dressler, 1990, pp. 93-98);

4. Devise tools for assessment and policies/practices for remediation, which may be applied in the classroom (both regular and alternative schools) to monitor productive propensity for work.

Recommendations

In the first chapter, following Catterall & Cota-Robles (1989), I argued that there exists a link between the present increase in dropouts and at-risk students and the drop in national productivity which occurred during the period from 1965 to 1975 — when the parents of the present generation of high school students were entering the work force as adults. More generally, there appears to be a negative or inverse relationship between productivity and "at-riskness." Thus, programs and procedures likely to improve productivity should help to reduce the dropout rate and the numbers of at-risk students. The link applies in the other direction as well. A reduction in the dropout rate and the number of at-risk students should have a positive effect on productivity. The results of this study are somewhat supportive of the latter statement.

Some U.S. companies are improving their productivity and competitive advantage by incorporating the "14 points" of Dr. G. Edwards Deming, a statistical consultant and quality "guru" who is credited with much of Japan's dramatic turnaround in productivity and quality after World War II. Some of these points include creating "constancy of purpose" toward improving product and service, improving "constantly and forever" the production and/or service system by improving quality and productivity, instituting leadership, driving out fear in the work place, breaking down barriers between departments and people, and instituting a program of education and self-improvement in the work place (Deming, 1986). Tom Peters, a management consultant and author, has written extensively about the transformation of U.S. industry which is needed to maintain international competitiveness. One very positive development in the U.S. is what he calls the "hustling mini-companies", which focus on niche markets and emphasize customer responsiveness, quality, and employee education and involvement. These companies have high levels of productivity and high growth rates (Peters, 1987).

Schools can ill-afford to ignore the needs of business and industry in the "information age." In particular, schools need to begin to educate students about the importance of doing quality work. But as Glasser (1990) has pointed out, we cannot force students to do quality work (or anything, for that matter). Imposing more requirements or stricter attendance policies will not work if the students do not put schools and, in particular, the academic components thereof, into their "quality worlds" (Glasser, 1990). We must begin to take seriously the idea that learning can be a positive, enjoyable experience.

Programs and practices which will be useful in transforming the school experience into a more positive, enjoyable one for students include the following:

1. Cooperative learning and learning teams;
2. Formative, diagnostic assessment;
3. Student self-assessment of their work;
4. Encouragement of student input regarding how teachers can better teach them;
5. Use of the computer for exercises in problem solving, which involve higher order thinking skills, but which are fun to do.

All of the above points, directly or indirectly, involve assessment. Presently, assessment is a major factor leading to student failure and dropping out (Veale & Foreman, 1990).

Often, assessment consists only of homework and exams (e.g., a midterm and final). There is little effort to get students to interact — indeed, such interaction is considered "cheating" in competitively-oriented classrooms.

Assessment can be done through cooperative learning groups, with proper monitoring to insure that all students are contributing to the group process (Johnson, Johnson, Holubec, & Roy, 1984 and Slavin, 1987). Short, diagnostic tests — where specific incorrect responses provide information useful to prescribing remediation — can be given frequently to monitor improvement (Foreman & Veale, 1988). Moreover, students should be allowed to retake tests in order to encourage learning and quality improvement. This should also reduce the level of tension in the classroom and make testing a more positive experience for students. Finally, student input should be actively sought by teachers to (1) identify areas where students need help, (2) find out how students like to learn, and (3) diagnose areas for instructional improvement (Glasser, 1990 and Veale, 1989). These changes require that teachers take on more of a "lead-manager" role (as opposed to a "boss-manager") and that students be viewed as workers (and customers) — not just passive recipients of knowledge/information. Note that cooperation, quality improvement, and customer responsiveness are all critical ingredients to the improvement of productivity in industry (Deming, 1986 and Peters, 1987). Schools need to learn about the methods of transforming industry because these same methods can be applied to improving the learning process (Glasser, 1990).

The microcomputer has revolutionized American industry. Although many schools have microcomputers, their full capabilities as learning devices have rarely been utilized. For example, there exist microcomputer-based tutoring systems whereby the student learns to solve problems in a subject area, with feedback provided by a "tutor" which is actually built into the software. Assessment, in such a learning system, is part and parcel of the problem-solving process; no separate testing mode is needed. Examples of such programs are QUEST (electricity and electrical troubleshooting), LISP (computer programming), and Geography Search (historical simulation). (See Frederiksen, Glaser, Lesgold, and Shafto (Eds.), 1990.) In addition, the microcomputer may be used to efficiently score and analyze diagnostic tests, where the testing is separate from the learning phase. In some of these programs, the "score" is not simply a number correct total score, but a "diagnostic score", including a diagnosis of the specific learning difficulty of the student on the objective being tested (Foreman & Veale, 1988). Although such testing is separate from the learning phase, good diagnostic tests will provide the opportunity for learning — even if the student performs at an acceptable level (Veale, 1989).

Another recommendation, not listed above, is to assess the students on the 14 behaviors of productivity used in this study (or others deemed appropriate). Presently, only punctuality and attendance, along with cognitive skills in various subject areas, are being assessed in schools. Such assessment should be monitored and remediation prescribed when necessary. To provide effective prescription, such assessment must be diagnostic. The items addressing the 14 behaviors included in the instruments used in this study are examples of diagnostic assessment.

Students coming out of quality schools where they were encouraged to assess the quality of their work, allowed to work cooperatively with fellow students, and assessed in a truly formative manner to encourage constant improvement and mastery, will be more likely to enter the work force as self-starting, responsible, energetic workers. They will be more likely to fit into a quality-oriented company, where workers cooperate with their fellow workers, communicate with their leaders and their customers, and take a problem-solving approach to their work to "constantly and forever" improve their system of production and/or service. They will likely be less accepting of a boss-managed company with production quotas, slogans, and fear as the primary "motivators."

Concluding Remarks

There is evidence from the data gathered in this study that the alternative schools whose graduates were surveyed are succeeding in turning out productive workers and citizens. Certainly, the alternative school is in the "quality world" of the vast majority of these graduates — over 90% of those responding said that the alternative school had made a positive difference in their lives. Nearly three graduates out of four are employed in some way, including full-time, part-time, college, or military; another 17% are working as homemakers, most of them engaged in child rearing.

On the other hand, the areas of political participation and volunteerism need to be strengthened and the entrance of female graduates into public assistance programs is a problem. The latter appears to be related to the problems of teen pregnancy and out-of-wedlock births, both of which are on the rise in Iowa. These problems — which the alternative schools have inherited and which result in children likely to become students at-risk in the future — need to be addressed and mitigated. In terms of the behaviors of productivity, punctuality, responsibility, and cooperation are dimensions which could be targeted for improvement. The recommendations given earlier in this section might be expected to stimulate such improvement.

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APPENDIX A

GRADUATE INTERVIEW FORM

Employment, Productivity, and Feelings about Alternative School

Introduction:

Hello, ____(full name of graduate)____. I am _____, a _____ at _____. I am helping in a study which is being done through the Iowa Department of Education. We're studying the graduates of alternative schools in the state of Iowa over the past three years—their employment and other productive activities. Perhaps you have been contacted by someone from_____ School in this regard. As a graduate of an alternative school, you have been randomly selected to be interviewed. The information which you can provide us is very important to the alternative schools in Iowa. **Your responses will be kept private** and your name will never by used. Only statistical information will be used in this study, with no reference to you personally. I would greatly appreciate your taking about 20 minutes to answer a few questions about your work since graduation and your feelings about the alternative school.

Is this a convenient time for you now? [If respondent answers "Yes", proceed with interview; otherwise, ask "What would work out better for you?", write down day and time to call back on call sheet and conclude call.]

1. What work have you been doing since graduation, excluding your present job? (Include volunteer activities. See question #10 for examples of these. The following abbreviations should be used:
F=full-time, P-part-time, and V=volunteer work.)

_____

_____

_____

_____

_____

_____

2. What is your PRESENT employment status? (You may choose as many as may be appropriate. For example, the respondent may have two jobs or may be employed while attending college or a training program.)

___ full-time employed
___ part-time employed (# hours per week on average = _____)
___ self-employed
___ military duty
___ attending college or university
___ homemaker
___ not employed

Note: If the respondent answered "full-time employed", "part-time employed", or "self-employed", go to item 3 and then proceed through the questionnaire.

If the respondent answered "homemaker" (but neither "full-time employed", "part-time employed", nor "self-employed"), go to item 8 and proceed through the rest of the questionnaire (items 9, 10, and so on).

Otherwise, go to item 9 and proceed with the rest of the questionnaire.

3. What do you do in your present job(s)?

_____

Check appropriate category of employment (do not ask):

___ building trades
___ business
___ clerical
___ cosmetology
___ food services
___ health
___ maintenance
___ manufacturing
___ mechanical
___ sales
___ technical
___ transportation
___ other

[In case graduate has more than one job, put a "1" in space corresponding to primary job category, "2" in space corresponding to second job, etc.]

a. Are you paid an hourly wage? (May check more than one if working more than one job.)
   ___ Yes. Is it (including tips) . . .
      ___ below minimum wage (less than $3.85/hr)
      ___ minimum wage ($3.85/hr)
      ___ between $3.85 and $5.00/hr
      ___ between $5.00 and $10.00/hr
      ___ between $10.00 and $15.00/hr
      ___ between $15.00 and $20.00/hr
      ___ over $20.00/hr
   ___ No.

b. Are you paid a salary?
   ___ Yes. Is it . . .
      ___ less than $10,000
      ___ between $10,000 and $15,000
      ___ between $15,000 and $20,000
      ___ between $20,000 and $30,000
      ___ over $30,000
   ___ No.

4. How long have you been employed in your present MAIN job?

___ less than one month
___ 1-6 months
___ 7-12 months
___ between one and two years
___ more than two years

5. Regarding your present MAIN job. . .

a. Are you satisfied with your pay?
   ___ Yes
   ___ Somewhat
   ___ No

b. Are you satisfied with your working conditions? (e.g., air quality, safety, breaks for lunch and coffee)
   ___ Yes
   ___ Somewhat
   ___ No

c. Are you satisfied with the time of day (or night) you work?
   ___ Yes
   ___ Somewhat
   ___ No

d. Are you satisfied with the number of hours you are getting in your job?
   ___ Yes
   ___ Somewhat
   ___ No
      ___ would like more
      ___ would like fewer

e. Do you get along with your co-workers?
   ___ Yes
   ___ Somewhat
   ___ No

f. Do you get along with your boss?
___ Yes
___ Somewhat
___ No

6. a. Is there opportunity for advancement or "moving up" in terms of pay or position in your present MAIN job?
___ Considerable opportunity
___ Some opportunity
What type of opportunity for advancement exists in this job?
___ higher pay
___ higher level position (more challenging work, greater responsibility)
___ educational opportunities (training programs, etc.)
___ other
_____
___ No opportunity

b. Is there any type of performance evaluation of your work by your employer or supervisor in your present MAIN job?
___ Yes
Do you receive feedback on what you are doing right and what you are doing wrong from this evaluation?
___ Yes
___ No
Do you feel that the performance evaluation is fair?
___ Yes
___ No
What is unfair about it?
_____
___ No

7. I would like you to rate yourself on the following qualities as they relate to your performance in your present MAIN job:

a. PUNCTUALITY
___ often late for work
___ occasionally late for work
___ never late for work

b. WORK ATTENDANCE
___ occasionally miss work
___ never miss work (except for illness or injury
___ often miss work

c. RESPONSIBILITY
___ abide by rules; always do my job
___ often break company rules
___ can be depended upon for high quality work—with or without supervision

d. QUANTITY OR AMOUNT OF WORK
___ above average for work unit
___ well above average for work unit
___ below average for work unit
___ average for work unit

e. QUALITY OF WORK
___ some defects or errors in my work
___ few defects or errors in my work
___ very few defects or errors in my work
___ many defects or errors in my work

f. CUSTOMER NEEDS (Explain concept of "customer": person who will use what you produce or buy what you are selling)
___ do not know who my customers are
___ little or no concern for customer needs
___ have some concern for needs of customer; friendly
___ have considerable concern for needs of customer; relate personally to customer

g. INITIATIVE
___ work fairly hard; follow the lead of others in work unit
___ do as little as possible to get by
___ will "go the extra mile" to get job done right
___ work hard; look for more work to do upon completing a task (don't stand around)

h. FLEXIBILITY
___ can do many types of jobs at work; adapt well to change
___ can do only one type of job at work
___ some ability to do more than one type of job at work

[Note: Advise graduate to answer subitem "h" in terms of his/her **potential**, whether or not they are given the opportunity to perform more than one type of job.]

i. ABILITY TO LEARN
___ have considerable skills and ability; take advantage of training or educational opportunities on job
___ have basic skills for learning on job
___ lack basic skills needed for learning on job

j. COMMUNICATION
verbal communication
___ good ___ poor
written communication
___ good ___ poor
nonverbal communication
___ good ___ poor

[Note: Interviewer may have to explain what "nonverbal" communication is. This would include, for example, the manual demonstration of a work procedure, the use of sign language (with a deaf worker), gestures, eye contact, good touch (hug or pat on back), sense of rhythm or low, a smile, and positive "vibes".]

k. COOPERATION
___ cooperate with other workers when asked
___ cooperate with other workers even when not asked
___ like to work by myself
___ help to build cooperation with fellow workers

l. POTENTIAL FOR ADVANCEMENT
___ feel that I have excellent potential for advancement in the organization, e.g., from staff to management level
___ feel that I have some potential to advance on pay scale
___ feel that I have potential to advance in work unit, both in terms of pay and job responsibility
___ feel that I will likely stay at the same level of pay and job responsibility

[Note: If the respondent did not select "homemaker" in item 2, go to item 9; otherwise, continue to item 8.]

8. Are you married (or living with someone)?
___ Yes [answer (a) and (b)]
___ No [answer (b)]
a. Is your spouse (or living partner) working?
___ Yes ___ No
b. Do you have any children living with you?
___ Yes (# of children = _____)
___ No
c. Have you sought, but been unable to find, employment (other than homemaker)?
___ Yes [go to item 9]
___ No [answer (d)]
d. What are the reasons you have not sought employment (other than homemaker)?
1. _____
2. _____
3. _____

9. a. Have you furthered your education or taken any training since graduation from _____ School?
___ Yes
___ completed part of a training program (e.g., technical, mechanical, or beauty school)
___ completed a training program
___ in military (standard training program)
___ special training in military (e.g., radar, computer technology, electronics, pilot, etc.)
___ some college or university coursework (less than a full year of credit)
___ completed one year of college or university credit
___ completed two years of college or university credit
___ completed more than two years of college or university credit
_____
(name of institution attended)
___ No
b. Do you plan to take some courses—either in college or through training programs—in the foreseeable future?
___ Yes
What courses or type of program?
_____
_____
___ No

10. Are you involved in any volunteer organizations or any voluntary service activities? (These are activities in which you have freely chosen to participate and for which you are not paid.)

___ Yes (What kind?)
- ___ Community shelters
- ___ Crisis line
- ___ Community services
- ___ Salvation Army
- ___ United Way
- ___ Church-related activities
- ___ School-related activities (e.g., tutoring)
- ___ Political activities (either with a political party or centered around some issue such as the environment)
- ___ other(s)

_____

___ No

Would you like to get involved in such activities if you had more time or had someone to help you get involved?

___ Yes

What type of activities?

_____

_____

___ No

11. a. Did you vote in the last election (1988)?

___ Yes

___ No

Why did you choose not to vote?
- ___ Not old enough then
- ___ Not registered
- ___ Didn't feel that my vote would make a difference either way
- ___ Didn't like any of the candidates
- ___ Not interested in the campaigns
- ___ Other

_____

b. Do you plan to vote in any of the elections this year?

___ Yes

___ No

(Note: You might point out to respondent that you are over halfway through the interview now and provide him/her with some positive feedback, e.g., as discussed in the Patton handout on pp. 174-5.)

The following questions concern your experiences at the alternative school you attended.

12. a. Did you get your diploma from _____ School?

___ Yes

___ No

b. How long did you attend _____ School?
- ___ less than one semester
- ___ one semester
- ___ one year
- ___ 1 1/2 years (3 semesters)
- ___ two years or more

c. Do you feel that _____ School has made a positive difference in your life?
- ___ Yes
- ___ No
- ___ Not sure

13. How did _____ School help you in your present work?

_____

_____

_____

14. What could _____ School have done better to prepare students for a job after graduation?

_____

_____

_____

[Note: Interviewer may need to use "probes" to elicit responses from graduates to questions #13 and #14. Be careful not to lead the respondent. See packet of materials (pp. 9-10 of Northwestern University handbook and the material on pp. 173-174 of the Patton handout) for examples.]

Background information:

1. Age _____

2. Marital status:
- ___ single
- ___ married
- ___ living with someone ("significant other")
- ___ divorced
- ___ separated
- ___ widowed
- ___ refused to answer

3. Number of children _____

4. Gender _____
(Note: You should be able to determine this from name or voice, without asking.)

5. Present living arrangement:
___ with both parents
___ with father
___ with mother
___ with guardian
___ with spouse (or live-in partner)
___ with friend(s)
___ by self

6. Did YOUR PARENTS (mother and/or father) OR GUARDIAN receive any public assistance while you were in school?
___ Yes
  ___ WIC (Women, Infants, and Children; food assistance)
  ___ AFDC (Aid to Families with Dependent Children)
  ___ food stamps
  ___ county relief (rent or heat)
  ___ public housing (low rent; Section 8; lease housing)
  ___ SSI (Supplemental Security Income)
  ___ free/reduced cost for lunch or breakfast
  ___ Title 19 (health cares; medicaid; medical card)
  ___ JTPA (Job Training Partnership Act)
  ___ GA (General Assistance stipend)
  ___ other
  _____
___ No
___ Don't know

7. Were either of your parents or your guardian employed while you were going to school?
___ Yes
What were their occupations?
_____
___ No

8. What is the educational background of your parents (or guardian)?
___ neither are high school graduates
___ one is a high school graduate
___ both are high school graduates
___ some college or university work for one or both
___ one has (four year) college or university degree
___ both have (four year) college or university degrees

9. Are YOU presently receiving any type of public assistance?
___ Yes
  ___ WIC (Women, Infants, and Children; food assistance)
  ___ AFDC (Aid to Families with Dependent Children)
  ___ food stamps
  ___ county relief (rent or heat)
  ___ public housing (low rent; Section 8; lease housing)
  ___ SSI (Supplemental Security Income)
  ___ free/reduced cost for lunch or breakfast
  ___ Title 19 (health cares; medicaid; medical card)
  ___ JTPA (Job Training Partnership Act)
  ___ GA (General Assistance stipend)
  ___ other
  _____
___ No
Do you need information on how to get such assistance, should you need it?
  ___ Yes (Suggest "First Call for Help": 244-8646.)
  ___ No

10. Have you participated in any work experience or training programs sponsored by the Job Training Partnership Act (JTPA)?

___ Yes

Do you feel that the JTPA program was (or will be) helpful to you in preparing you for employment?

___ Yes

In what way?

_____

_____

_____

___ No

Why was it not helpful?

_____

_____

_____

___ Not sure

___ No

11. What additional talents or creative abilities do you have which are not being utilized in your present work activity?

_____

_____

a. Are you continuing to develop these talents or abilities?

___ Yes

___ No

b. Do you feel that you may eventually be able to find a market for these talents or abilities?

___ Yes

___ No

12. Do you have anything else you would like to say--either about the alternative school, your present work, or your future plans?

_____

_____

_____

_____

_____

13. Concerning your present MAIN job . . .

a. Who is your employer?

_____

b. What is your employer's address?

_____

c. What is the name of your supervisor?

_____

[Note: The respondent may ask you at this point why you are asking for this information. In particular, they might ask, "Are you going to ask my employer or supervisor about my work?" See fallback statement on this issue and concluding statement (1).]

CONCLUDING STATEMENTS:

(1) (IF EMPLOYED) WE WOULD LIKE YOUR PERMISSION TO SEND YOUR EMPLOYER A QUESTIONNAIRE IN ORDER TO GET HIS/HER OPINIONS ABOUT YOUR WORK. AGAIN, THIS INFORMATION WILL BE KEPT PRIVATE BY US. WE SHALL ASK YOUR EMPLOYER TO ALSO KEEP THIS INFORMATION PRIVATE. DOES THIS SEEM O.K. TO YOU?

___ YES ___ NO

IF O.K., WE WILL BE SENDING YOU A FORM TO SIGN GIVING US PERMISSION TO SEND YOUR EMPLOYER THE QUESTIONNAIRE, ALONG WITH A COPY OF THE QUESTIONNAIRE FOR YOU TO LOOK AT. THIS WILL HELP US A GREAT DEAL IN THIS STUDY. (MAKE SURE YOU HAVE GRADUATE'S CURRENT ADDRESS.)

(2) THIS COMPLETES THE INTERVIEW. THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION. THE INFORMATION YOU HAVE PROVIDED WILL BE VERY HELPFUL TO THE DEPARTMENT OF EDUCATION AND THE ALTERNATIVE SCHOOLS OF IOWA. THANKS AGAIN! GOODBYE.

APPENDIX B

PLEASE DO NOT PUT ANY NAMES ON THIS FORM

QUESTIONNAIRE FOR EMPLOYERS

Please answer the following questions.

1. Is your business organization primarily concerned with manufacturing, or providing a service, or both?
   ____ manufacturing
   ____ service
   a. What products and/or services does your business organization provide?
   _____

2. What does the graduate do in your business organization? (Give specific task(s) performed in job.)
   _____
   _____
   a. Did you check the graduate's high school transcript prior to hiring him/her?
   ____ Yes ____ No

3. How would you rate the graduate in terms of his/her PUNCTUALITY? (check one)
   ____ often late for work
   ____ occasionally late for work
   ____ never late for work
   a. If you selected "often late for work," what is the reason the graduate usually gives for being late?
   _____

4. How would you rate the graduate in terms of his/her degree of ABSENTEEISM? (check one)
   ____ often misses work
   ____ occasionally misses work
   ____ never misses work—except due to clear cases of sickness or injury
   a. If you selected "often misses work," what reason does the graduate usually give for failing to show up for work?
   _____

5. How would you rate the graduate in terms of RESPONSIBILITY taken in his/her work? (check one)
   ____ often breaks company's rules
   ____ abides by rules; does his/her job
   ____ takes responsibility for quantity and quality of his/her work

6. How would you rate the graduate's job performance in terms of QUANTITY or amount of work produced? (check one)
   ____ below average for the work unit
   ____ average for the work unit
   ____ above average for the work unit
   ____ well above average for the work unit

7. How would you rate the graduate in terms of his/her CUSTOMER-ORIENTATION? (See attached sheet for technical definition of "customer.") (check one)
   ____ does not know who his/her customers are
   ____ demonstrates little or no concern for customer needs
   ____ demonstrates some concern for customer needs; friendly
   ____ demonstrates considerable concern for customer needs; relates personally to customer

8. How would you rate the graduate's job performance in terms of QUALITY of work produced—the degree to which his/her work is "fit for the customer"? (check one)
   ____ many defects or errors produced
   ____ some defects or errors produced
   ____ few defects or errors produced; within acceptable level
   ____ very few defects or errors produced; takes pride in his/her work

9. How would you rate the graduate's job performance in terms of INITIATIVE demonstrated in his/her work? (check one)
   ____ lacks drive; does as little as possible to get by
   ____ shows some drive; follows the lead of others in work unit
   ____ works hard; looks for more work to do upon completing a task (doesn't stand around)
   ____ a team leader who will "go the extra mile" to get the job done right

Continued on back.

10. How would you rate the graduate's FLEXIBIITY in his/her work? (check one)
    ____ can do only one job
    ____ some ability to do more than one type of job
    ____ ability to do many different jobs; adapts well to change
    ____ not applicable; don't know

11. How would you rate the graduate in terms of COOPERATION with other workers? (check one)
    ____ not very cooperative; off by himself/herself
    ____ cooperates with other workers when asked
    ____ cooperates with other workers even when not asked
    ____ helps to build cooperation with other workers

12. How would you rate the graduate's ABILITY TO LEARN (new concepts, techniques, or procedures) on the job? (check one)
    ____ lacks basic skills needed for learning on the job
    ____ has basic skills needed for learning on the job
    ____ has considerable skill and knowledge; takes advantage of training or educational opportunities in organization
    ____ don't know

13. How would you rate the graduate's POTENTIAL FOR ADVANCEMENT in this line of work? (check one)
    ____ no potential for advancement either in terms of pay or job responsibility
    ____ some potential to advance on pay scale in work unit
    ____ potential to advance in work unit, both in terms of pay and job responsibility
    ____ excellent potential for advancement in organization, e.g., from staff to management level job

14. How would you rate the graduate in terms of his/her ability to COMMUNICATE? (check one <u>in each part</u>)
    a. verbal communication
       ____ good ____ poor ____ can't tell
    b. written communication
       ____ good ____ poor ____ can't tell
    c. nonverbal communication (See attached sheet for definition of nonverbal communication.)
       ____ good ____ poor ____ can't tell

15. What is the graduate's present wage/salary (including tips, if applicable)?
    _____
    a. Does the graduate's job carry with it any benefits?
       ____ Yes ____ No
    b. If you answered "Yes" to the question in (a), what benefits are provided?
       ____ health coverage
       ____ dental coverage
       ____ vacation pay
       ____ pension (retirement)
       ____ visual (glasses, checkup)
       ____ other _____

16. Do you have a system to measure the productivity of each of your employees?
    ____ Yes
    Does this system include a structure for rewarding employees with high productivity ratings?
    ____ Yes ____ No
    ____ No

17. Do you provide any feedback to employees regarding their performance, e.g., periodic review?
    ____ Yes
    Is this feedback diagnostic? That is, does it tell them what they are doing right and what they are doing that needs to be corrected or improved?
    ____ Yes ____ No
    ____ No

18. If you had it to do over, would you hire this graduate again?
    ____ Yes ____ No

19. Is there anything more you would like to say about this graduate?
    _____
    _____
    _____

This completes the questionnaire. Thank you very much for your cooperation. You have been very helpful. Please return it, <u>unsigned</u>, in the self-addressed stamped envelope enclosed for your convenience.

James R. Veale, Ph.D.
Statistical/Research Consultant
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DEFINITION OF "CUSTOMER"

A "customer" is usually thought of as an ultimate consumer or buyer of a product or service, e.g., a customer in a restaurant or department store. In manufacturing industries and in most service industries, it is important to think of the customers of a worker as the people or work units who use what the worker produces (or provides).

Note that a customer in the above definition is worker-specific. For example, in a grocery store, the people who come to the store to buy food are the customers of the manager, owner, and the clerks who work there. However, consider the job of the accountant for the store. The accountant's customer is the manager or owner, for whom he/she provides information on profits, expenses, and so on. For another example, consider the worker in a tire company whose job is to cut the fabric out of which the tires are made. This worker, called a "banner operator," has as his/her customer the person who uses their product (the cut fabric) to build the tires. The banner operator is, by the same token, the customer of the worker whose job it is to make the fabric. Another example is in a restaurant with table service. The server (waiter or waitress) is the cook's customer, since the former uses the product (cooked food) prepared by the latter. The people who come to the restaurant to dine are, of course, the customers of the server, the manager, and the owner.

This somewhat more technical, worker-specific definition of a customer is very useful in productivity measurement. It is also important to the quality improvement process, since a worker who has a good sense of who his/her customer is, and who feels it is important to meet the needs of that customer, will be more likely to contribute to producing (or providing) a higher quality end-product (or service).

DEFINITION OF "NONVERBAL COMMUNICATION"

Nonverbal communication is communication which is neither verbal nor written, and includes, for example, the manual demonstration of a work procedure, the use of sign language (with a deaf worker), gestures, eye contact, good touch (hug or pat on back), sense of rhythm or flow, a smile, and positive "vibes".

APPENDIX C

RELIABILITY OF EMPLOYER INSTRUMENT: FIELD TEST RESULTS

Behavior	P(agree)	P(near agree)
Punctuality	91.7%*	100.0%*
Work attendance	83.3%*	100.0%*
Responsibility	75.0%	91.7%*
Work quantity	33.3%	100.0%*
Customer-orientation	91.7%*	100.0%*
Work quality	50.0%*	91.7%*
Initiative	66.7%*	100.0%*
Flexibility	58.3%*	91.7%*
Cooperation	66.7%*	91.7%*
Ability to learn	66.7%*	91.7%*
Potential for advancement	75.0%*	100.0%*
Verbal skills	91.7%*	91.7%*
Written skills	83.3%*	83.3%*
Nonverbal skills	83.3%*	83.3%*
Other questions:		
System for productivity	91.7%*	91.7%*
Reward structure	66.7%	66.7%
Feedback (performance evaluation)	100.0%*	100.0%*
Diagnostic feedback	91.7%*	91.7%*
Hire employee again	91.7%*	91.7%*

[Key: "P(agree)" denotes the percent of agreements between supervisors (of common employee), "P(near agree)" denotes the percent of "near agreements" between supervisors, and "*" denotes a percentage that is significantly greater than what one would expect by chance (raters guessing randomly).]

APPENDIX D

RESPONDENTS VS. TARGET SAMPLE OF GRADUATES
(NUMBER BY SCHOOL)

School	Number of Respondents	Number in Target Sample	"Expected" Number of Respondents
Des Moines South	19	30	14.96
Des Moines North	16	35	17.46
Waterloo	16	23	11.47
Dubuque	16	33	16.46
Davenport	9	22	10.97
Clinton	16	27	13.47
Mason City	7	13	6.48
Ottumwa	4	8	3.99
Fort Dodge	4	4	2.00
Keokuk	8	13	6.48
Cedar Rapids	17	50	24.94
Burlington	13	33	16.46
Iowa City	5	8	3.99
Sioux City	26	58	28.93
Bettendorf	9	15	7.48
Council Bluffs	12	23	11.47
Fort Madison	6	8	3.99
Maquoketa	3	8	3.99
Others (Creston and Wellman)	0	2	1.00
TOTAL	206	413	

[Note: The Pearson chi-square for testing the goodness of fit of the respondent numbers to the expected number in each school, based on the target sample numbers, was computed to be 11.79. This is not significant ($P > .10$), so it was concluded that the representation by school was adequate.]